



# ASBMB '18

ANNUAL MEETING  
SAN DIEGO | APRIL 21–25

**PRGRAM**

*Held in conjunction with  
Experimental Biology*



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 **ASBMB**  
American Society for Biochemistry and Molecular Biology

# 2018 ASBMB ANNUAL MEETING PROGRAM 🕶️

San Diego  
Convention Center  
April 21 – 25

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# Program at-a-glance

## FRIDAY APRIL 20

Time	Location	Event
5:30 PM – 7:00 PM	Convention Center, 6A Lobby	<b>ASBMB Graduate and Postdoctoral Travel Award Professional Networking Event</b> <i>By invitation.</i>
5:30 PM – 7:30 PM	Marriott Marquis & Marina, Presidio	<b>SEBM Mentor Meet-Up and Career Development Workshop</b>

## SATURDAY APRIL 21

Time	Location	Event
8:30 AM – 4:30 PM	Convention Center, Room 6D	<b>ASBMB Graduate and Postdoctoral Travel Award Career Development Event</b> <i>By invitation.</i>
11:30 AM – 12:00 PM	Convention Center, Room 6C	<b>ASBMB Annual Meeting Orientation for Undergraduate Students</b>
11:30 AM – 6:00 PM	Convention Center, Room 6E	<b>ASBMB Judges' Orientation for the Undergraduate Poster Competition</b>
1:00 PM – 4:30 PM	Convention Center, Room 6B	<b>ASBMB Undergraduate Student Research Poster Competition</b>
12:00 PM – 6:00 PM	Convention Center, Hall D, Peer Mentor Pod	<b>Poster/Oral Presentation Practice &amp; Mentoring Session</b>
12:00 PM – 6:00 PM	Convention Center, Hall D, Career Corner	<b>Career Corner Sessions with Dr. Adams</b>
12:00 PM – 6:00 PM	Convention Center, Hall D, Career Counseling Room	<b>One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessment</b>
4:00 PM – 5:00 PM	Convention Center, Hall D, CRC-3	<b>Networking: A Required Life Skill</b>
4:45 PM – 5:45 PM	Convention Center, Room 6A	<b>ASBMB Exploring Careers Speed Networking for Undergraduates</b>
5:00 PM – 5:30 PM	Convention Center, Hall D, CRC-1	<b>Elements of a Credible Presentation</b>
5:30 PM – 6:00 PM	Convention Center, Hall D, CRC-1	<b>Wrap It Up! How to Summarize Your Research Poster in 5 Minutes or Less</b>
6:00 PM – 7:00 PM	Convention Center, Ballroom 20	<b>EB 2018 Opening Lecture: Tang Prize Award</b> <i>Harnessing Nature's Diversity for Gene Editing and Beyond</i> F. Zhang
7:00 PM – 8:30 PM	Convention Center, Sails Pavilion	<b>EB 2018 Welcome Reception</b>
7:00 PM – 8:30 PM	Convention Center, Sails Pavilion	<b>EB Science Outreach Activity Poster Session</b>
7:00 PM – 8:30 PM	Convention Center, Sails Pavilion	<b>EB Scientific Highlights Poster Session</b>

**SUNDAY APRIL 22**

Time	Location	Event
7:00 AM – 7:45 AM	Convention Center, Room 6B	<b>Wake-Up! It's Trivia Time</b>
8:00 AM – 8:15 AM	Convention Center, Room 6B	<b>ASBMB Business Meeting</b>
8:00 AM – 9:00 AM	Convention Center, Room 6B	<b>ASBMB Opening Lecture: Herbert Tabor Research Award</b> <i>Nutrient Regulation of Signaling and Transcription</i> G.W. Hart
9:00 AM – 9:30 AM	Convention Center, Room 6B	<b>FASEB Excellence in Science Award</b> <i>Nonsense-Mediated mRNA Decay and Human Disease: Genome Guardian and Executor</i> L.E. Maquat
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-2	<b>How to Choose Your Ideal Career</b>
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-3	<b>Get Up With Something on Your Mind</b>
9:00 AM – 5:00 PM	Convention Center, Hall D, Peer Mentor Pod	<b>Poster/Oral Presentation Practice &amp; Mentoring Session</b>
9:00 AM – 5:00 PM	Convention Center, Hall D, Career Corner	<b>Career Corner Sessions with Dr. Adams</b>
9:00 AM – 5:00 PM	Convention Center, Hall D, Career Counseling Room	<b>One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments</b>
9:30 AM – 11:00 AM	Convention Center, Hall D, CRC-1	<b>Career Building: How to Maximize One's Participation in a Scientific Conference</b>
10:00 AM – 10:30 AM	Convention Center, Room 6F	<b>Walter A. Shaw Young Investigator Award in Lipid Research</b> <i>Probing the Structure, Dynamics and Regulation of Lipid Signalling Enzymes and Their Role in Human Disease</i> J. Burke
10:00 AM – 11:00 AM	Convention Center, Hall D, CRC-2	<b>Negotiation Strategies for Scientists</b>
10:00 AM – 12:00 PM	Convention Center, Room 6C	<b>Biochemical Communication between the Microbiome and the Host</b>
10:00 AM – 12:00 PM	Convention Center, Room 6E	<b>Intrinsically Disordered Proteins and Their Regulation and Function</b>
10:00 AM – 12:30 PM	Convention Center, Room 6F	<b>Lipid Signaling and Metabolism</b>
10:00 AM – 12:00 PM	Convention Center, Room 6D	<b>Novel Enzymology</b>
10:00 AM – 12:00 PM	Convention Center, Room 1AB	<b>RNA Form and Function</b>
10:00 AM – 12:00 PM	Convention Center, Room 6A	<b>Strategically Building Your CV at Every Career Stage</b>
10:00 AM – 12:00 PM	Convention Center, Room 14A	<b>Synthetic Biology</b>
11:00 AM – 12:00 PM	Convention Center, Hall D, CRC-1	<b>Understanding Faculty Search Committees &amp; Finding Job Ads</b>

## Program at-a-glance continued

## SUNDAY

Time	Location	Event
11:00 AM – 12:00 PM	Convention Center, Hall D, CRC-2	<b>Making Mistakes When Speaking</b>
11:00 AM – 12:00 PM	Convention Center, Hall D, CRC-3	<b>Career Opportunities in Science Communications</b>
12:15 PM – 1:15 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>CREST (Connecting Researchers, Educators and Students) Conversations</b>
12:15 PM – 2:15 PM	Convention Center, Exhibit Halls A-D	<b>ASBMB Poster Presentations</b> <i>Refer to pages 70–87</i>
12:30 PM – 1:00 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Meet the Speakers</b>
12:30 PM – 2:00 PM	Convention Center, Room 6A	<b>ASBMB Advocacy Town Hall Meeting</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-1	<b>Job Hunting in Biotech Part I: Finding &amp; Applying for Scientist Positions</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-2	<b>Networking With Strangers is Required for Your Future</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-3	<b>Creating Effective CV's, Cover Letters, Research &amp; Teaching Statements</b>
1:00 PM – 2:30 PM	Convention Center, Room 14A	<b>SEBM Special Topics in Science, Student-Organized Symposium</b>
1:30 PM – 2:00 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Meet the Speakers</b>
2:00 PM – 3:00 PM	Convention Center, Hall D, CRC-1	<b>But I Have No Skills! Exploding Myths &amp; Exploring Career Options for PhDs</b>
2:00 PM – 3:00 PM	Convention Center, Hall D, CRC-2	<b>Career Opportunities in Science Communications</b>
2:00 PM – 3:00 PM	Convention Center, Hall D, CRC-3	<b>Networking: A Required Life Skill</b>
2:30 PM – 3:45 PM	Convention Center, Room 6C	<b>ASBMB Award for Exemplary Contributions to Education</b> <i>Promoting Hypothesis-Driven Thinking in the Undergraduate Biochemistry Lab</i> P.A. Craig
2:30 PM – 3:45 PM	Convention Center, Room 31B	<b>Advanced Biophysical and Biochemical Approaches to Membrane Dynamics (I)</b>
2:30 PM – 3:45 PM	Convention Center, Room 31A	<b>Advances in Mitochondrial Biochemistry</b>
2:30 PM – 3:45 PM	Convention Center, Room 30E	<b>Cancer Signaling</b>
2:30 PM – 3:45 PM	Convention Center, Room 30D	<b>Glycopolymer Probes</b>
2:30 PM – 3:45 PM	Convention Center, Room 31C	<b>Herbert Tabor Young Investigator Award Symposium</b>
2:30 PM – 3:45 PM	Convention Center, Room 30C	<b>Motion is Lotion: New Roles of Motion in Enzyme Function</b>

**SUNDAY**

<b>Time</b>	<b>Location</b>	<b>Event</b>
2:30 PM – 3:45 PM	Convention Center, Room 30B	<b>Plant Bioactive Natural Products: Discovery, Engineering and Applications</b>
2:30 PM – 3:45 PM	Convention Center, Room 30A	<b>RNA Recognition and Regulation</b>
3:00 PM – 4:00 PM	Convention Center, Hall D, CRC-1	<b>Job Hunting in Biotech Part 2: Interviewing for Scientist Positions</b>
3:00 PM – 4:45 PM	Convention Center, Room 14A	<b>Can We Target Aging?</b>
3:30 PM – 4:30 PM	Convention Center, Hall D, CRC-3	<b>Making the Grade: Job Talk/Chalk Talk</b>
4:00 PM – 5:00 PM	Convention Center, Hall D, CRC-2	<b>Nailing the Job Talk &amp; Interview Prep</b>
4:00 PM – 5:15 PM	Convention Center, Room 31B	<b>Advanced Biophysical and Biochemical Approaches to Membrane Dynamics (II)</b>
4:00 PM – 5:15 PM	Convention Center, Room 31A	<b>Chemical Biology</b>
4:00 PM – 5:15 PM	Convention Center, Room 30E	<b>Emerging Perspectives on Metabolism and Cell Fate Decisions</b>
4:00 PM – 5:15 PM	Convention Center, Room 30D	<b>Molecular Chaperones and Protease Systems</b>
4:00 PM – 5:15 PM	Convention Center, Room 30C	<b>Physiological Regulation by Cell Signaling</b>
4:00 PM – 5:15 PM	Convention Center, Room 30B	<b>Reading, Writing and Erasing Epigenetic Marks</b>
4:00 PM – 5:15 PM	Convention Center, Room 30A	<b>Structure and Mechanisms Regulating RNA Function</b>
4:15 PM – 5:15 PM	Convention Center, Room 31C	<b>BMB Professional Development: Advancing Successful Careers</b>
5:30 PM – 6:15 PM	Convention Center, Room 31C	<b>Organizing a Successful ASBMB Student Chapter</b>
5:30 PM – 7:00 PM	Convention Center, Room 31B	<b>The Art of the 3D Cell Culture, from Organoids to Organs-on-a-Chip</b>
5:30 PM – 7:00 PM	Convention Center, Room 31A	<b>Cryo-EM and Cryo-ET: Step-by-Step</b>
5:30 PM – 7:00 PM	Convention Center, Room 6B	<b>Storytelling and the Art of Giving a Good Presentation</b>
5:30 PM – 7:00 PM	Convention Center, Room 6A	<b>Strategically Building Your CV at Every Career Stage</b>
5:30 PM – 7:00 PM	Convention Center, Room 30E	<b>Your Data, Magnified: Success in Scientific Publishing</b>
7:00 PM – 8:30 PM	Convention Center, Foyer outside Rooms 30–31	<b>ASBMB Annual Meeting Networking Reception</b>

## Program at-a-glance continued

**MONDAY APRIL 23**

Time	Location	Event
7:00 AM – 7:45 AM	Convention Center, Room 6B	<b>Wake-Up! It's Trivia Time</b>
8:00 AM – 8:30 AM	Convention Center, Room 6B	<b>Avanti Award in Lipids</b> <i>Phospholipid Regulation of Inflammatory Processes and Viral Infection</i> D.R. Voelker
8:30 AM – 9:00 AM	Convention Center, Room 6B	<b>Mildred Cohn Award in Biological Chemistry</b> <i>The Origin Recognition Complex: Where It All Begins</i> L. Joshua-Tor
9:00 AM – 9:30 AM	Convention Center, Room 6B	<b>Earl and Thressa Stadtman Young Scholar Award</b> <i>Visualizing Translation by Ensemble Cryo-Em</i> A. Korostelev
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-1	<b>Developing Your Core Message Statement/ "Elevator Speech"</b>
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-2	<b>Goal Setting, Prioritizing, Time Management</b>
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-3	<b>Networking and Getting Your Foot in the Door</b>
9:00 AM – 10:30 AM	Convention Center, Room 31A	<b>NIH F Awards: Navigating NIH Programs to Advance Your Career</b>
9:00 AM – 5:30 PM	Convention Center, Hall D, Peer Mentor Pod	<b>Poster/Oral Presentation Practice &amp; Mentoring Sessions</b>
9:00 AM – 5:30 PM	Convention Center, Hall D, Career Corner	<b>Career Corner Sessions with Dr. Adams</b>
9:00 AM – 5:30 PM	Convention Center, Hall D, Career Counseling Room	<b>One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments</b>
10:00 AM – 11:00 AM	Convention Center, Hall D, CRC-3	<b>Career Opportunities in Science Communications</b>
10:00 AM – 12:00 PM	Convention Center, Room 6C	<b>Adapting Protesostasis to Ameliorate Neurodegenerative Diseases</b>
10:00 AM – 12:00 PM	Convention Center, Room 6A	<b>Communicating Scientific Ideas to Novice Audiences</b>
10:00 AM – 12:00 PM	Convention Center, Room 6D	<b>Glycobiology and Functional Glycomics</b>
10:00 AM – 12:05 PM	Convention Center, Room 6F	<b>New Insights into the Links between Metabolism and Disease</b>
10:00 AM – 12:00 PM	Convention Center, Room 14A	<b>Regenerative Medicine</b>
10:00 AM – 12:00 PM	Convention Center, Room 1AB	<b>RNA in Human Disease</b>
10:00 AM – 12:00 PM	Convention Center, Room 6E	<b>Systems Biology and Proteomics</b>
10:30 AM – 11:30 AM	Convention Center, Hall D, CRC-1	<b>Job Hunting in Biotech Part 3: Compensation Negotiation for Scientist Positions</b>
10:30 AM – 11:30 AM	Convention Center, Hall D, CRC-2	<b>Identifying Your Options using MyIPD + LinkedIn</b>

## MONDAY

Time	Location	Event
11:30 AM – 1:00 PM	Convention Center, Hall D, CRC-3	<b>NIH K Awards: Navigating NIH Programs to Advance Your Career</b>
12:00 PM – 1:00 PM	Convention Center, Hall D, CRC-2	<b>Constructing Your Elevator Pitch Workshop</b> (presented by ASBMB Outreach Committee)
12:15 PM – 2:15 PM	Convention Center, Exhibit Halls A-D	<b>ASBMB Poster Presentations</b> <i>Refer to pages 88–1105</i>
12:30 PM – 1:00 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Meet the Speakers</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-1	<b>Job Hunting in Biotech Part I: Finding &amp; Applying for Scientist Positions</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-2	<b>Building Your Job Search Skills: Networking &amp; Information Interviews</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-3	<b>Successful Behaviors for Winning An Interview</b>
1:30 PM – 2:00 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Meet the Speakers</b>
2:00 PM – 3:00 PM	Convention Center, Hall D, CRC-2	<b>Making The Case for Graduate School</b>
2:30 PM – 3:30 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Accreditation Program Q&amp;A</b>
2:30 PM – 3:30 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Communication Training Program Q&amp;A</b>
2:30 PM – 3:30 PM	Convention Center, Hall D, CRC-1	<b>Job Search in Academia &amp; Industry</b>
2:30 PM – 3:30 PM	Convention Center, Hall D, CRC-3	<b>Career Opportunities in Science Communications</b>
2:30 PM – 3:45 PM	Convention Center, Room 30A	<b>Chromatin Regulation of Gene Expression</b>
2:30 PM – 3:45 PM	Convention Center, Room 30B	<b>Emerging Antibiotics from Nature</b>
2:30 PM – 3:45 PM	Convention Center, Room 30C	<b>New Frontiers in Substrate Metabolism</b>
2:30 PM – 3:45 PM	Convention Center, Room 30D	<b>Plant Metabolism and Photosynthesis</b>
2:30 PM – 3:45 PM	Convention Center, Room 30E	<b>Protein Folding: The Good, the Bad and the Disordered</b>
2:30 PM – 3:45 PM	Convention Center, Room 31A	<b>Proteomics and Lipidomics: Methods and Applications for Human Disease</b>
2:30 PM – 3:45 PM	Convention Center, Room 31C	<b>Redox Enzymes</b>

## Program at-a-glance continued

## MONDAY

Time	Location	Event
2:30 PM – 5:15 PM	Convention Center, Room 31B	<b>Alice and C.C. Wang Award in Molecular Parasitology Symposium</b> <i>Using in vitro evolution and chemogenomics to explore the malaria parasite drug-able genome</i> E. Winzeler
3:00 PM – 5:00 PM	Convention Center, Room 14A	<b>Environmental Health, Biomarkers and Precision Medicine</b>
3:30 PM – 4:30 PM	Convention Center, Hall D, CRC-2	<b>Ten Ways to Get Lucky in the Job Search</b>
4:00 PM – 5:00 PM	Convention Center, Hall D, CRC-1	<b>Job Hunting in Biotech Part 2: Interviewing for Scientist Positions</b>
4:00 PM – 5:00 PM	Convention Center, Hall D, CRC-3	<b>Making the Grade: Job Talk/Chalk Talk</b>
4:00 PM – 5:15 PM	Convention Center, Room 31C	<b>BMB Education: Active Learning</b>
4:00 PM – 5:15 PM	Convention Center, Room 30B	<b>DNA Replication Initiation, Progression and Termination</b>
4:00 PM – 5:15 PM	Convention Center, Room 30C	<b>Glycoimmunity</b>
4:00 PM – 5:15 PM	Convention Center, Room 30D	<b>Lipid and Protein Organization in Membranes</b>
4:00 PM – 5:15 PM	Convention Center, Room 30E	<b>Molecular Tools to Study Cell Signaling</b>
4:00 PM – 5:15 PM	Convention Center, Room 31A	<b>Obesity, Metabolism and Immune Cells in Cancer</b>
4:00 PM – 5:15 PM	Convention Center, Room 30A	<b>Strange Microbial Transformations</b>
4:30 PM – 5:30 PM	Convention Center, Hall D, CRC-2	<b>Attitude &amp; Behaviors: How Are You Perceived</b>
5:30 PM – 7:00 PM	Convention Center, Room 6A	<b>Molecular Visualization</b>
5:30 PM – 7:00 PM	Convention Center, Room 31B	<b>Optogenetics and Molecular Sensors: Tools and Applications</b>
5:30 PM – 7:00 PM	Convention Center, Room 31A	<b>Research Support Opportunities at NSF in the BIO-Integrative Organismal Systems (IOS) and Molecular and Cellular Biosciences (MCB)</b>
5:30 PM – 7:00 PM	Convention Center, Room 30D	<b>Supported Lipid Membranes and Nanodiscs</b>
5:30 PM – 7:00 PM	Convention Center, Room 6B	<b>Transforming Science Research into Science Outreach</b>
9:00 PM – 11:00 PM	Hilton Bayfront, Aqua A-C.	<b>Young Experimental Scientists (Y.E.S.) Mixer</b>

**TUESDAY APRIL 24**

Time	Location	Event
7:00 AM – 7:45 AM	Convention Center, Room 6B	<b>Wake-Up! It's Trivia Time</b>
8:00 AM – 8:30 AM	Convention Center, Room 6B	<b>ASBMB-Merck Award</b> <i>Black Spot, Black Death, Black Pearl: The Tales of Bacterial Effectors</i> K. Orth
8:30 AM – 9:00 AM	Convention Center, Room 6B	<b>Ruth Kirschstein Diversity in Science Award</b> <i>Vision Cycle Proteins: Their Function, Structure and Links to Retinal Disease</i> A. Tsin
9:00 AM – 9:30 AM	Convention Center, Room 6B	<b>DeLano Award for Computational Biosciences</b> <i>Solutions to the Computational Protein Folding Problem</i> C. Sander
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-1	<b>How Sensations and Perceptions Influence Your Behavior</b>
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-2	<b>What You Seek is What You Get</b>
9:00 AM – 10:00 AM	Convention Center, Hall D, CRC-3	<b>Career Opportunities in Science Communications</b>
9:00 AM – 10:30 AM	Convention Center, Room 31A	<b>NIH K Awards: Navigating NIH Programs to Advance Your Career</b>
9:00 AM – 4:00 PM	Convention Center, Hall D, Peer Mentor Pod	<b>Poster/Oral Presentation Practice &amp; Mentoring Sessions</b>
9:00 AM – 4:00 PM	Convention Center, Hall D, Career Corner	<b>Career Corner Sessions with Dr. Adams</b>
9:00 AM – 4:00 PM	Convention Center, Hall D, Career Counseling Room	<b>One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments</b>
10:00 AM – 12:00 PM	Convention Center, Room 6E	<b>Advances in Single Cell Omics</b>
10:00 AM – 12:00 PM	Convention Center, Room 6F	<b>Biochemistry of Autophagy and Organelle Trafficking</b>
10:00 AM – 12:00 PM	Convention Center, Room 6C	<b>Plants Do It All</b>
10:00 AM – 12:00 PM	Convention Center, Room 1AB	<b>RNA-mediated Epigenetics</b>
10:00 AM – 12:00 PM	Convention Center, Room 6D	<b>Signal Transduction, Pathogenesis and Disease</b>
10:00 AM – 12:00 PM	Convention Center, Room 14A	<b>Structural Biology</b>
10:30 AM – 11:30 AM	Convention Center, Hall D, CRC-1	<b>Job Hunting in Biotech Part 3: Compensation Negotiation for Scientist Position</b>
10:30 AM – 11:30 AM	Convention Center, Hall D, CRC-2	<b>But I Have No Skills! Exploding Myths &amp; Exploring Career Options for PhDs</b>
10:30 AM – 11:30 AM	Convention Center, Hall D, CRC-3	<b>Translating Your CV into an Effective Resume + LinkedIn Profile</b>
12:00 PM – 1:30 PM	Convention Center, Hall D, CRC-2	<b>NIH F Awards: Navigating NIH Programs to Advance Your Career</b>

## Program at-a-glance continued

## TUESDAY

Time	Location	Event
12:15 PM – 2:15 PM	Convention Center, Exhibit Halls A-D	<b>ASBMB Poster Presentations</b> <i>Refer to pages 106–123</i>
12:30 PM – 1:00 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Meet the Speakers</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-1	<b>How to Choose Your Ideal Career</b>
1:00 PM – 2:00 PM	Convention Center, Hall D, CRC-3	<b>Navigating Doctoral Work Protocols/Milestones/ Requirements</b>
1:30 PM – 2:00 PM	Convention Center, Exhibit Hall, across from ASBMB Booth 1316	<b>ASBMB Meet the Speakers</b>
2:00 PM – 3:00 PM	Convention Center, Hall D, CRC-2	<b>Next Gen PhDs and Careers</b>
2:30 PM – 3:30 PM	Convention Center, Hall D, CRC-3	<b>Career Opportunities in Science Communications</b>
2:30 PM – 3:45 PM	Convention Center, Room 30A	<b>DNA Damage and Repair</b>
2:30 PM – 3:45 PM	Convention Center, Room 30B	<b>Mechanisms of G Protein Signaling</b>
2:30 PM – 3:45 PM	Convention Center, Room 30D	<b>Membrane Lipid Biochemistry</b>
2:30 PM – 3:45 PM	Convention Center, Room 30C	<b>Metabolic Reprogramming</b>
2:30 PM – 3:45 PM	Convention Center, Room 30E	<b>Metals in Biology</b>
2:30 PM – 3:45 PM	Convention Center, Room 31A	<b>Protein Folding: Every Which Way but Loose</b>
2:30 PM – 3:45 PM	Convention Center, Room 31B	<b>Structure and Mechanism in Natural Product Biosynthesis Enzymes</b>
2:30 PM – 3:45 PM	Convention Center, Room 31C	<b>Tools for Exploring Glycobiology</b>
3:00 PM – 4:00 PM	Convention Center, Hall D, CRC-1	<b>Global Interview Skills: A Practice Workshop for International Candidates</b>
3:00 PM – 4:00 PM	Convention Center, Hall D, CRC-2	<b>The Strategic Postdoc: How to Find &amp; Leverage Your Postdoc Experience</b>
3:00 PM – 5:00 PM	Convention Center, Room 14A	<b>Novel Antibiotics &amp; Alternatives</b>
4:00 PM – 5:15 PM	Convention Center, Room 31C	<b>Cell Stress, Autophagy and Mitophagy</b>
4:00 PM – 5:15 PM	Convention Center, Room 31B	<b>Chromatin, Replication and Repair</b>
4:00 PM – 5:15 PM	Convention Center, Room 31A	<b>Engineering Biology</b>

**TUESDAY**

Time	Location	Event
4:00 PM – 5:15 PM	Convention Center, Room 30E	<b>High-throughput Methods for Connecting Transcriptomes, Proteomes, and Secretomes</b>
4:00 PM – 5:15 PM	Convention Center, Room 30D	<b>Molecular Basis of Signaling</b>
4:00 PM – 5:15 PM	Convention Center, Room 30C	<b>Nutrition, Genetics and Metabolism</b>
4:00 PM – 5:15 PM	Convention Center, Room 30B	<b>Ribosomes and Translational Regulation</b>
5:30 PM – 7:30 PM	Convention Center, Room 6A	<b>ASBMB Women Scientists Mentoring and Networking Event</b>

**WEDNESDAY APRIL 25**

Time	Location	Event
7:00 AM – 7:45 AM	Convention Center, Room 6C	<b>Wake-Up! It's The Last Day for Trivia Time</b>
8:00 AM – 8:30 AM	Convention Center, Room 6C	<b>Bert and Natalie Vallee Award in BioMedical Science</b> <i>How Telomeres Solve the Chromosome End-Protection Problem</i> T. de Lange
8:30 AM – 9:00 AM	Convention Center, Room 6C	<b>William C. Rose Award</b> <i>What Can Protein Methylation Tell Us About Histones, Ribosomes, Translation Factors and the Biology of Cancer and Aging?</i> S.G. Clarke
9:00 AM – 12:00 PM	Convention Center, Sails Pavilion	<b>One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments</b>
9:30 AM – 11:30 AM	Convention Center, Room 6D	<b>Biochemical Basis for Epigenetics and Chromatin Remodeling</b>
9:30 AM – 11:30 AM	Convention Center, Room 1A	<b>Enzyme Dynamics in Catalysis, Spectroscopy and Theory</b>
9:30 AM – 11:30 AM	Convention Center, Room 6C	<b>Metabolomics and Lipidomics</b>
9:30 AM – 11:30 AM	Convention Center, Room 1B	<b>Metals in Biology</b>
12:00 PM – 12:30 PM	Convention Center, Sails Pavilion	<b>ASBMB Meet the Speakers</b>
12:15 PM – 2:15 PM	Convention Center, Sails Pavilion	<b>ASBMB Late-breaking Poster Presentations</b> <i>Refer to pages 124–131</i>

**WAKE-UP! It's Trivia Time**

*Calling all trivia junkies! Join your colleagues for a daily dose of trivia, music, fun & prizes!*

# ASBMB oral program

## FRIDAY APRIL 20

### 1 **ASBMB Graduate and Postdoctoral Travel Award Professional Networking Event**

#### SOCIETY EVENTS

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, 6A LOBBY

CHAIRS: C. Heinen, T. O'Connell

*Invitation only.* Graduate and postdoctoral travel awardees meet for a kick-off reception and networking activity geared to practice networking skills and engage with Saturday's career program presenters.

### 2 **SEBM Mentor Meet-Up and Career Development Workshop**

#### SEBM EVENTS

**5:30 PM – 7:30 PM** SAN DIEGO MARRIOTT MARQUIS & MARINA, PRESIDIO

CHAIR: M. D'Ecclessis

Guest Society: Society for Experimental Biology and Medicine

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*#asbmb2018*

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& award lectures



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Outreach



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Poster  
Presentations



#PosterPresentations

Policy



#SciPolicy

#### Build your itinerary

##### Step One:

*Visit the Apple Store or Google Play, search EB Annual Meetings, and download the app.*

##### Step Two:

*Go to Settings (wheel icon), tap My Profile, and customize your app.*

##### Step Three:

*Click the Sessions icon to explore the program. To add an event to your schedule, tap the star.*

##### Step Four:

*Tap the My Schedule icon, and get ready to enjoy the meeting!*

# SATURDAY

## APRIL 21

Saturday

### 27 **ASBMB Graduate Student and Postdoctoral Fellow Career Development Event**

#### SOCIETY EVENTS

**8:30 AM – 4:30 PM** SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAIRS: C. Heinen, T. O'Connell

*8:30 a.m. begins required check-in in the lobby area outside of room 6A. Invitation only.*

*Required participation for all Graduate and Postdoctoral Travel Award recipients.*

Start the meeting with an exploration of careers, opportunities to network and build new skills, all to help advance your short and long-term career goals.

### 28 **ASBMB Annual Meeting Orientation for Undergraduate Students**

#### SOCIETY EVENTS

**11:30 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAIR: J. Provost

Feeling overwhelmed by all the options? Not sure what sessions to attend? This meeting orientation will help you craft your personal game plan to get the most out of your national meeting experience.

*Orientation open to all ASBMB member and biochemistry registrants.*

*Attendance required for all ASBMB undergraduate travel award winners.*

### 29 **ASBMB Judges' Orientation for the Undergraduate Poster Competition**

#### AWARD COMPETITION

**11:30 AM – 6:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAIRS: K. Cornely, K. Dickson, P. Ortiz

*Volunteer judges (Undergraduate faculty and PI's) should report to Room 6E for this orientation/training session.*

*Drop-in's welcome (Faculty and PI's only) and must check-in with organizers during this orientation session.*

### 30 **ASBMB Undergraduate Student Research Poster Competition**

#### AWARD COMPETITION

**1:00 PM – 4:30 PM** SAN DIEGO CONVENTION CENTER, ROOM 6B

CHAIRS: K. Cornely, K. Dickson, P. Ortiz

*Advance competitor registration required.*

*Board assignments distributed during event check-in beginning at 12:00 p.m. Posters must remain on display for the entire event.*

Best Poster winners announced on Sunday, April 22, at 2:30 p.m. during the ASBMB Award for Exemplary Contributions to Education Lecture.

### 3 **Poster/Oral Presentation Practice & Mentoring Session**

#### WORKSHOP

**12:00 PM – 6:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, PEER MENTOR POD

FASEB Diversity Resources Program will sponsor Presentation Practice & Mentoring Sessions beginning Saturday, April 21, to provide FASEB DREAM poster/oral presentation travel award recipients and other interested EB2018 student/postdoc attendees with an opportunity to practice their presentations and obtain feedback from designated Workshop Mentors/Coaches. If you would like to participate in the poster/oral presentation & mentoring sessions, sign-up by using the following link, [www.experimentalbiology.org](http://www.experimentalbiology.org) beginning Sunday, April 1.

### 4 **Career Corner Sessions with Dr. Adams**

#### WORKSHOP

**12:00 PM – 6:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER CORNER

Drop in for one-on-one or group sessions for career counseling/career planning sessions with Dr. Howard G. Adams in between his presentations in the EB2018 Career Center. Dr. Adams will be available in the "Career Corner" in the EB2018 Career Center located in Hall D beginning on Saturday, April 21.

### 5 **One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessment**

#### WORKSHOP

**12:00 PM – 6:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER COUNSELING ROOM

Sign-up for one-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. If you're interested in a one-on-one, advance sign up will start on Sunday, April 1. Click on [www.experimentalbiology.org](http://www.experimentalbiology.org) to schedule your session.

### 6 **Networking: A Required Life Skill**

#### WORKSHOP

**4:00 PM – 5:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

To succeed in today's competitive world of work, who you know can be as critical as what you know. Successfully networking, to develop contacts, is a required skill. Networking involves 1) making contacts, 2) establishing cordial relationships, and 3) ultimately bonding to mutually support each other and share information. This seminar explores skills and techniques germane to successful networking.

During the session, Dr. Howard Adams will cover the following key topics: 1) Dimensions of Networking; 2) Networking to enhance one's career/professional development; 3) Networking concerns: How? When? Where? Why? 4) Tips for Successful Networking; 5) Do's and Don'ts of Networking.

SPEAKER: H. Adams, H.G. Adams & Assoc., Norfolk, VA

### 31 **ASBMB Exploring Careers Speed Networking for Undergraduates**

#### WORKSHOP

**4:45 PM – 5:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 6A

Scientists from a variety of career fields will meet with students and share advice about their career paths. All undergraduate student, ASBMB members and biochemistry registrants are welcome and encouraged to attend.

## 7 Elements of a Credible Presentation

### WORKSHOP

**5:00 PM – 5:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-I

SPEAKER: E. Rosa-Molinar, *Univ. of Puerto Rico—Rio Piedras and Univ. of Puerto Rico Sch. of Med.*

## 8 Wrap It Up! How to Summarize Your Research Poster in 5 Minutes or Less

### WORKSHOP

**5:30 PM – 6:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-I

This presentation serves to instruct researchers, primarily trainees, on how to effectively summarize their research in five minutes or less. The information presented mainly focuses on poster presentations but can also be applied to other areas such as informational interviews. Emphasis is placed on key points such as knowing the target audience, knowledge of the research/results, and the ability to convey a clear, concise and accurate message. One highlight of this presentation is the incorporation of technology and how to use it to further enhance and disseminate the information.

SPEAKER: S-G. Scott, *American Gastroenterological Assn.*

## 10 EB 2018 Tang Prize Award Lecture

### LECTURE

**6:00 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, BALLROOM 20

### Harnessing Nature's Diversity for Gene Editing and Beyond

SPEAKER: Feng Zhang, *Broad Institute of MIT and Harvard, Cambridge, MA 02142, USA, McGovern Institute for Brain Research, Department of Brain and Cognitive Sciences, Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139, USA*

Precision genome editing, the ability to alter specific DNA sequences, is a powerful tool for understanding the molecular circuitry underlying cellular processes. Over the past several years, we and others have harnessed microbial CRISPR-Cas systems for use as platforms for a range of genome manipulations, including single and multiplex gene knockout, gene activation, and large-scale screening applications. Recently, we discovered and characterized several novel CRISPR systems that target RNA, including the CRISPR-Cas13 family. We recently reported that Cas13 can be reprogrammed using a single RNA guide to cleave target mRNAs in vivo and that a dead variant of Cas13 (dCas13), created through mutation of the RNase domain, retains target specificity and binding activity. dCas13 provides a platform for a range of RNA-modulation applications, including transcript imaging and RNA editing. Cas13 also exhibits so-called "collateral" activity in vitro, which we capitalized on to create SHERLOCK, a highly sensitive and specific CRISPR diagnostic platform. We are continuing to explore microbial diversity to find new enzymes and systems that can be adapted for use as molecular biology tools and novel therapeutics.

## 11 EB 2018 Welcome Reception

### SOCIETY EVENTS

**7:00 PM – 8:30 PM** SAN DIEGO CONVENTION CENTER, SAILS PAVILION

Join fellow attendees for our second, inter-disciplinary meet and mingle. Appreciate the power and energy of the EB Meeting as all career levels come together for fun and networking.

*Light refreshments will be served. Member-attendees receive one complimentary drink ticket when they sign up for the event during EB Meeting registration. Cash bar also available.*

## 12 EB Science Outreach Activity Poster Session

### POSTER

**7:00 PM – 8:30 PM** SAN DIEGO CONVENTION CENTER, SAILS PAVILION

During the EB Welcome Reception, science outreach programs from around the country will have their activities on display and are certain to spark interest, ideas, networks and great conversation.

*Authors will be at their boards from 7:00–8:00 PM*

- 7:00 OAI 12.1 **#DoSomething! Raising awareness about antibiotic resistance the SWI way.** A. M. Barral, E. Kurt, *National University and Small World Initiative*
- OA2 12.2 **2<sup>nd</sup> Grade Students Have PhUn Learning About Thermoregulation.** P.A. Halpin, *University of New Hampshire at Manchester*
- OA3 12.3 **A Successful STEM Outreach Program at Marshall University.** T.J. Whitlow, M. Wilson, T. Cartwright, R. Zuberbuehler, *Marshall University*
- OA4 12.4 **A World of PhUn: Hands-On Exploration of Neuro & Cardiac Physiology with 4<sup>th</sup>-Grade Students.** F.E. Mowry, S.C. Peaden, L.B. Olivia, C.M. Robinson, E.S. Coleman, D.D. Schwartz, V.C. Biancardi, *Auburn University*
- OA5 12.5 **Addressing Health Disparities in Los Angeles County via a Medical Outreach Program.** A. Jalali, B. Varamini, *Biola University*
- OA6 12.6 **Anatomy Explorers: A Pilot Science Outreach Exchange between Bangalore and London.** L. Wilson, C. Pym, C. Deshpande, T. Thomas, R. Wingate, *King's College London, United Kingdom*
- OA7 12.7 **Anatomy STEM Outreach at Colorado State University.** C.A. Meyer, H. Hall, K.R. Ivie, N. Heise, T.R. Clapp, *Colorado State University*
- OA8 12.8 **Arizona Research Collection for Integrative Vertebrate Evolution and Study (ARCIVES): An Innovative Zoological Collection.** N.E. Wells, K.E. Townsend, H.F. Smith, J.E. Georgi, A.E. Lee, B.E. Adrian, *Midwestern University*
- OA9 12.9 **Art of Science Communication—Engaging Any and All Audiences.** H. Alexander, *Public Outreach Committee of ASBMB*
- OA10 12.10 **ArtLab; Exploring the intersection of art and science.** K.H. Oliver, *Vanderbilt University Medical Center*
- OA11 12.11 **Bringing Physiology Understanding Week to Fourth Graders in State College, PA.** A. Dey, J. Hester, K. Ghanem, D. Korzick, *The Pennsylvania State University*
- OA12 12.12 **Bringing Rural Areas Interactive Neuroscience: The BRAIN Initiative at the University of Vermont.** R. St. Clair, *University of Vermont*
- OA13 12.13 **Building and Sustaining QCC-MSEIP Outreach Activities to Ensure Underrepresented STEM Student Engagement.** N. Gadura, *Queensborough Community College*
- OA14 12.14 **Community of Practice as a Model for Science Education Outreach.** E. Li, M. Southwell, B. Forster, K. Snetselaar, *Saint Joseph's University*
- OA15 12.15 **Creating Connections in our Community.** G.G. Dachel, R. Knier, *University of Wisconsin-Stout*
- OA16 12.16 **Determination Of Effective Dose Fifty (Ed<sub>50</sub>) Of Scorpion Antivenom Against Scorpion Envenomation Using The Newly Developed Formula.** S. Alhaji Saganuwan, *University of Agriculture Makurdi, Nigeria*
- OA17 12.17 **Development of a Graduate Minor in Communicating Science at Indiana University.** J. Organ, M. Wininger, K. Hoffmann-Longtin, *Indiana University School of Medicine and Indiana University–Purdue University Indianapolis*
- OA18 12.18 **Discovery Box Loan Program Provides STEM Engagement Materials to Regional Schools.** R.P. Rylaarsdam, K. Tumminello, *Benedictine University*
- OA19 12.19 **Enhancing Critical Thinking Skills of High School Science Students: an Outreach Project.** P. Williams, D.L. Lally, J. Donahue, G. Gillaspay, *Virginia Tech*
- OA20 12.20 **Evaluating Flipped Teaching in STEM: A Rubric.** R. Rockhold, M. Barnard, C. Compretta, E. Dehon, M. Elasri, E. Meyer, A. Notebaert, S. Stray, D. Sullivan, J. Taylor, *University of Mississippi Medical Center, University of Mississippi and University of Southern Mississippi*
- OA21 12.21 **Evidence-based resources for evolutionary medicine education.** S. Brownell, D. Grunspan, R. Nesse, *Arizona State University*
- OA22 12.22 **Falcon Biomanufacturing: Teaching molecular biology, protein expression, and entrepreneurship in a rural high school.** M. Koci, R. Ali, B. Boller, *NC State University and Bertie Early College High School*

- 0A23 **I2.23** Get Involved with the ASBMB Public Outreach Committee. D.R. Snowflack, ASBMB
- 0A24 **I2.24** Having “PhUn” Learning About Physiology in Nebraska. N.M. Sharma, A. Schiller, E.I. Boesen, *University of Nebraska Medical Center*
- 0A25 **I2.25** Health and Anatomy in the Wiregrass: a unique workshop for high school students in the Southeast region combining physiology, anatomy, scientific research, and creative thought. A.A. Vasauskas, M.N. Buchman, C.L. Richardson, *Alabama College of Osteopathic Medicine*
- 0A26 **I2.26** How to Change an Outreach Service into a Scholarly Activity? An Important State Infrastructure with Six Cycles of NIH Funding. P.S. Klinkhachorn, A. Klinkhachorn, *West Virginia University and MetroHealth Hospital*
- 0A27 **I2.27** Impact of Immersive STEM Summer Camp for Underprivileged Middle Schoolers. A.E. Martinez, R. Tirgar, A. Ribes-Zamora, G. Villares, *University of St. Thomas*
- 0A28 **I2.28** Kentucky Chapter of The American Physiological Society’s Involvement in Science Outreach. W.K. Sumanasekera, R. Cooper, L. Winchester, F. Andrade, S. Tyagi, I. Joshua, *Sullivan University College of Pharmacy, University of KY, Western KY University and University of Louisville*
- 0A29 **I2.29** LEAP into Research: A program to help transfer students get involved in research. K. Cooper, S. Brownell, *Arizona State University*
- 0A30 **I2.30** Mapping the Body: Poetry and Anatomical Art— New Student Exhibit Merges Humanities and Sciences in Higher Education Collaboration. A.N. Dueñas, B. Barker, N. Beer, D. Royer, *University of Colorado, Anschutz Medical Campus and University of Colorado Denver*
- 0A31 **I2.31** Michigan Physiological Society introduces an undergraduate Physiology Quiz team competition at their annual meeting. V.S. VanRyn, E.A. Wehrwein, H-M. Cheng, S. Barman, *Michigan State University and University of Malaya, Malaysia*
- 0A32 **I2.32** Molecular Modeling Programs Using Physical Models Make the Invisible World “Real”. D.H. Munzenmaier, J. Birschbach, M. Franzen, M. Hoelzer, M. Warden, T. Herman, *Milwaukee School of Engineering*
- 0A33 **I2.33** Otterbein University ASBMB Student Chapter: Dropping the Science. H.M. Bailey, E.K. Hughes, D.T. Wei, J.T. Tansey, *Otterbein University*
- 0A34 **I2.34** Outreach in New York City! The ASBMB Student Chapter at Marymount Manhattan College. J. Furnari, K. mora, a. aguanno, *marymount manhattan college and marymount manhattan*
- 0A35 **I2.35** PDB-101: Educational Resources for Molecular Explorations Through Biology and Medicine. S.K. Burley, C. Zardecki, C. Christie, S. Dutta, D.S. Goodsell, R. Lowe, C. Randle, W. Tao, M. Voigt, J. Woo, *RCSB Protein Data Bank and RCSB PDB*
- 0A36 **I2.36** PhUn week at San Diego: Giving students the hands-on experience in Physiology to inspire the pursuance of college and career pathways in the Biomedical Sciences. K. Ananthakrishnan, A. Hernandez-Carretero, O. Molinar-Inglis, *University of California San Diego*
- 0A37 **I2.37** Physiology Friday with Michigan Tech University: Using Lumber, Woodscrews, and Power Drills to Facilitate Understanding of Human and Animal Movement in Rural High Schools. S. Elmer, T. Bye, K. Carter, *Michigan Technological University*
- 0A38 **I2.38** Pills, Potions and Poisons: A High School Science Enrichment Program. K. Summers, M. Downing, N. Kwiek, *The Ohio State University*
- 0A39 **I2.39** Sample a Taste of Science. P.K. Bahia, *Scientists and Inc.*
- 0A40 **I2.40** Science for Adults. A. Decker, *Fleet Science Center*
- 0A41 **I2.41** Science Outreach Program For High Schools That Serve Underrepresented Minorities: Generating a Catalyst for Science. M.J. Massimelli, K. Denaro, *University of California Irvine*
- 0A42 **I2.42** Science Stories on Instagram. T. Wilkie, H.S. Kantheti, *UT Southwestern Med Center and UT Dallas*
- 0A43 **I2.43** Scientific Community Outreach: Promoting Science to Students at the K-12 Level and STEM Students in ASBMB UPR-RP. E.D. Navarro, M.G. Perez-Oquendo, J.D. Ramirez-Lugo, *University of Puerto Rico-Rio Piedras, Puerto Rico*
- 0A44 **I2.44** Scientific Community Outreach: Promoting Science to Students at the K-12 Level and STEM Students in ASBMB UPR-RP. E.D. Navarro, M.G. Perez-Oquendo, J. Ramirez-Lugo, *University of Puerto Rico-Rio Piedras, Puerto Rico*
- 0A45 **I2.45** Social Synapse: Building a Better Network through Educational Outreach at the Department of Neurological Surgery at Northwestern University. A. Martiny, K. Peck, M. Walsh, J. Chandler, *Northwestern University Feinberg School of Medicine and Northwestern Memorial Hospital*

## ASBMB oral program SATURDAY continued

Saturday

- 0A46 **I2.46** Students Understanding Principles of Research Education through Medicine, Engineering, and Science (SUPREMES). B.R. Hoffmann, T. Sobotka, *Medical College of Wisconsin*
- 0A47 **I2.47** TAKE SHAPE: Teaching Engineering and Science through Humor, the Arts, and Play. J.L. DuBois, *Montana State University*
- 0A48 **I2.48** The Engaged Scientist: Building Capacity in Science Outreach through Trainings. C. Vrentas, *The Engaged Scientist*
- 0A49 **I2.49** The Generation Rx Laboratory: Pharmacology Education for Science Museum Guests of All Ages. N.C. Kwiek, C.W. Canan, K. Summers, M. Downing, *Ohio State University*
- 0A50 **I2.50** The March for Science- Initiating, Leading, and Surviving the World's Largest Science Outreach Event. J.M. Berman, *UTHSCSA*
- 0A51 **I2.51** The Museum of Anatomy: a Tool for Democratization of Science. A.O. da Rocha, M.P.O. de Moraes, J.M.A. Picanço, G.D.G.R. Thomaz, *Federal University of Health Sciences of Porto Alegre, Brazil*
- 0A52 **I2.52** The Recreation of the Phineas Gage Accident. D. Heck, D. Donegan, M. Stabio, *University of Colorado Anschutz Medical Campus*
- 0A53 **I2.53** The Role of Informal Youth STEM Program Participation in Undergraduate Student STEM Interest. Rutland, *University of South Carolina- School of Medicine, Goldsmiths, University of London, United Kingdom and North Carolina State University*
- 0A54 **I2.54** Understanding ADCY5 Gene Mutation Biology: Patient-driven Rare Disease Scientific Outreach and iPSCs. S. Grossman, G. Grossman, *ADCY5.org*
- 0A55 **I2.55** University of Arizona ASBMB Student Chapter Outreach Activities. C.K. Park, A. Tran, H. Fukuzaki, M. Morrow, E. Wu, B. Reilly, *University of AZ*
- 0A56 **I2.56** Using Brains to Inspire Minds: A Unique Outreach Collaboration with the Boston Museum of Science. K.J. Babcock, E. Kong, A.C. Zumwalt, *Boston University School of Medicine, Museum of Science and Boston*
- 0A57 **I2.56** Welcoming Future Scientists: Engaging Puerto Rican High School Students in STEM through Community-based Learning and Outreach. W. Pacheco, K. Munoz, E. Suarez, *University of Puerto Rico-Ponce*

### 13 EB Scientific Highlights

#### POSTER

7:00 PM – 8:30 PM SAN DIEGO CONVENTION CENTER, SAILS PAVILION

- 7:00 SH1 **Optical Imaging Tools for Elucidating the Roles of Anions in Cellular Signaling.** S. Dodani, *The University of Texas at Dallas*
- SH2 **Tissue Factor Enhances the Alveolar Epithelial Barrier Integrity During Acute Lung Injury.** H. Sucharski, N. Putz, C. Shaver, L. Ware, J. Bastarache, *Vanderbilt University*
- SH3 **Reinforcing Potency and Effectiveness of Synthetic Cathinones: Potency Versus Selectivity for DAT.** B.M. Gannon, A. Sulima, K.C. Rice, M.H. Baumann, G.T. Collins, *The University of Texas Health Science Center at San Antonio, National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism, National In, National Institute on Drug Abuse and National Institutes of Health Intramural Research Program*
- SH4 **Structure-Based Drug Design to Overcome Temozolomide Resistance in Glioblastoma (Gbm) Through a Dual Inhibition of Mgmt and Base Excision Repair.** H. R. Madala, S. R. Punganuru, V. Arutla, K. Srivenugopal, *Texas Tech University Health Sciences Center*
- SH5 **Crispr-Cas9 Knock out of Gravin Variant I Impairs in Vitro Angiogenic Sprouting.** A. Ali, A. Spagnolia, M. Hull, M. Geffre, P. Bialk, E. Kmiec, B.D. Grove, *University of North Dakota School of Medicine and Health Sciences and Helen F. Graham Cancer Center and Research Institute*
- SH6 **Remodeling of Cardiac Energy Metabolism During Heart Failure.** L. Kalfhues, K. Bottermann, L. Leitner, U. Flögel, A. Gödecke, *Heinrich-Heine University of Düsseldorf, Germany*
- SH7 **New RiPP Family Incorporates Alpha-N-Methylations into Ribosomally Encoded Peptide Natural Products.** M. Freeman, *University of Minnesota*
- SH8 **Dopamine Transporter Activation Reduces Kv2.1 Activation Potential and Cluster Size.** J. Lebowitz, J.A. Pino Reyes, K. Divita, C. Henckel, M. Lin, G.E. Torres, H. Khoshbouei, *University of Florida College of Medicine*
- SH9 **The Muscle-Specific Ubiquitin Ligase Murf1 Regulates Autophagy via Foxo1/3 Ubiquitination to Inhibit Nf- $\kappa$ b Signaling and Protect Against Cardiac Inflammation *in Vivo*.** T.L. Parry, J.C. Schisler, J. M. Mwiza, J.K. Durand, A.S. Baldwin, M.S. Willis, *University of North Carolina*

- SH10 Malaria Derived Extracellular Vesicles Inhibit Neutrophils ROS Production and NETs Formation.** K.A. Babatunde, M. Walch, I. Fellay, S. Kharoubi-Hess, L. Filgueira, I. Ghiran, P-Y. Mantel, *University of Fribourg, Switzerland and Harvard Medical School*
- SH11 Examining the Role of Gut Dysbiosis in Neuroinflammation and Hypertension in a Model of Obstructive Sleep Apnea.** D. Durgan, B.P. Ganesh, J. Nelson, J. Eskew, N. Ajami, J. Petrosino, R. Bryan, *Baylor College of Medicine, The University of Texas Health Science Center and Mercer University*
- SH13 Cancer-Associated Fusions of the Protein Kinase C Kinase Domain Are Loss-of-Function.** A-A.N. Van, T.R. Baffi, M.T. Kunkel, C.E. Antal, A.C. Newton, *University of California and San Diego*
- SH14 Non Parenchymal Wnts Regulate Beta-Catenin Signaling in Murine Liver Zonation and Regeneration.** M. Preziosi, H. Okabe, M. Poddar, S. Singh, S. Monga, *University of Pittsburgh*
- SH15 3D Contrast Techniques for Visualizing Anatomy and Their Application for Human Education, Vertebrate Biomechanics and Paleobiology.** C.M. Holliday, F. McGetchie, L. Johnson, C. Hill, K. Sellers, K. Middleton, S. Sullivan, J. Schiffbauer, *University of Missouri*
- SH16 A Conserved Pain Syndrome Resulting from the Acute Activation of Trpa1 by Chemotherapy Drugs.** N. Boiko, E. Montano, K.M. Hargreaves, B.A. Eaton, J.D. Stockand, *The University of Texas Health Science Center at San Antonio*
- SH17 Leveraging Mouse Liver Co-Expression Networks and Human Lipid GWAS Data to Identify and Validate Cholesterol Metabolism Genes.** B.W. Parks, Z. Li, J. Nguyen, F. Leyva-Jaimes, *University of Wisconsin-Madison*
- SH18 Blood-Brain Barrier Penetrant and Orally Bioavailable Antidotes to Organophosphate Poisoning.** Y-J. Shyong, A. Garcia, Y. Sepulveda, Z. Radić, J. Momper, P. Taylor, *Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California and San Diego*
- SH19 Desmosomal Cadherins Desmoglein-2 or Desmocollin-2 Regulate Intestinal Epithelial Barrier Function and Mucosal Repair.** D. Kusters, S. Flemming, A-C. Luissint, R. Hilgarth, C. Parkos, A. Nusrat, *University of Michigan*
- SH20 New in Vivo MicroRNA Biotechnology Reveals Specific Roles for the mir-200 Family in Craniofacial Development.** M.E. Sweat, W. Yu, S. Eliason, Y.Y. Sweat, H. Cao, L. Hong, B.A. Amendt, *University of Iowa, Craniofacial Anomalies Research Center and University of Iowa College of Dentistry*
- SH21 Metabolic Syndrome and the Role of Glp-I Receptor Agonists in a Model of Postmenopausal Pcos.** E.D. Torres Fernandez, D.G. Romero, L.L. Yanes Cardozo, *University of Mississippi Medical Center*
- SH22 Cohesin Loss Eliminates All Loop Domains.** S.S. P. Rao, S-C. Huang, B. Glenn St. Hilaire, J.M. Engreitz, E.M. Perez, K-R. Kieffer-Kwon, A.L. Sanborn, S.E. Johnstone, G.D. Bascom, I.D. Bochkov, X. Huang, M.S. Shamim, J. Shin, D. Turner, Z. Ye, A.D. Omer, J.T. Robinson, T. Schlick, B.E. Bernstein, R. Casellas, E.S. Lander, E. Lieberman Aiden, *Stanford University, Baylor College of Medicine, Broad Institute of Massachusetts Institute of Technology and Harvard, Lymphocyte Nuclear Biology, National Institute of Arthritis and Musculoskeletal and Skin Diseases, N and New York University*
- SH23 Determining the Effects of E-Cigarette Vapor on Oral Epithelial Cells in a Cultured Cell Model.** M. Duggar, H. Swanson, M. Hill-Odom, *University of Kentucky and Xavier University of Louisiana*
- SH24 Expression of sirpα Tailless Mutant in Mice Impairs Naïve Cd4+ T Cell Adhesion to Immobilized Icam-I and Tcr Induced Proliferation.** F.E. Velázquez Planas, A.E. Autio, G. Newton, C. Parkos, F.W. Luscinskas, *Brigham and Women's Hospital and University of Michigan*
- SH25 Use of Systematic Stimulation Mapping and Functional/structural Imaging to Improve Localization of Seizure Onset in Patients with Drug-Resistant Epilepsy.** R.C. Blanco Prado, C. Drees, J.A. Thompson, *University of Colorado Anschutz Medical Campus*
- SH26 Ghrelin Directly Stimulates Fatty Acid Oxidation in Skeletal Muscle.** E. Kraft, D. Dyck, *University of Guelph, Canada*
- SH27 Quantitative Phosphoproteomic Analysis of Feedback Networks in T Cell Signaling.** A. Salomon, J. Belmont, Q. Ji, *Brown University*
- SH28 Influence of Liver-Specific Ablation of Gp78 E3-Ligase on Hepatic Cytochrome P450-Dependent Drug Metabolism: Clinical Implications.** D. Kwon, S-M. Kim, M.A. Correia, *University of California and San Francisco*
- SH29 Cxcr3 Regulates Cd4+ T Cell Cardiotropism and Maladaptive Cardiac Remodeling Through Mechanisms Involving IcamI-Mediated Adhesion.** N. Ngwenyama, A. Salvador, T. Nevers, F. Velázquez, M. Aronovitz, P. Alcaide, *Tufts University and Tufts Medical Center*

- SH30 **Slc26a3 (Dra) Deficient Mice Display an Acidic Colonic Ph-Microclimate, Develop a Strongly Altered Microbiome and Colonic Inflammation.** A. Kini, M. Basic, A.K. Singh, B. Riederer, D. Römermann, S. Suerbaum, A. Bleich, T. Strowig, U. Seidler, *Hannover Medical School, Germany and Helmholtz Center for Infection Research, Germany*
- SH31 **Interrogating Endogenous Neuromodulatory Gpcr Signal Processing by Real-Time Imaging of Camp Dynamics Through Intact Neuronal Circuits.** B.S. Muntean, S. Zucca, C.M. MacMullen, M.T. Dao, C. Johnston, H. Iwamoto, R.D. Blakely, R.L. Davis, K.A. Martemyanov, *Scripps Research Institute and Florida Atlantic University*
- SH32 **Structural Characterization of KRAS with a Novel Interactor, Argonaute 2.** J. Waninger, S. Shankar, R.F. Siebenaler, T.S. Beyett, J.J. Tesmer, A.M. Chinnaiyan, *University of Michigan*
- SH33 **Personalized Gene Expression Profile Information Predicts Severity of Systemic Sclerosis Despite Heterogeneity of Disease.** Z.I. Johnson, T. Medsger, T. Li, C. Feghali-Bostwick, Y. Conley, C.C. Yates, *University of Pittsburgh, AccuraScience and Medical University of South Carolina*
- SH34 **Sweet Success: Metabolic Substrate Adaptations to Acute Hypoxia in the Naked Mole Rat (Heterocephalus Glaber).** M.E. Pamerter, A.M. Kirby, A.J. Shuhendler, *University of Ottawa, Canada*
- SH35 **The Effects of Nitric Oxide Synthase Inhibitors on Mitochondrial Respiration in Isolated Mouse Brain Mitochondria.** J.A. Sperling, S.S. V. P. Sakamuri, V.N. Sure, M.H. Dholakia, N.R. Peterson, R. Satou, P.V.G. Katakam, *Tulane University School of Medicine*
- SH36 **Chemorepulsion as a Novel Therapeutic Concept to Inhibit Pancreatic Cancer Metastasis.** B. Niclou, X. Li, A. Zessler, R. Adam, D. Briscoe, D. Bielenberg, *Boston Children's Hospital*
- SH37 **The Antithrombotic Effects of I2-Lox Derived Metabolites of Dpa, o-6.** A. Chen, J. Yeung, A. Szatkowski, M. Jackson, J. Watson, C. Freedman, A. Das, T. Holman, M. Holinstat, *University of Michigan, University of Illinois at Urbana-Champaign, University of California and Santa Cruz*
- SH38 **Effect of Metabolic Syndrome and Aging on Coronary Artery Disease Severity and CA<sup>2+</sup> Dysregulation in Coronary Smooth Muscle in Ossabaw Miniature Swine.** J.K. Badin, R.S. Bruning, M. Sturek, *Indiana University School of Medicine*
- SH39 **Cd99l2 as a Major Regulator in Human Transendothelial Migration.** N.S. Rutledge, W.A. Muller, *Northwestern University*
- SH40 **A Redesigned Pharmacology Series Increases Students' Satisfaction and Is Associated with Improved Performance in Therapeutics.** K. Brandl, S. Schneid, S. Tsunoda, L. Awdishu, *Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California and San Diego*
- SH41 **Developmental Differences in the Contribution of Pkc $\beta$  Signaling to Chronic Hypoxia-Induced Pulmonary Arterial Tone.** S. Yan, J.R. Sheak, N.L. Jernigan, B.R. Walker, T.C. Resta, *University of New Mexico Health Sciences Center*
- SH42 **Microbiota-Derived Indole Metabolites Provide a Novel Pathway for Regulation of Intestinal Homeostasis.** E.E. Alexeev, D.J. Kao, K.B. Mills, T.R. Lemke, J.M. Lanis, J.S. Lee, A.S. Dowdell, S.P. Colgan, *University of Colorado Anschutz Medical Campus*

## Herbert Tabor Young Investigator Award Symposium

2:30 – 3:45 p.m. Sunday, April 22  
San Diego Convention Center, Room 31C



# SUNDAY APRIL 22

## 96 Wake-Up! It's Trivia Time

### SOCIETY EVENTS

**7:00 AM – 7:45 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

Sponsored by ASBMB Membership Committee



Calling all trivia junkies! Join your colleagues for a daily dose of trivia, music, fun and prizes! It's a lively way to jump-start your day—the complimentary coffee and nosh also helps. Prize values increase over the course of the meeting, so come back each morning! ASBMB members and biochemistry registrants welcome.

*Space is limited with first come, first served.*

## 97 ASBMB Business Meeting

### BUSINESS MEETING

**8:00 AM – 8:15 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

## 98 ASBMB Opening Lecture: Herbert Tabor Research Award

### LECTURE

**8:00 AM – 9:00 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

8:00 ASBMB Business Meeting and awardee introduction

8:20 **98.1** Nutrient Regulation of Signaling and Transcription. G.W. Hart, Johns Hopkins University School of Medicine

## 99 FASEB Excellence in Science Award

### LECTURE

**9:00 AM – 9:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

9:00 Awardee introduction

9:05 **99.1** Nonsense-Mediated mRNA Decay and Human Disease: Genome Guardian and Executor. L.E. Maquat, University of Rochester Medical Center



## 67 How to Choose Your Ideal Career

### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Do you want to find a career path that you'll enjoy and find rewarding? Of course! But HOW do you find such a path, especially since there are so many different directions scientists can go with their careers?

There are more than FIFTY career options available to biomedical sciences PhD's. If you'd like to see a list of these career options, while learning about how to select the best option for you, then don't miss this thought-provoking and interactive workshop! Here you will learn about a logical, step-by-step process for exploring your career options and deciding which will provide the best fit for your own set of skills, values and interests.

SPEAKER B. Lindstaedt, UCSF

## 68 **Get Up With Something on Your Mind**

### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

Planning for academic/career/personal success is a process—a mode of striving to excel at any and all endeavors one undertakes. It is an ongoing process of planning, reviewing, refining, adjusting and/or changing goals, strategies and tactics to realize planned outcomes—achievement, success, recognition, rewards, power, etc. This seminar is designed to encourage individual responsibility for: 1) taking charge of one's own success; 2) focusing on being proactive; 3) being open and responsive to change; 4) applying strategies to assess one's skills, interests, and values on an ongoing basis; and 5) building support systems through effective utilization of mentoring and networking. Key topics: The Success Mind-set, Defining Purpose, Performance Curve, The Personal Audit, Academic/Career/Planning for Academic/Career/Life Success.

SPEAKER H. Adams, H.G. Adams & Assoc., Norfolk, VA

## 64 **Poster/Oral Presentation Practice & Mentoring Session**

### WORKSHOP

**9:00 AM – 5:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, PEER MENTOR POD

FASEB Diversity Resources Program will sponsor Presentation Practice & Mentoring Sessions beginning Saturday, April 21, to provide FASEB DREAM poster/oral presentation travel award recipients and other interested EB2018 student/postdoc attendees with an opportunity to practice their presentations and obtain feedback from designated Workshop Mentors/Coaches. If you would like to participate in the poster/oral presentation & mentoring sessions, sign-up by using the following link, [www.experimentallbiology.org](http://www.experimentallbiology.org) beginning Sunday, April 1.

## 65 **Career Corner Sessions with Dr. Adams**

### WORKSHOP

**9:00 AM – 5:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER CORNER

Drop in for one-on-one or group sessions for career counseling/career planning sessions with Dr. Howard G. Adams in between his presentations in the EB2018 Career Center. Dr. Adams will be available in the "Career Corner" in the EB2018 Career Center located in Hall D beginning on Saturday, April 21.

## 66 **One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments**

### WORKSHOP

**9:00 AM – 5:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER COUNSELING ROOM

Sign-up for one-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. If you're interested in a one-on-one, advance sign up will start on Sunday, April 1. Click on [www.experimentallbiology.org](http://www.experimentallbiology.org) to schedule your session.

## 69 **Career Building: How to Maximize One's Participation in a Scientific Conference**

### WORKSHOP

**9:30 AM – 11:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

First impressions count: Are you ready? This interactive workshop will help you to put your best foot forward and make the most of your time at the Experimental Biology meeting. Scientific conferences provide more than an opportunity to learn about the latest research in your field, they can help you make connections that will build your career both now and into the future. In this workshop you will learn how to define your goals for a meeting, prepare for the conference, and plan your agenda so that you can maximize your experience both scientifically and professionally. Participants will also develop strategies for identifying and capitalizing on important networking opportunities and for maintaining and nurturing the relationships they establish during a conference. Don't miss this opportunity to learn how you can accelerate your future at the Experimental Biology meeting!

SPEAKER: H. Dillon, *The Jackson Laboratory*

## 100 **Walter A. Shaw Young Investigator Award in Lipid Research**

### LECTURE

**10:00 AM – 10:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6F



This award lecture is presented in the session, "Lipid signaling and metabolism," beginning at 10:00 a.m. Refer to session 103 for details.

**10:00** Awardee introduction

**10:05** Probing the Structure, Dynamics and Regulation of Lipid Signalling Enzymes and Their Role in Human Disease. J. Burke, *University of Victoria, Canada*

## 70 **Negotiation Strategies for Scientists**

### WORKSHOP

**10:00 AM – 11:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

This session introduces effective methods of negotiating with potential employers.

Topics: The basic elements of successful negotiation, contexts of gender and culture, avoiding common pitfalls, leveraging your strengths, handling multiple offers, and closing the deal.

SPEAKER: D. Behrens, *Univ. of California, Berkeley*

## 101 **Biochemical Communication between the Microbiome and the Host**

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAIR: L. V. Hooper

**10:00 101.1** Host Microbe Interactions in the Primate Gut: Implications for Human Origins. A. Gomez, M. Torralba, K.E. Nelson, R. Stumpf, R. Blekman, K. Petrzeltkova, *University of Minnesota, J. Craig Venter Institute, University of Illinois and Czech Academy of Sciences, Czech Republic*

**10:30 101.2** Metabolism, the Microbiome, and the Circadian Clock. L.V. Hooper, Y. Wang, Z. Kuang, *The University of Texas Southwestern Medical Center*

**11:00 101.3** The Diet-Microbiota-Mucus Layer Axis as a Mediator of Intestinal Health and Disease. E. Martens, *University of Michigan Medical School*

**11:30 101.4** The Gut Microbiome Connection to Parkinson's Disease. S.K. Mazmanian, *California Institute of Technology*

## 102 **Intrinsically Disordered Proteins and Their Regulation and Function**

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAIR: J. Dyson

**10:00 102.1** Alpha-Synuclein Binds to Neuron-Specific Glycans. E. Rhoades, M. Birol, *University of Pennsylvania*

**10:30 102.2** The Role of Disordered Regions in GPCR-G Protein Signaling. M.M. Babu, *Medical Research Council Laboratory of Molecular Biology, United Kingdom*

**11:00 102.3** Disordered Regions as Regulators of Phase Transitions in Multivalent Proteins. R.V. Pappu, *Washington University in St. Louis*

**11:30 102.4** How Do Intrinsically Disordered Viral Proteins Hijack the Cell? H.J. Dyson, *Scripps Research Institute*

## I03 Lipid Signaling and Metabolism

### SYMPOSIUM

**10:00 AM – 12:30 PM** SAN DIEGO CONVENTION CENTER, ROOM 6F

CHAIR: M. Wakelam

- 10:00 Walter A. Shaw Young Investigator Award in Lipid Research awardee introduction
- 10:05 **I03.1** Probing the Structure, Dynamics and Regulation of Lipid Signalling Enzymes and Their Role in Human Disease. J. Burke, *University of Victoria, Canada*
- 10:30 **I03.2** A Golgi Lipid Signaling Pathway That Controls Neural Stem Cell Polarity in the Developing Neocortex. V. Bankaitis, Z. Xie, *Texas A&M Health Science Center*
- 11:00 **I03.3** Fatty Acid Compartmentalization. R. Coleman, *University of North Carolina*
- 11:30 **I03.4** Endosomal Lipids in Trafficking and Signaling. J. Gruenberg, *University of Geneva, Switzerland*
- 12:00 **I03.5** Using Lipidomics Pathway Analysis to Identify Potential Therapeutic Targets. M. Wakelam, A. Nguyen, Q. Zhang, *Babraham Institute, United Kingdom*

## I04 Novel Enzymology

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAIR: R. T. Raines

- 10:00 **I04.1** Ribonuclease: From  $K_{cat}/K_m$  to the Clinic. R. Raines, *Massachusetts Institute of Technology*
- 10:30 **I04.2** How Do Enzymes Evolve? D.S. Tawfik, *Weizmann Institute of Science, Israel*
- 11:00 **I04.3** Citrullination Inhibits Serpin Activity. P.R. Thompson, *University of Massachusetts Medical School*
- 11:30 **I04.4** Connecting Chemistry to Biology to Understand Why O-GlcnaC Transferase Is Essential. S. Walker, *Harvard Medical School*

## I05 RNA Form and Function

### ISSUES IN DEPTH

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 1AB

Sponsored by ASBMB Minority Affairs Committee

- 10:00 **I05.1** Trna Methylation Controls Bacterial Multi-Drug Resistance. I. Masuda, R. Matsubara, T. Christian, E.R. Rojas, S.S. Yadavalli, M. Goulian, K.C. Huang, Y-M. Hou, *Thomas Jefferson University, Stanford University and University of Pennsylvania*
- 10:30 **I05.2** How to Balance the Many Roles of Trnas During the Creation of New Genetic Codes. A. Ellington, A. Maranhao, K. Baldrige, D. Tack, R. Thyer, L. Contreras, *The University of Texas at Austin*
- 11:00 **I05.3** Bridging the Gap Between RNA Editing and Modification: A 10-Year Solution to a 25-Year Problem. J.D. Alfonzo, *The Ohio State University*
- 11:30 **I05.4** Functional Characterization and Design of Regulator RNAs Using Novel High-Throughput Tools. L.M. Contreras, K. Haning, A.N. Leistra, *The University of Texas at Austin*

## 106 Strategically Building Your CV at Every Career Stage

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAIR: M. Payne

Sponsored by ASBMB Education and Professional Development Committee

With the diverse career options available for scientists as well as the rapid increase in the use of online profiles, it is important to not only gain appropriate skills and experience in support of career development, but also to present a professional profile to the public and/or prospective employers that helps promote specific career objectives. In this session, speakers from both academia and industry will present strategies that students, trainees, faculty, and industrial scientists can use to ensure that their experiences are leading to the career path that they desire and that they are marketing themselves in the best possible manner to achieve their career goals.

Presentations will be followed by a discussion panel.

SPEAKER/PANELISTS:

N. Blake, *UT Health San Antonio*, M. Canady, *Comprendia, LLC and San Diego Biotechnology Network*, R. To, *Bayer Health Care*

PANELISTS:

R. Booth, *Univ. of the Incarnate Word*, M. Payne, *La Sierra Univ.*

**10:00** Chair's introduction.

**10:05** Career Visualization and Execution. N. Blake, *UT Health San Antonio*

**10:25** Finding your inner extrovert for career growth. M. Canady, *Comprendia, LLC and San Diego Biotechnology Network*

**10:45** An unplanned career path: from research to regulation. R. To, *Bayer HealthCare*

**11:05** Panel discussion.

## 107 Synthetic Biology

### SEBM SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAIR: P. Stambrook

Guest Society: Society for Experimental Biology and Medicine

**10:00** Playing with the molecules of life. P. Schultz, *Scripps*

**10:25** A cargo-sorting DNA robot. L. Qian, *Cal Tech*

**10:50** Teaching ancient molecules new tricks: unlocking the potential of RNA synthetic biology. J. Luks, *Northwestern Univ.*

**11:15** Engineering membrane-bound microsystems as artificial cells. Y. Elani, *Imperial Col., London*

**11:40** General discussion.

## 71 Understanding Faculty Search Committees & Finding Job Ads

### WORKSHOP

**11:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-I

Are Postdocs Always Essential? What do search committees look for? How do I find academic jobs offered in my field, or within a specific geographical area? Answers to these and other questions presented by Andrew Green, a veteran of the academic job search and numerous search committees.

SPEAKER: A. Green, *Univ. of California, Berkeley*

## 72 Making Mistakes When Speaking

### WORKSHOP

11:00 AM – 12:00 PM SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Much attention, time and money are spent on polishing our interview behaviors. But when it comes to the real thing, we frequently find ourselves saying afterwards, "I can't believe I said that or did this."

Dr. Blumenthal will teach you how to identify "triggers", antecedents to behaviors that cause us to say things or behave in ways we wish we didn't. She will teach you how to identify triggers before they happen and increase your chance of demonstrating the right behaviors for winning the job.

SPEAKER: J. Blumenthal, *Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD*

## 73 Career Opportunities in Science Communications

### WORKSHOP

11:00 AM – 12:00 PM SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

SPEAKER: E. Hayden, *Univ. of California, Santa Cruz*

## 108 CREST (Connecting Researchers, Educators and Students) Conversations

### SOCIETY EVENTS

12:15 PM – 1:15 PM SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D, ACROSS FROM ASBMB BOOTH 1316

CHAIR: T. Herman



CREST research teams will meet with Herbert Tabor Research Award lecturer, Gerald Hart and colleagues, to present protein models that will be used to aid in-depth discussions. This event is located in the ASBMB Lounge, across from the ASBMB exhibit booth, #1316.

## ASBMB Poster Presentations

### POSTER SESSIONS

12:15 PM – 2:15 PM SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

Refer to pages 70–87 for presentation details.



## Visit ASBMB Booth #1316

Ask how you can receive a **complimentary membership** and a **free gift!**

## 109 ASBMB Meet the Speakers

### SOCIETY EVENTS

**12:30 PM – 1:00 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH 1316

Visit the ASBMB Lounge (Exhibit Hall across from ASBMB Booth #1316) to meet the morning presenters and continue the scientific discussion — a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

## 110 ASBMB Advocacy Town Hall Meeting

### SOCIETY EVENTS

**12:30 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6A

Sponsored by ASBMB Public Affairs Advisory Committee

Join ASBMB's Public Affairs Advisory Committee (PAAC) for a town hall forum open to all EB registrants to address the impact of the current and future political climate on the life science research enterprise.

Event objectives include briefing the community on local impacts of federal policy decisions and provide real time answers to pressing questions.

Planned mini briefings include:

- 1) The state of federal investments in life science research
- 2) Local and national advocacy
- 3) Policy changes impacting the research community

Briefings will be led by the ASBMB Public Affairs Director, Benjamin Corb, with assistance from an expert panel moderated by PAAC chair, Matthew Gentry.

Pre-submit or post questions live via twitter (#ASBMBTownHall) to generate further discussion. It is anticipated that the town hall forum will be attended by a wide range of stakeholders from all facets of the biochemistry and molecular biology research enterprise.

*Doors will open at 12:20 p.m. and boxed lunches will be provided to the first 75 event participants, first come, first served.*

## 74 Job Hunting in Biotech Part 1: Finding & Applying for Scientist Positions

### WORKSHOP

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

In this seminar, you will learn how to prepare resumes and cover letters so you will be ready to search for research jobs in the biotech/pharma industry. Then, you will learn how to find and connect with scientists working at companies. Finally, you will learn how to execute job search strategies necessary for success on the biotech/pharma job market. After this seminar you will understand how to conduct the four job hunting techniques that comprise a comprehensive job search in the biotech industry.

(THIS IS PART 1 OF A 3-PART SERIES. EACH SEMINAR CAN BE TAKEN SEPARATELY BUT TOGETHER THEY PROVIDE COMPREHENSIVE INFORMATION ABOUT THE INDUSTRY JOB SEARCH PROCESS.)

SPEAKER: B. Lindstaedt, UCSF

## 75 Networking With Strangers is Required for Your Future

### WORKSHOP

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Networking is a crucial dimension of a job offer; from developing a resume to interviewing to the job offer. Where do I begin? What do I take for granted? How do I communicate the right behaviors for the job? And to whom? How much of the employer's business do I really have to know? To be at the right place at the right time, sometimes it takes just one person. But who is this person?

In this seminar, you will learn how to move in the right direction and identify and approach the right people to help you obtain a job offer. You will learn essential behaviors that promote your case and that can be used quite favorably.

SPEAKER: J. Blumenthal, Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD

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**76 Creating Effective CV's, Cover Letters, Research & Teaching Statements**

**WORKSHOP**

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

Most of the cuts in the applicant pool are made solely on the basis of your written application materials. Do yours represent you in the strongest possible fashion? How should a cover letter and CV for Stanford differ from one addressed to faculty at San Jose State? And what exactly is a Statement of Teaching Philosophy. Advice will be provided on creating these documents and more for the academic job search.

SPEAKER: A. Green, *Univ. of California, Berkeley*

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**III SEBM Special Topics in Science, Student-Organized Symposium**

**SEBM SYMPOSIUM**

**1:00 PM – 2:30 PM** SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAIR: D. Boothman

Guest Society: Society for Experimental Biology and Medicine

FEATURING PRESENTATIONS BY: I. Verma, *Salk Inst.*, K. Lamia, *Scripps*, P. Mischel, *UCSD*

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**II2 ASBMB Meet the Speakers**

**SOCIETY EVENTS**

**1:30 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH I316

Visit the ASBMB Lounge (Exhibit Hall across from ASBMB Booth #I316) to meet the morning presenters and continue the scientific discussion — a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

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**77 But I Have No Skills! Exploding Myths & Exploring Career Options for PhDs**

**WORKSHOP**

**2:00 PM – 3:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

Are the skills you developed in graduate training really useful outside of the academic lab? Many PhD candidates and postdocs exploring careers beyond the academy assume—incorrectly—that employers will not find them or their skills attractive. In this session you will have the opportunity to identify skills that you currently possess, and also to find career fields that might be a good fit for these skills.

SPEAKER: J. Lombardo, *Med. Col. of Wisconsin and Marquette Univ.*

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**78 Career Opportunities in Science Communications**

**WORKSHOP**

**2:00 PM – 3:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

SPEAKER: E. Hayden, *Univ. of California, Santa Cruz*

## 79 Networking: A Required Life Skill

### WORKSHOP

**2:00 PM – 3:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

To succeed in today's competitive world of work, who you know can be as critical as what you know. Successfully networking, to develop contacts, is a required skill. Networking involves 1) making contacts, 2) establishing cordial relationships, and 3) ultimately bonding to mutually support each other and share information. This seminar explores skills and techniques germane to successful networking. During the session, Dr. Howard Adams will cover the following key topics: 1) Dimensions of Networking; 2) Networking to enhance one's career/professional development; 3) Networking concerns: How? When? Where? Why? 4) Tips for Successful Networking; 5) Do's and Don'ts of Networking.

SPEAKER: H. Adams, H.G. Adams & Assoc., Norfolk, VA

## 113 ASBMB Award for Exemplary Contributions to Education

### LECTURE

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 6C

Sponsored by ASBMB Education and Professional Development Committee

Undergraduate Student Research Poster Competition award winners and Honor Society inductees will be announced / presented during this lecture.

**2:30** Awardee introduction

**2:35** **113.1** Promoting Hypothesis-Driven Thinking in the Undergraduate Biochemistry Lab. P.A. Craig, Rochester Institute of Technology

## 114 Advanced Biophysical and Biochemical Approaches to Membrane Dynamics (I)

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAIR: C. Schlieker

**2:30** ESCRT Membrane Scission Revealed by Optical Tweezers. J. Schöneberg, S. Yan, A.H. Bahrami, M. Righini, I-H. Lee, M-R. Pavlin, L-A. Carlson, D. Goldman, G. Hummer, C. Bustamante, J. Hurley, *University of California, Berkeley and Max Planck Institute of Biophysics, Germany*

**2:45** Nano-Scale Size Holes in Er Sheets Provide an Alternative to Tubules for Highly-Curved Membranes. S. Bahmanyar, L. Schroeder, A. Barentine, S. Schweighofer, D. Baddeley, J. Bewersdorf, *Yale University and Yale School of Medicine*

**3:00** Biomechanical Control of Lysosomal Secretion via the Vamp7 Hub: A Tug-of-War Mechanism Between Varp and Lrrkl. T. Galli, G. Wang, S. Nola, S. Bovio, M. Coppey-Moisand, F. Lafont, *Institut National de la Santé et de la Recherche Médicale (INSERM) U894, Institute of , France, Institut Pasteur de Lille, National Center for Scientific Research UMR 8204 - INSERM U1019, Centre H, France, Metropolitan, National Center for Scientific Research UMR7592 and Institut Jacques Monod, France*

**3:15** The Role of the Escrt Pathway in Prion Disease. J. Lawrence, *University of California and San Diego*

**3:30** **114.1** Dynamic Functional Assembly of the Torsin Aaa+ Atpase and Its Modulation by Lap1: A Novel Mode of Regulation for Aaa+ Atpases. A.R. Chase, *Yale University and RIKEN Center for Life Science Technologies, Japan*

## II5 Advances in Mitochondrial Biochemistry

### SPOTLIGHT SESSION

2:30 PM – 3:45 PM SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAIR: E. L. Seifert

- 2:30 II5.1 **Loss of Mitochondrial Phosphate Carrier in Skeletal Muscle: Dissociation of Muscle Dysfunction from Lower Adp Phosphorylating Potential.** E.L. Seifert, L. Anderson-Pullinger, Y. Sharpadskaya, *Jefferson College of Biomedical Sciences*
- 2:45 **Cytoplasmic Pfk-2 Activity Affects Mitochondrial Pdk4 Levels in the Heart.** M.F. Newhardt, M. Kinter, K.M. Humphries, *Oklahoma Medical Research Foundation*
- 3:00 **Oxidative Phosphorylation Complex Interactions in Intact Mitochondria.** B.M. Rabbitts, F. Liu, P. Lossi, R.S. Balaban, A.J. R. Heck, *National Heart, Lung, and Blood Institute, National Institutes of Health, FMP Berlin, Germany and University of Utrecht, Netherlands*
- 3:15 **The L Type Calcium Channel  $Ca_v1.2$  Modulates Mitochondrial Calcium Homeostasis and Cell Death.** M. Noterman, M-K. Shin, E. Vazquez-Rosa, C. Cintrón-Pérez, A. Rajadhyaksha, E. Taylor, A. Pieper, *University of Iowa, Weill Cornell Medicine and Cornell University*
- 3:30 **Sirtuin 4 Controls Leucine Metabolism and Insulin Secretion by Reversing Effects of Reactive Metabolites.** F.K. Huynh, K.A. Anderson, J.D. Stuart, Z. Lin, M.D. Hirschey, *Duke University Medical Center*

## II6 Cancer Signaling

### SPOTLIGHT SESSION

2:30 PM – 3:45 PM SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAIR: J. Frost

- 2:30 **The Aggressive Nature of Prostate Cancer of African Americans Is Correlated with Massive Down-Regulation of Many Immunoregulatory Genes of Microenvironment.** F. Rahmatpanah, X. Zi, A. Sawyers, A. Agrawal, M. Lilly, M. McClelland, D. Mercola, *University of California, Irvine and Medical University of South Carolina*
- 2:45 **Limd2 Is an Intracellular Activator of Integrin Linked Kinase(Ilk) Activity and Gsk-3/akt/ $\beta$ -Catenin Signaling.** S. Dedhar, S. Awrey, *University of British Columbia, Canada and BC Cancer Research Centre, Canada*
- 3:00 **A Genome-Wide Crispr-Cas9 Screen Identifies Importin- $\beta$ 11 as a Required Factor for  $\beta$ -Catenin Signaling in Colon Cancer.** M. Mis, Z. Steinhart, S. Angers, *University of Toronto, Canada*
- 3:15 **Effects of Resveratrol in Cell Migration and Invasion by Studying the Cxcr4-Cxcl12 Axis in Breast Cancer Cell Lines.** G.A. Arroyo-Martinez, M. Figueroa, K. Muñoz-Forti, G. Trossi, J. Robles, A.A. Maldonado, E. Suarez, A. Ruiz, *University of Puerto Rico at Ponce, Pontifical Catholic University of Puerto Rico and University of Puerto Rico at Mayagüez*
- 3:30 **Regulatory Mechanisms Controlling the Subcellular Localization and Activity of the RhoA Gef Net1 in Breast Cancer.** J.A. Frost, Y. Zuo, A. Ulu, *The University of Texas Health Science Center at Houston*

## Follow ASBMB's bloggers!



**Adriana Bankston**  
@AdrianaBankston



**Randi J. Ulbricht**  
@R\_Ulbricht



**Amber Lucas**  
@AmberLeeIP

## 117 Glycopolymer Probes

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAIR: J. Kramer

- 2:30 Roles of Glycosaminoglycans in the Ang/Tie Signaling Axis. M.E. Griffin, G.M. Miller, A.W. Sorum, L.C. Hsieh-Wilson, *California Institute of Technology*
- 2:45 Harnessing Glycocalyx Interactions to Modulate Differentiation and Development. M.L. Huang, A.L. Michalak, E.M. Tota, R.A. Smith, G.W. Triege, K. Godula, *University of California and San Diego*
- 3:00 Probing the Role of Peptidoglycan Metabolism in *Helicobacter Pylori*'s Helical Shape. J.A. Taylor, B.P. Bratton, K.E. DeMeester, H. Liang, H.M. Jacobs, E. Kuru, Y.V. Brun, M.S. VanNieuwenhze, W. Vollmer, J.W. Shaevitz, C.L. Grimes, N.R. Salama, *University of Washington, Princeton University, University of Delaware, Indiana University, Newcastle University, United Kingdom and Fred Hutchinson Cancer Research Center*
- 3:15 Mucus-Inspired Low-Fouling Barriers Based on Self-Assembled Glycopeptide Nanofibers. G. Hudalla, A. Restuccia, *University of Florida*
- 3:30 117.1 Glycocalyx Engineering with Tunable Synthetic Glycopolypeptides. J. Kramer, *University of Utah*

## 118 Herbert Tabor Young Investigator Award Symposium

### SYMPOSIUM

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 31C

JBC

CHAIR: G. DeMartino

- 2:30 118.1 Structural and Functional Studies of the Streptococcal Fibrillar Adhesin Csha. C. Back, V. Higman-Davies, M. Sztukowska, M. Till, M. Crump, R. Lamont, H. Jenkinson, A. Nobbs, P. Race, *University of Bristol, United Kingdom and University of Louisville School of Dentistry*
- 2:45 118.2 Sensing Changes in Cellular Iron Metabolism: Regulation of Irf1 by Fbx15 and Cytosolic Iron-Sulfur Cluster Assembly. N.B. Johnson, *University of Wisconsin-Madison*
- 3:00 118.3 Selective Imaging of Internalized Proteopathic  $\alpha$ -Synuclein Seeds in Primary Neurons Reveals Mechanistic Insight into Transmission of Synucleinopathies. R.J. Karpowicz, C.M. Haney, T.S. Mihaila, R.M. Sandler, E.J. Petersson, V.M.-Y. Lee, *University of Pennsylvania*
- 3:15 118.4 Asymmetric Configurations in a Reengineered Homodimer Reveal Multiple Subunit Communication Pathways in Protein Allostery. M. F. Lanfranco, F. Garate, A. Engdahl, R. Maillard, *Georgetown University*
- 3:30 118.5 Complex Interplay of Kinetic Factors Governs the Synergistic Properties of HIV-1 Entry Inhibitors. K. Ahn, M. Root, *Northwestern University and Thomas Jefferson University*

## 119 Motion is Lotion: New Roles of Motion in Enzyme Function

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAIR: J. Hardy

- 2:30 The Structure and Mechanism of a Viral Genome Packaging Motor. J.A. Hayes, B.J. Hilbert, N.P. Stone, C.M. Duffy, B. Sankaran, B.A. Kelch, *University of Massachusetts Medical School and Lawrence Berkeley National Laboratory*
- 2:45 Small Compounds Modulating Bi-Directional Allostery in Protein Kinases: A New Grip with an Old Trick. R.M. Biondi, J.O. Schulze, E. Süß, L. Pietsch, K. Busschots, G. Saladino, F.L. Gervasio, M. Raab, M. Sanhaji, K. Strebhardt, *IBioBA-CONICET – Partner Institute of the Max Planck Society, Argentina, Frankfurt University Hospital, Germany and University College London, United Kingdom*
- 3:00 Investigating Carrier Domain Positioning During Catalytic Turnover in Pyruvate Carboxylase. J. Hakala, M. St. Maurice, *Marquette University*
- 3:15 119.1 Caspase-6 Self-Activation Enables Distinct Helix-Strand Interconversion Upon Substrate Binding. J.A. Hardy, D.M. J., K.B. Dagbay, *University of Massachusetts Amherst*
- 3:30 Evolution of Caspase Allostery and Enzyme Specificity. C. Clark, R. Grinshpon, M.E. Thomas III, L. Yao, S. Shrestha, *The University of Texas at Arlington and North Carolina State University*

## 120 Plant Bioactive Natural Products: Discovery, Engineering and Applications

### SPOTLIGHT SESSION

2:30 PM – 3:45 PM SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAIR: L. Hicks

- 2:30 120.1 Natural Product Bioactive Peptide Discovery Using Pepsavi-Ms. L. Hicks, *University of North Carolina at Chapel Hill*
- 2:45 Mitochondria-Targeting Peptide from *Hibiscus Sabdariffa*. S. Loo, A. Kam, J.P. Tam, *Nanyang Technological University, Singapore*
- 3:00 Investigating Gibberellin Phytohormone Biosynthesis by Plant-Associated Bacteria. R.J. Peters, *Iowa State University*
- 3:15 Type III Polyketide Synthase Involved in Tropane and Granatane Alkaloid Biosynthesis. N. Kim, J.C. D'Auria, *Texas Tech University*
- 3:30 Montmorency Tart Cherry Anthocyanins: Dose-Dependent Antioxidant Activity Against Cholesterol Oxidation. I.G. Medina Meza, M.D. Schweiss, C. Barnaba, *Michigan State University and University of Michigan*

## 121 RNA Recognition and Regulation

### SPOTLIGHT SESSION

2:30 PM – 3:45 PM SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAIR: A. E. Hargrove

- 2:30 Cisplatin Induces Differential Expression of Snornas and Affects Ribosome Methylation. E. Reister, V.J. DeRose, *University of Oregon*
- 2:45 Enzymatic Site-Specific Labeling of RNA for Affinity Isolation of RNA-Protein Complexes. K.N. Busby, N.K. Devaraj, *University of California and San Diego*
- 3:00 Multiple Mechanisms Driving Alternative Polyadenylation of Cyclin D1 (*ccnd1*) Pre-mRNA Processing. C.P. Masamha, E. Wagner, *Butler University and The University of Texas Medical Branch*
- 3:15 Structure and Mechanism of a Bacterial T6a Biosynthesis System. A. Luthra, W. Swinehart, S. Bayooz, P. Phan, B. Stec, D. Iwata-Reuyl, M. Swairjo, *San Diego State University and Portland State University*
- 3:30 121.1 Small Molecule Differentiation of RNA Structures Using Pattern Recognition. A.E. Hargrove, *Duke University*

## 80 Job Hunting in Biotech Part 2: Interviewing for Scientist Positions

### WORKSHOP

3:00 PM – 4:00 PM SAN DIEGO CONVENTION CENTER, HALL D, CRC-I

This seminar is designed to help you improve your interview skills so that you will be better prepared to land a scientist position in industry. At the end of the seminar, you will be able to:

- Respond effectively to the most common questions asked during industry interviews,
- Answer behavior-based questions in an organized manner,
- Begin and end the interview experience with poise and professionalism.

(THIS IS PART 2 OF A 3-PART SERIES. EACH SEMINAR CAN BE TAKEN SEPARATELY BUT TOGETHER THEY PROVIDE COMPREHENSIVE INFORMATION ABOUT THE INDUSTRY JOB SEARCH PROCESS.)

SPEAKER: B. Lindstaedt, *UCSF*

## I22 Can We Target Aging?

### SEBM SYMPOSIUM

**3:00 PM – 4:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAIR: N. Barzilai

Guest Society: Society for Experimental Biology and Medicine

- 3:00** Does targeting senescent cells target aging? Judith Campisi, *Albert Einstein Col. of Med.*
- 3:25** Young blood for old brains. Tony Wyss-Coray, *Stanford Univ. Sch. of Med.*
- 3:50** Title tba. Ana Marie Cuervo, *Albert Einstein Col. of Med.*
- 4:15** General discussion.

## 81 Making the Grade: Job Talk/Chalk Talk

### WORKSHOP

**3:30 PM – 4:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

Participants will learn to plan, structure and deliver an effective job talk. This seminar will key elements of the job talk and finally, how to capture the interest of a diverse (faculty, administrators, students) audience.

SPEAKER: D. Behrens, *Univ. of California, Berkeley*

## 82 Nailing the Job Talk & Interview Prep

### WORKSHOP

**4:00 PM – 5:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Going Live: Conference Interviews, On-Campus Interviews, The All-Important Job Talk, and Negotiating the Offer.

SPEAKER: A. Green, *Univ. of California, Berkeley*

## I23 Advanced Biophysical and Biochemical Approaches to Membrane Dynamics (II)

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAIR: J. Xiao

- 4:00** MTor-Dependent Selective Translation Rapidly Expands Lysosome Biogenesis, Volume and Retention Capacity During Phagocyte Activatio. R. Botelho, V. Hipolito, K. Tandoc, I. Topisirovic, *Ryerson University, Canada and McGill University, Canada*
- 4:15** Effects of the Cell Cycle on Vacuole Size in *s. Cerevisiae* Yeast. J.C. Sims, *San Francisco State University*
- 4:30** Deciphering Trapp Complex Function in Yeast. A. Joiner, C. Fromme, *Cornell University*
- 4:45** Myosin IIA Is the Most Important Effector of Zyxin in Camp-Mediated Endothelial Exocytosis. G. Wei, P. Li, L. Chen, J. Luo, *Peking University, People's Republic of China*
- 5:00** **I23.1** Spatial Organization of RNA Polymerase in *e. Coli* Cells. J. Xiao, *John Hopkins University School of Medicine*

## I24 Chemical Biology

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAIR: B. Dickinson

- 4:00      **Anaerobic 4-Hydroxyproline Metabolism by a Widespread Microbial Glycyl Radical Enzyme.**  
Y.Y. Huang, L. Backman, B. Gold, R.T. Raines, C.L. Drennan, E.P. Balskus, *Harvard University and Massachusetts Institute of Technology*
- 4:15      **Ligand Gated Split Lysine Acetyl Transferases (KATs) and Kinases.** C.S. de Silva, J. Castillo-Montoya, E. Restituyo, I. Ghosh, *University of Arizona*
- 4:30      **Expanding the Druggable Proteome: Ligand and Target Discovery by Fragment-Based Screening in Cells.** C.G. Parker, *Scripps Research Institute*
- 4:45      **I24.1 Optical Imaging Tools for Elucidating the Roles of Anions in Cellular Signaling.** S. Dodani, *The University of Texas at Dallas*
- 5:00      **I24.2 Chemical Approaches to Probe Signaling by Dynamic Proteome Lipidation.** B. Dickinson, *University of Chicago*

## I25 Emerging Perspectives on Metabolism and Cell Fate Decisions

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAIR: E. Taylor

- 4:00      **I25.1 Loss of Mitochondrial Pyruvate Carrier Activity Short Circuits Hepatocellular Tumorigenesis.**  
E. Taylor, *University of Iowa*
- 4:15      **Fine-Tuning of Hepatocyte Calcium Signaling and Liver Regeneration by the Mitochondrial Calcium Uniporter.** A. Noronha Antony, M. Katona, E. Juskeviciute, J.W. Elrod, G. Hajnóczky, J.B. Hoek, *Thomas Jefferson University, Lewis Katz School of Medicine and Temple University*
- 4:30      **Unconventional Pathways of Nitrogen Metabolism in Lung Cancer.** J. Kim, *The University of Texas Southwestern Medical Center*
- 4:45      **Understanding the Impact of Idh2 Mutations on the Redox Balance of Cancer Cells.** S.J. Gelman, L. McKenzie, M.G. Chheda, G.J. Patti, *Washington University in St. Louis*
- 5:00      **Targeting Glycolytic Metabolism in Cancer.** S. Telang, J. Trent, J. Chesney, A. Mojesky, *University of Louisville*

## I26 Molecular Chaperones and Protease Systems

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAIR: A. L. Lucius

- 4:00      **Proteasomal ATPases Hard at Work: The Inner Workings of a Protein Destruction Machine.**  
A.M. Snoberger, D.M. Smith, *West Virginia University*
- 4:15      **Dual Function of the Trigger Factor Chaperone in Nascent Protein Folding.** C. Kaiser, K. Liu, K. Maciuba, *Johns Hopkins University*
- 4:30      **Molecular Chaperones Disperse PabI Hydrogel More Quickly Than Misfolded Aggregates.** H. Yoo, E. Pilipenko, D.A. Drummond, *University of Chicago*
- 4:45      **Dysregulation of Human Mitochondrial Clpp Protease Activity by Acyldepsipeptides Analogs Leads to Apoptotic Cell Death.** W.A. Houry, *University of Toronto, Canada*
- 5:00      **I26.1 Molecular Mechanisms of Enzyme Catalyzed Protein Unfolding and Translocation by Class I Aaa+ Motors.** A.L. Lucius, *University of Alabama at Birmingham*

## I27 Physiological Regulation by Cell Signaling

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAIR: R. Berdeaux

- 4:00 **I27.1** **Promotion of Muscle Satellite Cell Proliferation by Camp-Induced Transcription.** R. Berdeaux, D. Akhmedov, *McGovern Medical School at The University of Texas Health Science Center*
- 4:15 **I27.2** **Interrogating Endogenous Neuromodulatory GPCR Signal Processing by Real-Time Imaging of Camp Dynamics Through Intact Neuronal Circuits.** B.S. Muntean, S. Zucca, C.M. MacMullen, M.T. Dao, C. Johnston, H. Iwamoto, R.D. Blakely, R.L. Davis, K.A. Martemyanov, *Scripps Research Institute and Florida Atlantic University*
- 4:30 **The Function of Wnk1/Osr1 in Cell Migration and Angiogenesis.** A. Jaykumar, S. Earnest, K. McGlynn, S. Gallolu Kankanamalage, S. Stippec, G. Pearson, M. Cobb, *The University of Texas Southwestern Medical Center and Georgetown University*
- 4:45 **Foxa2 Promotes Prostate Cancer Bone Colonization.** Z.M. Connelly, S. Yang, A.W. Orr, X. Yu, *Louisiana State University Health Sciences Center–Shreveport*
- 5:00 **Passing on Signals to Compass: A Novel Intramolecular Interactions in Pas Kinase Controls the Stem Cell Fate via Regulating Compass Protein Complexes.** C.K. Kikani, X. Wu, J. Rutter, *University of Utah and Fred Hutchinson Cancer Institute*

## I28 Reading, Writing and Erasing Epigenetic Marks

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAIR: C. Chatterjee

- 4:00 **Histone Chaperone Nap1 Facilitates Histone Dynamics in the Nucleosome.** T-H. Lee, J. Lee, *Pennsylvania State University*
- 4:15 **Stoichiometry of Multi-Protein Complexes Containing Rtt109, Vps75, and Histone H3-H4.** S. D'Arcy, N. Akhavantabib, D. Krzizike, *The University of Texas at Dallas and Fox Chase Cancer Center*
- 4:30 **Revealing Chromatin State Organization on the Single-Molecule Scale.** B. Fierz, *École Polytechnique Fédérale de Lausanne, Switzerland*
- 4:45 **Biochemical Characterization of the Set1 H3K4 Methyltransferase Complexes.** J. Kim, *Korea Advanced Institute of Science and Technology, Republic of Korea*
- 5:00 **I28.1** **Chemical Tools to Investigate Gene Regulation by Histone Sumoylation.** C. Chatterjee, *University of Washington*

## 129 **Structure and Mechanisms Regulating RNA Function**

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAIR: R. Spitale

- 4:00** Probing RNA Structure and Dynamics in the HIV-I 5'utr Using Ensemble and Single Molecule Approaches. K. Musier-Forsyth, B. Brigham, J. Kitzrow, J.-P.C. Reyes, J. Munro, *The Ohio State University and Tufts University School of Medicine*
- 4:15** Role of RNA Binding Protein Rbm15 in M<sup>6</sup>a RNA Methylation During Megakaryocytic Differentiation. N. Ayala-Lopez, R. Ross, S. Halene, P. Limbach, D.S. Krause, *Yale University and University of Cincinnati*
- 4:30** Different Classes of RNA Require Distinct Mex67 Paralogs for Processing and Nucleocytoplasmic Export in Trypanosomes. S. Obado, B. Chait, M. Field, M. Rout, *The Rockefeller University and University of Dundee, United Kingdom*
- 4:45** M<sup>6</sup>a Facilitates Hippocampus-Dependent Learning and Memory Through Ythdf1. H. Shi, X. Zhang, Z. Lu, Y. Liu, Y.-L. Weng, Z. Lu, J. Li, P. Hao, Y. Zhang, J. Delgado, M. Patel, X. Cao, X. Huang, Y. Su, G.-L. Ming, X. Zhuang, H. Song, C. He, T. Zhou, *The University of Chicago, ShanghaiTech University, People's Republic of China, University of Pennsylvania and East China Normal University, People's Republic of China*
- 5:00** **129.I** Chemo-Transcriptomic Methods to Measure RNA Structure Inside Living Cells. R. Spitale, *University of California and Irvine*

## 130 **BMB Professional Development: Advancing Successful Careers**

### SPOTLIGHT SESSION

**4:15 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAIR: R. Booth

Sponsored by ASBMB Education and Professional Development Committee

- 4:15** Leadership Skill Development in an Undergraduate Biochemistry Lab. D.E. Rhoads, *Monmouth University*
- 4:30** Effects of a Data Analysis Intensive Course on Student Critical Thinking Skills, Confidence, and Post-Graduation Success. K.K. Resendes, *Westminster College*
- 4:45** Graduate Student Professional Development and a Cure-Style Course and Peer-Reviewed Student Publications. J. Baumgartner, J. Lee, M.L. Kuhn, *San Francisco State University*
- 5:00** **130.I** Predictors of Success on the Mcat for Post-Baccalaureate Pre-Medicine Students. Y. Dobryднева, L. Schwartz, *George Washington University School of Medicine and Health Sciences*

## 131 **Organizing a Successful ASBMB Student Chapter**

### WORKSHOP

**5:30 PM – 6:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 31C

Sponsored by ASBMB Student Chapters Committee

Learn about the ASBMB Student Chapters program and how to maintain an active chapter. Network with existing faculty advisers and student members as they share their chapter activities.

## I32 **The Art of the 3D Cell Culture, from Organoids to Organs-on-a-Chip**

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAIRS: T. Kwok, S. Lelièvre

When 3D cell culture is properly done the cells behave in a manner that allows their organization and function as in vivo. In this workshop participants will become familiar with the concepts used to place cells in an environment appropriate for their needs and for the study of interest, from simple contexts with one cell type, to complex tissue organization, with multiple cellular compartments. They will participate in interactive observations/analyses of cells in 3D culture and build platforms for organs-on-a-chip from kits. Upon completing the workshop, participants will understand why there can be many cell culture models depending on the scientific queries and technical capabilities, with materials ranging from sophisticated polymers to paper; and they will be better prepared to choose a model convenient for their needs.

## I33 **Cryo-EM and Cryo-ET: Step-by-Step**

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAIRS: A. Leschziner, E. Villa

The “resolution revolution” has propelled Cryo-electron microscopy (Cryo-EM) and single-particle approaches as the structural technique of choice for tackling many biological problems. Similarly, technical advances are enabling cryo-electron tomography (Cryo-ET) to provide previously unachievable, high-resolution views of the cell interior. The two techniques are ushering a new era in structural biology, both at the molecular and cellular level. In this workshop, the advances that have made the revolution possible will be briefly introduced, and the workflow in each technique will be explained, step-by-step, using real data.

## I34 **Storytelling and the Art of Giving a Good Presentation**

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6B

Sponsored by ASBMB Public Outreach Committee

Storytelling is an essential component of communication, used by everyone from journalists to comedians to musicians to bring esoteric subjects to broad audiences. Mastering this skill requires not only topical knowledge but also creative flexibility and dexterity with language. This interactive session presented by the ASBMB Public Outreach Committee will lead participants through hands-on storytelling training, based on one of the modules from ASBMB's training course, “The Art of Science Communication.”

## I35 **Strategically Building Your CV at Every Career Stage**

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAIR: R. Booth

Sponsored by ASBMB Education and Professional Development Committee

Join in this hands-on workshop where attendees can discuss past or future experiences and how they link to a specific career path along with the best tools for marketing themselves. Workshop participants will be divided into groups based on their interests and career level and session speakers will facilitate the discussions within each group. While all career stages can benefit from this workshop, students, post-docs and early-career scientists are urged to attend. Your next job could depend on it.

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**I36 Your Data, Magnified: Success in Scientific Publishing**

**WORKSHOP**

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAIR: K. Sakabe

Are you confident your data will stand the test of time?

Are you writing in a clear and compelling manner to engage readers?

Are you reaching the audience you and your research deserve?

Join us for this 90-minute workshop to get tips on collecting and presenting data, editing text for clarity and reach, and sharing your work. JBC wants to help you achieve your publication goals as part of our mission to bring enduring research to the scientific community.

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**I37 ASBMB Annual Meeting Networking Reception**

**SOCIETY EVENTS**

**7:00 PM – 8:30 PM** CONVENTION CENTER, FOYER OUTSIDE ROOMS 30-31.

Join us so we may thank you for being an ASBMB member or share with you the benefits of joining the Society! Meet and mingle with members of the ASBMB leadership, including Natalie Ahn, ASBMB President, Gerald Hart, ASBMB President-elect, and editorial board members from JBC, JLR and MCP, the Society's three journals. Enjoy light refreshments while exploring research posters from recipients of the ASBMB Graduate Student Travel Awards, sponsored by the ASBMB Minority Affairs Committee.

*ASBMB Members and Biochemistry registrants welcome.*



**Learn about our career and  
professional development  
resources**

**VISIT ASBMB BOOTH #1316**

# MONDAY

## APRIL 23

### 243 Wake-Up! It's Trivia Time

#### SOCIETY EVENTS

**7:00 AM – 7:45 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

Sponsored by ASBMB Membership Committee



Calling all trivia junkies! Join your colleagues for a daily dose of trivia, music, fun and prizes! It's a lively way to jump-start your day—the complimentary coffee and nosh also helps! Prize values increase over the course of the meeting, so come back each morning for more challenges! ASBMB members and biochemistry registrants welcome.

*Space is limited with first come, first served.*

### 244 Avanti Award in Lipids

#### LECTURE

**8:00 AM – 8:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B



8:00 Awardee introduction

8:05 **244.1** Phospholipid Regulation of Inflammatory Processes and Viral Infection. D.R. Voelker, *National Jewish Health*

### 245 Mildred Cohn Award in Biological Chemistry

#### LECTURE

**8:30 AM – 9:00 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

8:30 Awardee introduction

8:30 **245.1** The Origin Recognition Complex: Where It All Begins. L. Joshua-Tor, A. Tocilj, K. On, Z. Yuan, J. Sun, H. Li, B. Stillman, *Cold Spring Harbor Laboratory, Howard Hughes Medical Institute and Brookhaven National Laboratory*

### 246 Earl and Thressa Stadtman Young Scholar Award

#### LECTURE

**9:00 AM – 9:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

9:00 Awardee introduction

9:00 **246.1** Visualizing Translation by Ensemble Cryo-EM. A. Korostelev, *University of Massachusetts Medical School*

### 211 Developing Your Core Message Statement/ "Elevator Speech"

#### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-I

You can talk about yourself as a professional scientist with confidence, clarity, and comfort as you advance your career. Your core message statement is a brief spoken statement (30-second mini-abstract) about you that lets people know who you are as a professional, what you do well, and what you expect to contribute. It is a well-prepared answer to the question, "Tell me a little bit about yourself." A positive core message statement helps open doors for connection, collaboration, and employment. This seminar will provide guidance in a safe place to develop and practice your statement.

SPEAKER: J. Lombardo, *Med. Col. of Wisconsin and Marquette Univ.*

## 212 **Goal Setting, Prioritizing, Time Management**

### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Most students have dreams and aspirations regarding academic, career and life ambitions. However, too often many fall short of realizing their dreams for lack of established goals and prioritized action steps. So they are left with questions such as these:

- 1) what am I going to do with the rest of my life?
- 2) What are my academic/career goals and objectives? and
- 3) How do I use my time wisely to get from where I am now to where I want to be in the future?

This seminar is designed to answer these questions in the context of goal setting, prioritizing, time, and stress management. Key topics: Decoding the Goals Setting Process, Prioritizing to Determine what is Important, Translating Goals into Time Based Action Steps, Time Management and Avoiding Procrastination, Handling Stress and Anxiety.

SPEAKER: H. Adams, *H.G. Adams & Assoc., Norfolk, VA*

## 213 **Networking and Getting Your Foot in the Door**

### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

SPEAKER: J. Sterling, *KGI, Claremont, CA*

## 207 **NIH F Awards: Navigating NIH Programs to Advance Your Career**

### WORKSHOP

**9:00 AM – 10:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 31A

This presentation will focus on the NIH's Ruth L. Kirschstein National Research Service Awards (NRSA). The NRSA research training fellowship (F) awards are targeted to individuals with or seeking research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the F awards discussed will be the F30, NRSA Individual Predoctoral MD/PhD or Other Dual-Doctoral Degree Fellowship Award, the F31 NRSA Individual Predoctoral Fellowship, the F31 NRSA Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research Award, the F32 NRSA Individual Postdoctoral Fellowship Award, and the NRSA Individual Senior Fellowship Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for pre- an postdoctoral fellows and senior investigators.

SPEAKER: M. Matthews, *NIH*

## 208 **Poster/Oral Presentation Practice & Mentoring Sessions**

### WORKSHOP

**9:00 AM – 5:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, PEER MENTOR POD

FASEB Diversity Resources Program will sponsor Presentation Practice & Mentoring Sessions beginning Saturday, April 21, to provide FASEB DREAM poster/oral presentation travel award recipients and other interested EB2018 student/postdoc attendees with an opportunity to practice their presentations and obtain feedback from designated Workshop Mentors/Coaches. If you would like to participate in the poster/oral presentation & mentoring sessions, sign-up by using the following link, [www.experimentalbiology.org](http://www.experimentalbiology.org) beginning Sunday, April 1.

## 209 **Career Corner Sessions with Dr. Adams**

### WORKSHOP

**9:00 AM – 5:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER CORNER

Drop in for one-on-one or group sessions for career counseling/career planning sessions with Dr. Howard G. Adams in between his presentations in the EB2018 Career Center. Dr. Adams will be available in the "Career Corner" in the EB2018 Career Center located in Hall D beginning on Saturday, April 21.

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## 210 **One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments**

### WORKSHOP

**9:00 AM – 5:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER COUNSELING ROOM

Sign-up for one-on-one sessions for CV/resume critiques, career counseling, and essay/personal statement assessments will begin on Saturday, April 21. If you're interested in a one-on-one, advance sign up will start on Sunday, April 1. Click on [www.experimentalbiology.org](http://www.experimentalbiology.org) to schedule your session.

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## 214 **Career Opportunities in Science Communications**

### WORKSHOP

**10:00 AM – 11:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

SPEAKER: E. Hayden, *Univ. of California, Santa Cruz*

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## 247 **Adapting Proteostasis to Ameliorate Neurodegenerative Diseases**

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAIR: J. W. Kelly

- 10:00    **247.1**    Targeting Protein-Protein Interactions in Chaperone Complexes to Normalize Proteostasis.  
J.E. Gestwicki, *University of California and San Francisco*
- 10:30    **247.2**    Adapting the Chemistry and/or Biology of Proteostasis to Ameliorate Protein Aggregation Diseases.  
J.W. Kelly, *Scripps Research Institute*
- 11:00    **247.3**    Systemic Misfolding of Immunoglobulins in the Test Tube and in the Cell. M. Ramirez-Alvarado, C.J. Dick, L.M. Blancas-Mejia, P. Misra, Y. Lin, K.R. Redhage, T.L. Jordan, A. Williams, J.S. Wall, *Mayo Clinic, University of Tennessee and Knoxville*
- 11:30    **247.4**    Regulation of Functional Proteome by the Heat Shock Response and Proteostasis Network.  
R.I. Morimoto, *Northwestern University*

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## 248 **Communicating Scientific Ideas to Novice Audiences**

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAIR: R. Booth

Sponsored by ASBMB Education and Professional Development Committee

Have you ever been the expert in the room trying to explain your scientific ideas or findings and your audience just does not get your message or gets the wrong message? Whether in a symposium, group meeting, classroom, or interview, effectively telling your scientific story to others is vitally important to a successful career. This session brings together speakers from diverse backgrounds to discuss communicating science effectively to non-expert groups. Even experienced communicators will benefit from the cross-disciplinary interactions in this session.

- 10:00    Chair's introduction.
- 10:05    Using Molecular Visualization with the Public— Making a Picture = 1000 Words. Paul Craig, *Rochester Inst. of Tech.*
- 10:25    Using the Three Minute Thesis for Interviews, Outreach and Networking. Nana Lee, *Univ. of Toronto*
- 10:45    Communicating Science in Politicized Environments. Arthur Lupia, *Univ. of Michigan*
- 11:05    Panel discussion.

## 249 Glycobiology and Functional Glycomics

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAIR: L. C. Hsieh-Wilson

- 10:00 249.1 Precisely Heterogeneous— The Making of N-Glycoproteins. M. Aebi, *ETH Zürich, Switzerland*
- 10:30 249.2 Mapping the O-GlcnaC-Cytoprotective Network. N. Zachara, J. Groves, C. Guo, M. Martinez, K. Fahie, C. McKen, A. Maduka, R. O'Meally, R. Cole, *John Hopkins University School of Medicine*
- 11:00 249.3 Cracking the Glycocode: Finding the Signal in the Noise. L.K. Mahal, *New York University*
- 11:30 249.4 A Systems-Level Understanding of Glycosylation Signaling Networks. L.C. Hsieh-Wilson, *California Institute of Technology*

## 250 New Insights into the Links between Metabolism and Disease

### SYMPOSIUM

**10:00 AM – 12:05 PM** SAN DIEGO CONVENTION CENTER, ROOM 6F

CHAIR: L. C. Cantley

Features the Bert and Natalie Vallee Award in BioMedical Sciences (2017) lecture.

- 10:00 Bert and Natalie Vallee Award in BioMedical Sciences (2017) awardee introduction
- 10:05 250.1 Corraling Pancreatic Cancer Through Epigenetic Reprogramming. R.M. Evans, C. Antal, M. Truitt, G. Liang, M. Sherman, P. O'Dwyer, J. Drebin, M. Downes, D. Tuveson, *The Salk Institute for Biological Studies, Perelman School of Medicine, University of Pennsylvania, Memorial Sloan Kettering Cancer Center, Cold Spring Harbor Laboratory and Howard Hughes Medical Institute*
- 10:35 250.2 Metabolism, Inflammation, and Tumor Progression. M.C. Simon, *Perelman School of Medicine and University of Pennsylvania*
- 11:05 250.3 The Role of Altered Metabolic States in Cancer and Other Human Diseases. R.J. DeBerardinis, *The University of Texas Southwestern Medical Center*
- 11:35 250.4 Obesity, Insulin Resistance and Cancer: The Pi3k Connection. L.C. Cantley, *Weill Cornell Medicine and Cornell University*

## 251 Regenerative Medicine

### SEBM SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAIR: J. Kang

Guest Society: Society for Experimental Biology and Medicine

- 10:00 Neuronal growth cone molecular machinery controlling brain circuit-specific development and diversity, toward regeneration: "Subcellular RNA-proteome mapping". Jeffrey Macklis, *Harvard Univ.*
- 10:25 Vascular tissue regeneration from 3D-bioprinted grafts implanted in Rhesus monkeys. Y. James Kang, *Sichuan Univ. West China Hosp. and Memphis Inst. of Regenerative Med.*
- 10:50 Intraoperative Bioprinting of Composite Tissues for Craniofacial Reconstruction. Ibrahim Ozbolat, *Penn State Univ.*
- 11:15 Regeneration of Synovial Joints in Zebrafish. Gage Crump, *USC*
- 11:40 General discussion.

## 252 RNA in Human Disease

### ISSUES IN DEPTH

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM IAB

Sponsored by ASBMB Minority Affairs Committee

- 10:00 **252.1** **Understanding and Targeting Spliceosomal Gene Mutations in Cancer.** O.I. Abdel-Wahab, *Memorial Sloan Kettering Cancer Center*
- 10:30 **252.2** **RNA and RNP Structures that Contribute to Viral Pathogenesis.** B.S. Tolbert, *Case Western Reserve University*
- 11:00 **252.3** **Context-Dependent and Disease-Specific Diversity in Stress Granules Formed from Pre-Existing Protein Interactions.** G.W. Yeo, S. Markmiller, S. Soltanieh, K.L. Server, R. Mak, W. Jin, M.Y. Fang, E-C. Luo, F. Krach, D. Yang, A. Sen, A. Fulzele, J.M. Wozniak, D.J. Gonzalez, M.W. Kankel, F-B. Gao, E.J. Bennett, E. Lécuyer, *University of California, San Diego, Institut de Recherches Cliniques de Montréal, Canada, National University of Singapore, Singapore, University of Massachusetts Medical School, Biogen and Université de Montréal, Canada*
- 11:30 **252.4** **Dynamic Mechanisms of Xist RNA Localization in Female Lymphocytes: A New Form of X-Chromosome Inactivation Maintenance.** M.C. Anguera, C. Syrett, *University of Pennsylvania*

## 253 Systems Biology and Proteomics

### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAIR: I. M. Cristea

- 10:00 **253.1** **New Approaches for Localization of Proteins and Interaction Partners in Cells with High Spatial Resolution.** S.A. Carr, N. Udeshi, S. Myers, *Broad Institute of Massachusetts Institute of Technology and Harvard*
- 10:30 **253.2** **From Petabytes to Molecular Insights: Building an Operating System for Cancer.** K. White, *University of Chicago*
- 11:00 **253.3** **Virion Display (Vird) Approach to Characterizing Non-Odorant Gpcrs in Humans.** H. Zhu, P. Desai, G-D. Syu, *John Hopkins University School of Medicine and Johns Hopkins University*
- 11:30 **253.4** **Hybrid Experimental-Mathematical Methods for Probing Dynamic Proteome Organization During Viral Infections.** I.M. Cristea, *Princeton University*

## 215 Job Hunting in Biotech Part 3: Compensation Negotiation for Scientist Positions

### WORKSHOP

**10:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-I

So you've landed a job offer for an industry scientist position! Now, how do you know if the compensation package is competitive, and how do you ask for more? In this seminar you will learn how to:

- Separate out the typical components of an industry job offer letter, so you know what to ask for
- Determine if an offer is competitive and when to ask for more-Ask for additional compensation in a way that represents your interests while maintaining positive relationships.

(THIS IS PART 3 OF A 3-PART SERIES. EACH SEMINAR CAN BE TAKEN SEPARATELY BUT TOGETHER THEY PROVIDE COMPREHENSIVE INFORMATION ABOUT THE INDUSTRY JOB SEARCH PROCESS.)

SPEAKER: B. Lindstaedt, *UCSF*

### 216 **Identifying Your Options using MyIPD + LinkedIn**

#### WORKSHOP

**10:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

This presentation is designed to provide you with strategies and resources for beginning to think about what kinds of professional options outside of academia might be a good match for your skills and interests, and how to gain access to additional information about those career possibilities that will help clarify which options warrant further interest and investigation.

SPEAKER: A. Green, *Univ. of California, Berkeley*

### 221 **NIH K Awards: Navigating NIH Programs to Advance Your Career**

#### WORKSHOP

**11:30 AM – 1:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

This presentation will focus on the NIH's Career Development Awards (K) including the most recent K99/00 Pathways to Independence Award (for postdoctoral scientists) and other K awards targeted to individuals with research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the K awards discussed will be the K01 Mentored Research Scientist Development Award, the K02 Independent Scientist Award, the K22 Career Transition Award, the K08 Mentored Clinical Scientist Development Award, the K23 Mentored Patient Oriented Career Development Award, the K24 Mid-Career patient Oriented Career Award, and K25 Mentored Quantitative Scientist Career Development Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for beginning investigators.

SPEAKER: M. Matthews, *NIH*

### 217 **Constructing Your Elevator Pitch Workshop (presented by ASBMB Outreach Committee)**

#### WORKSHOP

**12:00 PM – 1:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

This interactive workshop will guide you through the process of creating and delivering an effective statement. Presenters will discuss real-life approaches to communication that work (and don't work) and offer plenty of opportunities for practice and feedback. The skills you'll gain are not just valuable for communicating with the lay public but with other academics, government officials and potential employers as well.

SPEAKER: TBD ASBMB Outreach Committee, TBD

## ASBMB Poster Presentations

#### POSTER SESSIONS

**12:15 PM – 2:15 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

*Refer to pages 88–105 for presentation details.*

### 254 **ASBMB Meet the Speakers**

#### SOCIETY EVENTS

**12:30 PM – 1:00 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH 1316

Visit the ASBMB Lounge (Exhibit Hall across from ASBMB Booth #1316) to meet the morning presenters and continue the scientific discussion — a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

## 218 **Job Hunting in Biotech Part 1: Finding & Applying for Scientist Positions**

### WORKSHOP

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

In this seminar, you will learn how to prepare resumes and cover letters so you will be ready to search for research jobs in the biotech/pharma industry. Then, you will learn how to find and connect with scientists working at companies. Finally, you will learn how to execute job search strategies necessary for success on the biotech/pharma job market. After this seminar you will understand how to conduct the four job hunting techniques that comprise a comprehensive job search in the biotech industry.

(THIS IS PART 1 OF A 3-PART SERIES. EACH SEMINAR CAN BE TAKEN SEPARATELY BUT TOGETHER THEY PROVIDE COMPREHENSIVE INFORMATION ABOUT THE INDUSTRY JOB SEARCH PROCESS.)

SPEAKER: B. Lindstaedt, UCSF

## 219 **Building Your Job Search Skills: Networking & Information Interviews**

### WORKSHOP

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

You've begun to identify some potential new career paths, but how do you build on these sparks of interest, learn more about the day-to-day content of a given field, and find individuals working in that career who can answer your questions and help you build a network in your emergent profession. This presentation will discuss how to utilize LinkedIn, professional associations, and other networking opportunities to increase your knowledge base and create opportunities for informational interviews.

SPEAKER: A. Green, Univ. of California, Berkeley

## 220 **Successful Behaviors for Winning An Interview**

### WORKSHOP

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

Eye contacts, arriving on time- these are given behaviors for any interview of any type and everyone knows them. The successful behaviors for winning an interview are those that categorize you as a high risk or low risk for the next recruitment step. In this seminar, you will learn what behaviors are important to exhibit on an interview, and how employers evaluate these behaviors to determine whether or not you are a low risk and move you on to the next recruitment step, or a high risk and don't.

SPEAKER: J. Blumenthal, Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD

## 255 **ASBMB Meet the Speakers**

### SOCIETY EVENTS

**1:30 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH 1316

Visit the ASBMB Lounge (Exhibit Hall across from ASBMB Booth #1316) to meet the morning presenters and continue the scientific discussion — a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

### 222 **Making The Case for Graduate School**

#### WORKSHOP

**2:00 PM – 3:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Advanced degree level training has emerged as a key requirement for garnering positions of leadership in academia, government, and industry and for careering in today's workplace. Beyond this, an advanced degree signal scholarship, maturity, and the capacity to do rigorous work; all attributes that can provide an edge in the workplace. This seminar explores graduate education in the context of: 1) a career enhancement strategy; 2) graduate study opportunities/options; 3) how-to negotiate the graduate school admission and financial aid process, and 4) placing graduate studies in one's overall academic/career/life plans. Key topics: Making the Case for Graduate School, The Application/Admissions Process, funding for Graduate Work, and Putting the Pieces Together for a Smart Application.

SPEAKER: H. Adams, *H.G. Adams & Assoc., Norfolk, VA*

### 223 **Job Search in Academia & Industry**

#### WORKSHOP

**2:30 PM – 3:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

Are you on the market for both academic and industry jobs, but aren't sure where to start? Learn strategies for successfully navigating the two-track job search. Topics: Organizing your search, timelines/logistics, researching employer organizations, presenting your qualifications and evaluating job offers.

SPEAKER: D. Behrens, *Univ. of California, Berkeley*

### 224 **Career Opportunities in Science Communications**

#### WORKSHOP

**2:30 PM – 3:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

SPEAKER: E. Hayden, *Univ. of California, Santa Cruz*

### **ASBMB Accreditation Program Q&A**

#### WORKSHOP

**2:30 PM – 3:30 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH I316

What does ASBMB accreditation mean for your department or program? What are the requirements for accreditation? What are the application procedures? How will ASBMB accreditation benefit your program and students? Join us to find out answers to these questions and more at our informal Q&A session.

### **ASBMB Communication Training Program Q&A**

#### WORKSHOP

**2:30 PM – 3:30 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH I316

In order to better prepare and motivate our members to get involved with public engagement activities, the Public Outreach Committee is developing a comprehensive communications program. The training offered through this program are available in both online and in-person formats for ASBMB members. Interested in learning more? Join us for this information Q&A.

## 256 Chromatin Regulation of Gene Expression

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAIR: V. M. Weake

- 2:30 Elucidating Epigenetic Readers of H3t45ph in *s. Cerevisiae*. P. Grant, C. Lee, M. Pray-Grant, S. Bekiranov, *University of Virginia School of Medicine*
- 2:45 Determining the Enhancer Proteomes in Primary Cells and Native Tissue. D. Steger, D. Cohen, J. Remsberg, S. Sidoli, B. Garcia, *University of Pennsylvania*
- 3:00 256.1 Cohesin Loss Eliminates All Loop Domains. S.S. P. Rao, S.-C. Huang, B. Glenn St. Hilaire, J.M. Engreitz, E.M. Perez, K.-R. Kieffer-Kwon, A.L. Sanborn, S.E. Johnstone, G.D. Bascom, I.D. Bochkov, X. Huang, M.S. Shamim, J. Shin, D. Turner, Z. Ye, A.D. Omer, J.T. Robinson, T. Schlick, B.E. Bernstein, R. Casellas, E.S. Lander, E. Lieberman Aiden, *Stanford University, Baylor College of Medicine, Broad Institute of Massachusetts Institute of Technology and Harvard, Lymphocyte Nuclear Biology, National Institute of Arthritis and Musculoskeletal and Skin Diseases, N and New York University*
- 3:15 Discovering and Exploiting Selectivity in BET Tandem Bromodomain Recognition of Epigenetic Lysine Acylation. B.C. Smith, M.D. Olp, D.J. Sprague, *Medical College of Wisconsin*
- 3:30 256.2 Aging Photoreceptors: Light, Stress and Transcription. V.M. Weake, *Purdue University*

## 257 Emerging Antibiotics from Nature

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAIR: T. Wencewicz

- 2:30 Ni(II) Uptake by Yersiniabactin, a Metallophore Produced by Uropathogenic *e. Coli*. A.E. Robinson, J.E. Lowe, E.-I. Koh, J.P. Henderson, *Washington University School of Medicine in St. Louis*
- 2:45 Structural and Functional Large Substrate Binding in Iterative Non-Ribosomal Peptide Synthesis Independent Synthesis (NIS) Enzymes. K.M. Hoffmann, *California Lutheran University*
- 3:00 Directed Evolution of an Adenylation Domain Specificity Code. V. Vinnik, K. Throckmorton, T.B. Cook, B.F. Pfeleger, M.G. Thomas, *University of Wisconsin–Madison*
- 3:15 Synthetic Biology, Biosynthesis, Enzymology, (Meta)genomics, et al. Learning from Nature. V. Agarwal, *Georgia Institute of Technology*
- 3:30 257.1 Beta-Lactam and Beta-Lactone Antibiotics from Plant Microbiomes. T. Wencewicz, *Washington University in St. Louis*

## 258 New Frontiers in Substrate Metabolism

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAIR: L. Kazak

- 2:30 Mechanism of Obesity Suppression by Adipose Tissue Creatine Energetics. L. Kazak, G.Z. Lu, B.M. Spiegelman, *McGill University, Canada and Dana-Farber Cancer Institute*
- 2:45 Mogat1 Is a Fasting-Induced PPAR  $\alpha$  Target Gene That Plays a Role in Coordinating the Hepatic Response to Food Deprivation. A.J. Lutkewitte, K.S. McCommis, K.T. Chambers, M.J. Graham, A.M. Hall, B.N. Finck, *Washington University School of Medicine in St. Louis and Ionis Pharmaceuticals Inc.*
- 3:00 Deletion of Muscle *Acs11* Caused Myopathy and Fiber Switch. L. Zhao, L. Bacudio, A.L. Suchanek, P.A. Young, F. Pascual, R.A. Coleman, *University of North Carolina at Chapel Hill*
- 3:15 Mtor Signaling in Adipose Tissue Influences Systemic Lipid Metabolism. R. J., J.B. A., *University of Pennsylvania*
- 3:30 Monomethyl Branched Chain Fatty Acids Link Mitochondrial Amino Acid Metabolism and Adipose Tissue Lipogenesis to Fatty Acid Diversity. M. Wallace, C. Green, L. Roberts, M. Lee, P. Cabrales, J. Ayres, D. Nomura, R. Loomba, C. Metallo, *University of California, San Diego, University of California, Berkeley and Salk Institute*

## 259 Plant Metabolism and Photosynthesis

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAIR: J. C. Cameron

- 2:30 **259.1** “Exploring the Regulation of Photosynthesis in Single-Cell Lineages at Sub-Cellular Resolution”. J.C. Cameron, *University of Colorado Boulder*
- 2:45 Effects of a Sethoxydim-Based Herbicide on the Photosynthetic Capacity of *Chlorella Vulgaris*, a Non-Target Organism. A.L. Smythers, A. Garmany, N. Perry, P.E. Adkins, E. Higginbotham, D.R. J. Kolling, *Marshall University*
- 3:00 The Rising of Acylsugar Diversity: Metabolic Innovation in Tomato Trichomes Through Bahd Enzyme Promiscuity and Pathway Evolution. P. Fan, A.M. Miller, A.D. Jones, X. Liu, R.L. Last, *Michigan State University*
- 3:15 Investigating the Interaction Between Med5 and Cdk8 in Arabidopsis. X. Mao, V.M. Weake, C.C.S. Chapple, *Purdue University*
- 3:30 Increasing Seed Iron Content by Gene Manipulation in Arabidopsis. Z. Ghalamkari, T.J. Buckhout, *Humboldt Universität zu Berlin, Germany*

## 260 Protein Folding: The Good, the Bad and the Disordered

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAIR: J. E. Kim

- 2:30 The Intrinsically Disordered PsbO Subunit of Photosystem II: Structure and Role in Photosynthetic Water Oxidation. B.A. Barry, U. Brahmachari, C.E. Obi, J.N. He, *Georgia Institute of Technology*
- 2:45 Non-Native Structure Present in the Unfolded Ensemble May Initiate Aggregation of Als Variants of Superoxide Dismutase (SodI). N. Cohen, O. Bilsel, C.R. Matthews, *University of Massachusetts Medical School*
- 3:00 Initially Disordered, Reflectin Assembly Tunably and Reversibly Drives Biophotonic Color. R. Levenson, C. Bracken, C. Sharma, J. Santos, C. Arata, D.E. Morse, *University of California and Santa Barbara*
- 3:15 Nmr Structural Studies of Membrane Proteins in Bilayer Environments. J. Radoicic, S. H. Park, S.J. Opella, *University of California and San Diego*
- 3:30 **260.1** Folding of a Membrane Protein into Nanodiscs. D.K. Asamoto, J.E. Kim, *University of California and San Diego*

## 261 Proteomics and Lipidomics: Methods and Applications for Human Disease

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAIR: A. Nita-Lazar

- 2:30 **261.1** Targeted Proteomics-Driven Computational Modeling of Macrophage Microbial Sensing Pathways. A. Nita-Lazar, N.P. Manes, J.M. Mann, P. Kaplan, M. Meier-Schellersheim, I.D. C. Fraser, R.N. Germain, *National Institute of Allergy and Infectious Diseases and National Institutes of Health*
- 2:45 **261.2** Quantitative Phosphoproteomic Analysis of Feedback Networks in T Cell Signaling. A. Salomon, J. Belmont, Q. Ji, *Brown University*
- 3:00 Mass Spectrometry of Single Mammalian Cells Quantifies Proteome Heterogeneity During Cell Differentiation. E. Levy, B. Budnik, N. Slavov, *Northeastern University and Harvard University*
- 3:15 An Aptamer-Based Approach to Assess the Human Plasma Proteome for Pre-Analytical Variability. J.R. Daniels, Z. Cao, M. Maisha, L.K. Schnackenberg, J. Sun, L. Pence, T.C. Schmitt, B. Kamlage, R.D. Beger, L-R. Yu, *National Center for Toxicological Research, U.S. Food and Drug Administration and Metanomics Health GmbH, Germany*
- 3:30 Advancement in Atopic Dermatitis Research Through the Use of a Novel Skin Tape Strip Mass Spectrometry Based Processing Protocol. E. Berdyshev, E. Goleva, I. Bronova, M.A. Seibold, J. Jung, D.Y.M. Leung, *National Jewish Health*

## 262 Redox Enzymes

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAIR: K. Johnson-Winters

- 2:30 A Novel Radical SAM Mechanism Mediated by the Interferon-Inducible Protein Viperin.  
A.B. Dumbrepail, P. Malec, S. Ghosh, A. Patel, R.T. Kennedy, E. N.G. Marsh, *University of Michigan*
- 2:45 Determining the Active Site Base and Order of Substrate Addition Within F<sub>420</sub>-Dependent Glucose-6-Phosphate Using Steady-State and Pre Steady-State Kinetics and Isotope Effects Methods.  
K. Johnson-Winters, M. Oyugi, L. Davis, G. Bashiri, E.N. Baker, *The University of Texas at Arlington and University of Auckland, New Zealand*
- 3:00 A Bacterial Flavin-Dependent Oxidoreductase That Captures Carbon Dioxide into Biomass.  
J. Mattice, B. Streit, G. Prussia, J. Peters, J. DuBois, *Montana State University and Washington State University*
- 3:15 Dissecting the Molecular Basis of a Phenylketonuria-Causing Mutation in Phenylalanine Hydroxylase.  
C.A. Khan, S.P. Meisburger, N. Ando, P.F. Fitzpatrick, *The University of Texas Health Science Center and Princeton University*
- 3:30 Deciphering the Effect of Salts on Bilirubin Oxidases Activity. E. Roussarie, S. Bichon, G. Perrière, N. Mano, C. Stines-Chaumeil, *National Center for Scientific Research, France*

## 263 Alice and C.C. Wang Award in Molecular Parasitology Symposium

### AWARD SYMPOSIUM

**2:30 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAIR: E. A. Winzeler

- 2:30 Awardee introduction
- 2:35 263.1 Using *in Vitro* Evolution and Chemogenomics to Explore the Malaria Parasite Drug-Able Genome.  
E.A. Winzeler, *University of California and San Diego School of Medicine*
- 3:00 I+I=I: targeting endosymbiosis for antimalarial drug discovery. E. Yeh, *Stanford Univ.*
- 3:25 Out of the mouths of babes: breath volatiles in pediatric malaria. A. Odom John, *Washington Univ. St. Louis*
- 3:50 Molecular and structural mechanisms of malaria parasite invasion. W.-H. Tham, *Walter and Eliza Hall Inst., Australia*
- 4:15 General discussion.

## 264 Environmental Health, Biomarkers and Precision Medicine

### SEBM SYMPOSIUM

**3:00 PM – 5:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAIRS: B. Slikker, S. Cormier

Guest Society: Society for Experimental Biology and Medicine

- 3:00 Precision Prevention. Kenneth Ramos, *Univ. of Arizona*
- 3:25 Minimally-invasive Biomarkers of Neurotoxicity: Application to Drug Development. Ruth Roberts, *Birmingham Univ., UK*
- 3:50 Biomarkers and their Impact on Precision Medicine. Jennifer Wilson, *Stanford Univ.*
- 4:15 Discussion.

## 225 **Ten Ways to Get Lucky in the Job Search**

### WORKSHOP

**3:30 PM – 4:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Although it is important to have a plan for your career progression, it is just as important to take advantage of unexpected events along the way. This seminar will suggest specific ways to foster chance occurrences that may influence your job search. We will examine ten practical suggestions to prepare you to make happenstance work positively for you.

**3:30** P. Clifford, J. Lombardo, *Univ. of Illinois at Chicago, Med. Col. of Wisconsin and Marquette Univ.*

## 226 **Job Hunting in Biotech Part 2: Interviewing for Scientist Positions**

### WORKSHOP

**4:00 PM – 5:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

This seminar is designed to help you improve your interview skills so that you will be better prepared to land a scientist position in industry. At the end of the seminar, you will be able to:

- Respond effectively to the most common questions asked during industry interviews,
- Answer behavior-based questions in an organized manner,
- Begin an end the interview experience with poise and professionalism.

(THIS IS PART 2 OF A 3-PART SERIES. EACH SEMINAR CAN BE TAKEN SEPARATELY BUT TOGETHER THEY PROVIDE COMPREHENSIVE INFORMATION ABOUT THE INDUSTRY JOB SEARCH PROCESS.)

SPEAKER: B. Lindstaedt, *UCSF*

## 227 **Making the Grade: Job Talk/Chalk Talk**

### WORKSHOP

**4:00 PM – 5:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

SPEAKER: D. Behrens, *Univ. of California, Berkeley*

## 265 **BMB Education: Active Learning**

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAIR: M. Payne

Sponsored by ASBMB Education and Professional Development Committee

**4:00** Using an Innovative Approach to Teach Students How to Communicate About Scientific Topics to Non-Scientists. M.A. Rowland-Goldsmith, M. Bisoffi, *Chapman University*

**4:15** Scaffolding Soft-Skill Development Into a Two-Semester Undergraduate Laboratory Course. D.P. Grilley, T.M. Weaver, *University of Wisconsin-La Crosse*

**4:30** Increasing Active Learning in the Biochemistry Classroom: Using Group Quizzes to Stimulate Discussion. L.J. Moore, *Monmouth College*

**4:45** When Active Learning Fails: How Faculty Beliefs Inform Their Teaching and Influence Student Outcomes. S.M. Lo, *University of California and San Diego*

**5:00** A Competency-Based Approach to Developing Biomolecular Visual Literacy. D.R. Dries, D.M. Dean, M.A. Franzen, H.V. Jakubowski, W.R. P. Novak, K. Procko, A.I. Roca, C.R. Terrell, *Juniata College, University of Saint Joseph, Milwaukee School of Engineering, College of St. Benedict/St. John's University, Wabash College, MinorityPostdoc.org and University of Minnesota Rochester*

## 266 DNA Replication Initiation, Progression and Termination

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAIR: D. Smith

- 4:00 A Novel Role of the Human Cst Complex in Regulating the DNA Damage Response. J.A. Stewart, S.M. Ackerson, *University of South Carolina*
- 4:15 The Highly Conserved Proteins Nucleolin and SubI Play Critical Roles in Regulating G4 DNA-Induced Genome Instability. N. Kim, *The University of Texas Health Science Center at Houston*
- 4:30 Multisubunit Multiactive Site DNA Polymerase Complexes with Coordinated Activities. M.A. Trakselis, *Baylor University, University of Toronto, Canada and International Foundations of Medicine, Italy*
- 4:45 CdtI Variants Offer Novel Insights into CdtI-Mcm Interactions and an Unexpected Mechanism for Cyclin A to Block DNA Re-Replication. P.N. Pozo, Y. Cole, J. Matson, Y. Zhuo, B. Temple, J.G. Cook, *University of North Carolina at Chapel Hill*
- 5:00 Molecular Insights into Replication-Associated Genome Instabilities Caused by CST Deficiency. W. Chai, *Washington State University*

## 267 Glycoimmunity

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAIR: C. L. Leimkuhler-Grimes

- 4:00 Molecular and Structural Recognition of *Listeria* Cell-Wall Glycopolymers by Bacteriophage-Encoded SH3b Domains. Y. Shen, I. Kalograiaki, A. Prunotto, M. Dunne, E. Sumrall, F.J. Cañada, M. Loessner, *ETH Zürich, Switzerland, Centro de Investigaciones Biológicas, Spain and Faculdade de Medicina Universidade de Lisboa, Switzerland*
- 4:15 Rapid Evolution of Bacterial Exotoxin B Subunits Independent of a Subunits: Sialic Acid Binding Preferences Correlate with Host Range and Intrinsic Toxicity. N. Khan, A. Verhagen, Z. Khedri, S. Diaz, N. Varki, A. Paton, T. Beddoe, J. Paton, A. Varki, *University of California, San Diego, University of Adelaide, Australia and La Trobe University, Australia*
- 4:30 Elevated O-GlcNac Exacerbates Pro-Inflammatory Cytokine Secretion from Cd4<sup>+</sup> T Cells. M. Machacek, J. Li, T. Li, T. Lydic, C. Slawson, P. Fields, *University of Kansas Medical Center and Michigan State University*
- 4:45 Role of the Kdo Glycosyltransferase Kpss in the Biosynthesis of the Polysialyltransferase Acceptor for *Escherichia coli* K1. N. Lanz, V. Thon, W. Vann, *U.S. Food and Drug Administration*
- 5:00 Use of Bioorthogonal N-acetylcysteamine (SNAC) Analogues and Peptidoglycan O<sup>6</sup>acetyltransferase B (PatB) to Label Peptidoglycan. K.M. Lazor, Y. Wang, K.E. DeMeester, H. Liang, T.K. Heiss, C.L. Grimes, *University of Delaware*



## Visit ASBMB Booth #1316

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and a **free gift!**

Monday

## 268 Lipid and Protein Organization in Membranes

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAIR: S. L. Veatch

- 4:00 Brewster Angle Microscopy and Langmuir Monolayer Films: Construction of an Instrument and Basic Software Development for Visualization of Lipid Domains and Lipid Raft Formation. B.C. Allen, B.E. Sturgeon, A.G. Sostarecz, *Monmouth College*
- 4:15 Mechanism of Membrane Biogenesis. A.R. Naik, E.R. Kuhn, K.T. Lewis, K.M. Kokotovich, K. Maddipati, X. Chen, H. Horber, D.J. Taatjes, J.J. Potoff, B.P. Jena, *Wayne State University, University of Bristol, United Kingdom and University of Vermont*
- 4:30 Interorganellar Phosphatidylserine Transfer by Sec14 Family Protein Sfh1 in *Saccharomyces Cerevisiae*. A. Mizuike, S. Kobayashi, H. Horiuchi, A. Ohta, R. Fukuda, *The University of Tokyo, Japan and Chubu University, Japan*
- 4:45 Regulating a G Protein-Coupled Receptor by Topological Inversion Through Regulated Alternative Translocation. B. Denard, *The University of Texas Southwestern Medical Center*
- 5:00 268.1 Probing Membrane-Mediated Forces Between Proteins in Cells Using Super-Resolution Fluorescence Localization Imaging. S.L. Veatch, S.A. Shelby, *University of Michigan*

## 269 Molecular Tools to Study Cell Signaling

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAIR: M. Tantama

- 4:00 Revealing Subcellular Redox Dynamics with Multiplex Imaging of Compartment-Specific Redox Probes. M. Tantama, J. Norley, S. Radhakrishnan, M. Rajendran, *Purdue University*
- 4:15 Spatial Compartmentalization of Akt/mTOR Signaling: What Happens in the Nucleus. X. Zhou, Y. Zhong, J. Zhang, J.Y.-J. Shyy, J. Zhang, *University of California and San Diego*
- 4:30 Temporal Control of Growth Factor-Mediated Signaling Pathways During Cell Differentiation and *Xenopus* Embryonic Development. P. Mondal, V.V. Krishnamurthy, J. Khamo, S. Sharum, K. Zhang, *University of Illinois at Urbana-Champaign*
- 4:45 Allosteric Regulation of Protein Kinases Using Optogenetics. M. Shaaya, V. Huyot, A. Zhurikhina, D. Tsygankov, V. Natarajan, A. Karginov, *University of Illinois at Chicago and Georgia Institute of Technology*
- 5:00 Planar Enteroids Reveal an Autonomous Wnt and Bmp Circuit Controlling Intestinal Epithelial Growth and Organization. C.A. Thorne, I.W. Chen, L.E. Sanman, M.H. Cobb, L.F. Wu, S.J. Altschuler, *University of Arizona, University of California, San Francisco and The University of Texas Southwestern Medical Center*

## 270 Obesity, Metabolism and Immune Cells in Cancer

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAIR: L. Makowski

- 4:00 Cd8<sup>+</sup> T Cells Regulate Liver Injury in Obesity-Related Nonalcoholic Fatty Liver Disease. A. Kennedy, C. Pacheco, M.K. Washington, A. Hasty, *Vanderbilt University, Seattle Children's Hospital and Vanderbilt University Medical Center*
- 4:15 The Role of Effective Energy Restriction on Metastatic Tumor Growth. T. Roy Sarkar, N. Sphyrin, E. Schmitt, G. Wyatt, S. Wall, W. Porter, *Texas A&M University and Independent Researcher, United Kingdom*
- 4:30 Time-Restricted Feeding Attenuates Breast Cancer Growth in a Mouse Model of Postmenopausal Obesity. M. Das, E. Gross, D. Kumar, C. Saucedo, H.-T. Park, D. Sears, L. Ellies, N. Webster, *University of California and San Diego*
- 4:45 Biosynthesis of Acyl-CoA Sustains Prostate Cancer Progression. H. Cai, Y. Ma, *University of Georgia*
- 5:00 270.1 Myeloid-Specific *Glut1* Ablation Attenuates Mammary Gland Inflammation and Claudin-Low Breast Cancer Progression. G. A., M.T. A., S.H. D., *University of North Carolina and University of Tennessee Health Science Center*

## 271 Strange Microbial Transformations

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAIR: M. R. Seyedsayamdost

- 4:00**      **Biosynthesis of Nonproteinogenic Amino Acids Oxyvinylglycines.** B. Li, J.B. Patteson, Z.D. Dunn, *University of North Carolina at Chapel Hill*
- 4:15**      **Evidence for Control of Metabolite Flux Through a Bacterial Heme Biosynthetic Pathway.** A.I. Celis, J. Choby, E. Skaar, J. DuBois, *Montana State University and Vanderbilt University Medical Center*
- 4:30**      **271.1 New RiPP Family Incorporates Alpha-N-Methylations into Ribosomally Encoded Peptide Natural Products.** M. Freeman, *University of Minnesota*
- 4:45**      **Biosynthesis of Non-Ribosomal Peptide Beta-Lactones by Plant-Associated *Pseudomonas Fluorescens*.** J. Schaffer, T. Wencewicz, *Washington University in St. Louis*
- 5:00**      **271.2 Eliciting Cryptic Secondary Metabolites Using Antibiotics.** M.R. Seyedsayamdost, *Princeton University*

## 228 Attitude & Behaviors: How Are You Perceived

### WORKSHOP

**4:30 PM – 5:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Every person carries within them thoughts, feelings, and emotions that influence the way we are perceived by others, and the way we behave. This interaction (perceptions of others and our behavior) is so very complex, and happens so quickly, that perceptions are not necessarily at a conscious level and therefore opinions about you can be formed before you even have a chance to make any corrections to your attitude or behavior. This is a serious consequence during the job search, and a consequence we want to do without. Dr. Blumenthal will teach you how to present yourself in your resume, on the interview, and subsequent follow ups, including the job offer. She will teach you what goes on behind the scenes regarding attitudes and behaviors so that you have more leverage on your side. The end result is a positive consequence increasing the likelihood of job interviews and a job offer.

SPEAKER: J. Blumenthal, *Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD*

## 272 Molecular Visualization

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAIR: M. Payne

Sponsored by ASBMB Education and Professional Development Committee

This workshop will present to scientists of all levels the practical knowledge for how to communicate molecular structure/function using low-cost, but powerful methods. Techniques for using molecular visualization software to effectively convey structural features will be demonstrated. Included will be a sample of virtual reality technology that has been shown to enhance understanding of molecular structures.

## 273 Optogenetics and Molecular Sensors: Tools and Applications

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAIR: K. Hahn, M. Lin

This workshop will describe new approaches to visualize and manipulate proteins in living cells, including broadly applicable methods to control proteins with light, and approaches to visualize signaling at the single molecule level. Chemogenetic and optogenetic approaches will be discussed, as will engineering allosteric responses to confer protein control by small molecules.

## 926 **Research Support Opportunities at NSF in the BIO-Integrative Organismal Systems (IOS) and Molecular and Cellular Biosciences (MCB)**

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 31A

Sponsored by National Science Foundation

This presentation will highlight funding opportunities managed by the Divisions of IOS and MCB within the NSF's Directorate for Biological Sciences (BIO). New and ongoing NSF-BIO programs, including interdisciplinary and cross-directorate programs, and the new no-deadline process for core research proposals will be covered, followed by a Q&A session for participants.

*SPEAKERS: K. Dickson, Div. of Integrative Organismal Systems, NSF, M. Rawat, Div. of Integrative Organismal Systems, NSF, R. Cyr, Div. of Molecular and Cellular Biosciences, NSF, A. Le-Pham, Science Assistant, NSF*

## 274 **Supported Lipid Membranes and Nanodiscs**

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAIRS: S. Sligar, L. K. Tamm

This workshop will introduce attendants to the preparation and use of supported membranes and nanodiscs in research of membrane proteins, lipids, and interactions between them. Two leaders of the field will give broad overviews and practical advice on the use of these relatively new and surging fields of membrane research. Ample time will be allowed for discussion of these techniques with attendants, who will be encouraged to also share their experiences with these systems.

## 275 **Transforming Science Research into Science Outreach**

### WORKSHOP

**5:30 PM – 7:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6B

CHAIR: A. Barral

Sponsored by ASBMB Public Outreach Committee

Members of the Public Outreach Committee and other invited speakers will showcase examples of how to turn scientific research projects into outreach activities aimed at diverse audiences. These will include demos and curricular models appropriate for K-12 students; translating detailed research work into policy-relevant summaries; and additional audience-specific outreach. Presenters will discuss the importance of outreach and its impact on various societal issues.

## **Young Experimental Scientists (Y.E.S.) Mixer**

### SOCIETY EVENTS

**09:00 PM – 01:00 PM** HILTON BAYSIDE HOTEL, AQUA A-C

*Undergraduates, Graduate Students and Postdoctoral Fellows welcome. Bring your ID and EB2018 Meeting Badge.*

# TUESDAY

## APRIL 24

### 374 **Wake-Up! It's Trivia Time**

#### SOCIETY EVENTS

**7:00 AM – 7:45 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

Sponsored by ASBMB Membership Committee

Calling all trivia junkies! Join your colleagues for a daily dose of trivia, music, fun and prizes! It's a lively way to jump-start your day—the complimentary coffee and nosh also helps! Prize values increase over the course of the meeting, so come back each morning! ASBMB members and biochemistry registrants welcome.

*Space is limited with first come, first served.*



### 375 **ASBMB-Merck Award**

#### LECTURE

**8:00 AM – 8:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B



8:00 Awardee introduction

8:05 **375.1** **Black Spot, Black Death, Black Pearl: The Tales of Bacterial Effectors.** K. Orth, *Howard Hughes Medical Institute and The University of Texas Southwestern Medical Center*

### 376 **Ruth Kirschstein Diversity in Science Award**

#### LECTURE

**8:30 AM – 9:00 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

8:30 Awardee introduction

8:35 **376.1** **Vision Cycle Proteins: Their Function, Structure and Links to Retinal Disease.** A. Tsin, *The University of Texas Rio Grande Valley School of Medicine*

### 377 **DeLano Award for Computational Biosciences**

#### LECTURE

**9:00 AM – 9:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6B

9:00 Awardee introduction

9:05 **377.1** **Solutions to the Computational Protein Folding Problem.** C. Sander, D. Marks, *Harvard Medical School and Dana-Farber Cancer Institute and Harvard Medical School*

### 346 **How Sensations and Perceptions Influence Your Behavior**

#### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-I

The neuroscience of sensations and perceptions is often presented separate from behaviors we choose; yet, they are essential antecedents causing us to behave the way we do. In this seminar, we will review the neuroscience of sensations and perceptions and learn how these unique physiological and cognitive processes influence our behavior. This understanding will help better prepare you to achieve your goals when networking and interviewing, in addition to helping you do well in all interactions, such as with professors and colleagues.

**SPEAKER:** J. Blumenthal, *Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD*

### 347 **What You Seek is What You Get**

#### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

It is generally agreed that sharing in a mentoring relationship can boost one's career/professional/technical growth and development. One common concern of some professionals in today's workplace regarding mentoring is this: "Since I am not privileged to have formal mentoring available to me, how do I find and choose a mentor on my own?" This seminar provides an overview of essential strategies for identifying, screening, selecting, and using a mentor(s). Key topics:

- Decoding the Language of Mentoring.
- Establishing Mentoring Needs and Expectations.
- Identifying, Screening, and Selecting a Mentor.
- Building a Mentorship Alliance.
- Developing Mentorship Goals and Action Steps.

SPEAKER: H. Adams, *H.G. Adams & Assoc., Norfolk, VA*

### 348 **Career Opportunities in Science Communications**

#### WORKSHOP

**9:00 AM – 10:00 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

SPEAKER: E. Hayden, *Univ. of California, Santa Cruz*

### 342 **NIH K Awards: Navigating NIH Programs to Advance Your Career**

#### WORKSHOP

**9:00 AM – 10:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 31A

This presentation will focus on the NIH's Career Development Awards (K) including the most recent K99/00 Pathways to Independence Award (for postdoctoral scientists) and other K awards targeted to individuals with research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the K awards discussed will be the K01 Mentored Research Scientist Development Award, the K02 Independent Scientist Award, the K22 Career Transition Award, the K08 Mentored Clinical Scientist Development Award, the K23 Mentored Patient Oriented Career Development Award, the K24 Mid-Career patient Oriented Career Award, and K25 Mentored Quantitative Scientist Career Development Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for beginning investigators.

SPEAKER: M. Matthews, *NIH*

## Listen to the 2018 ASBMB playlist on Spotify!

Open the Spotify app on your phone, click Search, tap the camera icon, and scan this barcode! These tunes are inspired by California, road trips, and science. Tweet us @ASBMB #ASBMBJams to add your favorite tracks!



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### 343 **Poster/Oral Presentation Practice & Mentoring Sessions**

#### WORKSHOP

**9:00 AM – 4:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, PEER MENTOR POD

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### 344 **Career Corner Sessions with Dr. Adams**

#### WORKSHOP

**9:00 AM – 4:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER CORNER

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### 345 **One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments**

#### WORKSHOP

**9:00 AM – 4:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CAREER COUNSELING ROOM

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### 378 **Advances in Single Cell 'Omics**

#### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6E

CHAIR: J. H. Eberwine

- |       |              |                                                                                                                                                                                     |
|-------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:00 | <b>378.1</b> | Super-Resolution Imaging of Transcription in Live Mammalian Cells. I.I. Cissé, <i>Massachusetts Institute of Technology</i>                                                         |
| 10:30 | <b>378.2</b> | Single-Cell Resolution of Developing Tissues and Cell Identity Programming. B.J. Wold, <i>California Institute of Technology</i>                                                    |
| 11:00 | <b>378.3</b> | Electrophoretic Cytometry: High-Selectivity Measurement of Isoforms Using Microfluidics. A.E. Herr, <i>University of California and Berkeley</i>                                    |
| 11:30 | <b>378.4</b> | Multimodal Single Mouse and Human Cell 'omics: Is Variability Distinct Across Cellular Modalities? J.H. Eberwine, <i>Perelman School of Medicine and University of Pennsylvania</i> |
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### 379 **Biochemistry of Autophagy and Organelle Trafficking**

#### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6F

CHAIR: K-L. Guan

- |       |              |                                                                                                                        |
|-------|--------------|------------------------------------------------------------------------------------------------------------------------|
| 10:00 | <b>379.1</b> | Hippo Pathway in Nutrient Response and Cell Growth. K-L. Guan, <i>University of California and San Diego</i>           |
| 10:30 | <b>379.2</b> | Initiation, Targeting and Sculpting of the Phagophore. J.H. Hurley, <i>University of California and Berkeley</i>       |
| 11:00 | <b>379.3</b> | Ampk: Guardian of Metabolism and Mitochondrial Homeostasis. R.J. Shaw, <i>Salk Institute for Biological Studies</i>    |
| 11:30 | <b>379.4</b> | Mirosome and Migrocytosis. L. Yu, D. Jiang, Z. Jiang, A. Meng, <i>Tsing Hua University, People's Republic of China</i> |
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### 380 **Plants Do It All**

#### SYMPOSIUM

**10:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAIR: S. R. Cutler

- |       |              |                                                                                                                                 |
|-------|--------------|---------------------------------------------------------------------------------------------------------------------------------|
| 10:00 | <b>380.1</b> | Engineering Plant Signal Transduction for Water Smart Crops. S.R. Cutler, <i>University of California and Riverside</i>         |
| 10:30 | <b>380.2</b> | Spatiotemporal Phytochrome-Dependent Regulation of Photosynthesis and Growth. B.L. Montgomery, <i>Michigan State University</i> |
| 11:00 | <b>380.3</b> | Discovery and Engineering of Plant Chemistry for Plant and Human Health. E. Sattely, <i>Stanford University</i>                 |
| 11:30 | <b>380.4</b> | Genome Editing and Plant Agriculture. D. Voytas, <i>University of Minnesota</i>                                                 |

### 381 RNA-mediated Epigenetics

#### ISSUES IN DEPTH

10:00 AM – 12:00 PM SAN DIEGO CONVENTION CENTER, ROOM 1AB

- 10:00 381.1 Exploring the Biosynthesis of Hypermodified Bases One Step at a Time. V. Bandarian, *University of Utah*
- 10:30 381.2 The Dynamic Epitranscriptome: Control of mRNA Fate and Function by Nucleotide Modifications. S. Jaffrey, *Weill Cornell Medicine and Cornell University*
- 11:00 381.3 Smrt-Cappable-Seq Reveals Complex Operon Variants in Bacteria. L. Ettwiller, B. Yan, *New England BioLabs Inc.*
- 11:30 381.4 Beyond the Central Dogma: The Trna Epitranscriptome and an Alternative Genetic Code Tune Translation During Stress in Eukaryotes, Prokaryotes and Viral Infections. P. Dedon, *Massachusetts Institute of Technology*

### 382 Signal Transduction, Pathogenesis and Disease

#### SYMPOSIUM

10:00 AM – 12:00 PM SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAIR: K. Orth

- 10:00 382.1 Single Protein-Catalyzed Ubiquitination: Chemistry and Implications in Cell Signaling. Z-Q. Luo, *Purdue University*
- 10:30 382.2 Proteasomal Regulation of Hormone Signaling in Mycobacterium Tuberculosis. K.H. Darwin, *New York University School of Medicine*
- 11:00 382.3 Structure and Signaling Mechanisms of G Protein-Coupled and B-arrestin-Biased Chemokine Receptors. T. Handel, M. Gustavsson, Y. Zheng, B. Stephens, G. Baker, T. Ngo, L. Holden, R. Stevens, V. Cherezov, R. Abagyan, I. Kufareva, *University of California, San Diego, Scripps Research Institute and University of Southern California*
- 11:30 382.4 New Technologies to Interrogate G Protein-Coupled Receptor Signaling. A. Kruse, *Harvard Medical School*

### 383 Structural Biology

#### SEBM SYMPOSIUM

10:00 AM – 12:00 PM SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAIR: T. Thompson

Guest Society: Society for Experimental Biology and Medicine

- 10:00 Molecular Mechanisms in Wnt Signaling. William Weis, *Stanford Univ.*
- 10:25 Talk tba. Vince Luca, *Moffitt Cancer Ctr & Res. Inst.*
- 10:50 Talk tba. Joseph Schlessinger, *Yale Univ.*
- 11:15 Biased Agonism in Receptor Tyrosine Kinase Signaling. Mark Lemmon, *Yale Univ.*
- 11:40 General discussion.

### 349 Job Hunting in Biotech Part 3: Compensation Negotiation for Scientist Position

#### WORKSHOP

10:30 AM – 11:30 AM SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

So you've landed a job offer for an industry scientist position! Now, how do you know if the compensation package is competitive, and how do you ask for more? In this seminar you will learn how to:

- Separate out the typical components of an industry job offer letter, so you know what to ask for
- Determine if an offer is competitive and when to ask for more
- Ask for additional compensation in a way that represents your interests while maintaining positive relationships.

(THIS IS PART 3 OF A 3-PART SERIES. EACH SEMINAR CAN BE TAKEN SEPARATELY BUT TOGETHER THEY PROVIDE COMPREHENSIVE INFORMATION ABOUT THE INDUSTRY JOB SEARCH PROCESS.)

SPEAKER: B. Lindstaedt, *UCSF*

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### 350 **But I Have No Skills! Exploding Myths & Exploring Career Options for PhDs**

#### WORKSHOP

**10:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Are the skills you developed in graduate training really useful outside of the academic lab? Many PhD candidates and postdocs exploring careers beyond the academy assume—incorrectly—that employers will not find them or their skills attractive. In this session you will have the opportunity to identify skills that you currently possess, and also to find career fields that might be a good fit for these skills.

SPEAKER: J. Lombardo, *Med. Col. of Wisconsin and Marquette Univ.*

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### 351 **Translating Your CV into an Effective Resume + LinkedIn Profile**

#### WORKSHOP

**10:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

Now that you've completed the exploration phase, and honed in on your new professional areas of interest, how do you present yourself on paper and in-person as a compelling, credible candidate. This presentation focuses on how to transform your academic CV into an effective resume, as well as, how to write a strong cover letter and prepare for future interviews.

SPEAKER: A. Green, *Univ. of California, Berkeley*

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### 354 **NIH F Awards: Navigating NIH Programs to Advance Your Career**

#### WORKSHOP

**12:00 PM – 1:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

This presentation will focus on the NIH's Ruth L. Kirschstein National Research Service Awards (NRSA). The NRSA research training fellowship (F) awards are targeted to individuals with or seeking research doctoral degrees (Ph.D. and equivalent) and clinical doctoral degrees (M.D. and equivalent). Among the F awards discussed will be the F30, NRSA Individual Predoctoral MD/PhD or Other Dual-Doctoral Degree Fellowship Award, the F31 NRSA Individual Predoctoral Fellowship, the F31 NRSA Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research Award, the F32 NRSA Individual Postdoctoral Fellowship Award, and the NRSA Individual Senior Fellowship Award. The interactive discussion will give attendees an opportunity to ask questions of and obtain insight from an NIH representative on these and other awards available for pre- an postdoctoral fellows and senior investigators.

SPEAKER: M. Matthews, *NIH*

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## **ASBMB Poster Presentations**

#### POSTER SESSIONS

**12:15 PM – 2:15 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALLS A-D

*Refer to pages 106–123 for presentation details.*

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### 384 **ASBMB Meet the Speakers**

#### SOCIETY EVENTS

**12:30 PM – 1:00 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH 1316

Visit the ASBMB Lounge (Exhibit Hall across from ASBMB Booth #1316) to meet the morning presenters and continue the scientific discussion—a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

### 352 **How to Choose Your Ideal Career**

#### WORKSHOP

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

Do you want to find a career path that you'll enjoy and find rewarding? Of course! But HOW do you find such a path, especially since there are so many different directions scientists can go with their careers?

There are more than FIFTY career options available to biomedical sciences PhD's. If you'd like to see a list of these career options, while learning about how to select the best option for you, then don't miss this thought-provoking and interactive workshop! Here you will learn about a logical, step-by-step process for exploring your career options and deciding which will provide the best fit for your own set of skills, values and interests.

SPEAKER: B. Lindstaedt, UCSF

### 353 **Navigating Doctoral Work Protocols/Milestones/ Requirements**

#### WORKSHOP

**1:00 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

Success in graduate school starts with goal setting and the formation of an action plan to achieve desired results— obtaining the degree sought. The graduate study plan should delineate 1) what is to be accomplished in terms of expectations, degree requirements, and program milestones; 2) action steps that establish priorities for tasks to be completed; 3) process for implementing action steps; and 4) timeframe for meeting program requirements and milestones. Session participants will be guided through exercises and provided with templates for developing a graduate program plan. Session topics: Planning in the context of the Graduate School Process, Establishing Realistic Program Goals, Objectives, and Milestones, the Planning Process-Writing and Implementing a Graduate Degree Plan, and Charting Milestones to Monitor Progress and Refine Actions Steps.

SPEAKER: H. Adams, H.G. Adams & Assoc., Norfolk, VA

### 385 **ASBMB Meet the Speakers**

#### SOCIETY EVENTS

**1:30 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, EXHIBIT HALL, ACROSS FROM ASBMB BOOTH I316

Visit the ASBMB Lounge (Exhibit Hall across from ASBMB Booth #I316) to meet the morning presenters and continue the scientific discussion — a GREAT networking opportunity for all. Also visit the daily posters while you're in the exhibit hall.

### 355 **Next Gen PhDs and Careers**

#### WORKSHOP

**2:00 PM – 3:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

There are more career options than ever before for life science PhDs. This session will provide actionable advice on how to determine what career path to pursue and how to best position yourself for your desired career.

SPEAKER: P. Clifford, Univ. of Illinois at Chicago

### 356 **Career Opportunities in Science Communications**

#### WORKSHOP

**2:30 PM – 3:30 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-3

SPEAKER: E. Hayden, Univ. of California, Santa Cruz

## 386 DNA Damage and Repair

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30A

CHAIR: D. Wang

- 2:30 **High-Resolution Maps of Genome-Wide Human Damage and Repair.** O. Adebali, J. Hu, A. Sancar, *University of North Carolina at Chapel Hill*
- 2:45 **A New Pathway of Transcription-Coupled Repair.** K. Myka, R. Washburn, K. Kusters, M. Gottesman, *Columbia University, Department of Microbiology and Immunology and Columbia University*
- 3:00 **Rad5 Prevents the Accumulation of ssDNA Gaps at Stressed DNA Replication Forks.** G.W. Brown, D.W. Gallo, S. Kim, Z. Zhang, D. Branzei, *University of Toronto, Canada and International Foundations of Medicine, Italy*
- 3:15 **RecQ4 Helicases Stimulate Nuclease Activity During DNA Inter-Strand Crosslink Repair.** M.L. Bochman, C.M. Rogers, *Indiana University*
- 3:30 **386.1 Molecular Mechanism of Transcription Transcription-Coupled Repair.** D. Wang, *University of California and San Diego*

## 387 Mechanisms of G Protein Signaling

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAIR: A. M. Lyon

- 2:30 **Coordinated Cross-Talk Between Calcium and Camp in Regulating Pulsatile Insulin Secretion: A Novel Role for the Unique Inhibitory G-Protein,  $G_{\alpha z}$ , in Regulating  $\beta$ -Cell Function.** M. Schaid, J. Harington, H. Wienkes, M. Merrins, M. Kimple, *University of Wisconsin–Madison*
- 2:45 **New Insights into the Role of SmgGds as a Major Integrator of Signaling by Ras and Rho Family Members in Cancer.** C. Williams, P. Gonyo, A. Brandt, O. Koehn, E. Lorimer, B. Unger, S-W. Tsaih, Y. Sun, M. McNally, H. Rui, M. Flister, C. Bergom, *Medical College of Wisconsin*
- 3:00 **Phosphorylation of G Protein  $\gamma$  Subunit Ste18 and the Ste5 Scaffold Form a Braking System that Governs Pathway Activation Kinetics and Switch-Like Signaling in Yeast.** M. Torres, S. Choudhury, P. Baradaran-mashinchi, *Georgia Institute of Technology*
- 3:15 **Plasma Membrane  $\text{Pi}(4,5)\text{p}_2$  Threshold Regulates Chemotactic Signaling Pathways and Cell Morphology.** N. Bawazir, M. Beshay, A. Ring, C. Janetopoulos, *University of the Sciences*
- 3:30 **387.1 Conformational Regulation of Phospholipase C Enzymes.** A. Lyon, E.E. Garland-Kuntz, F.S. Vago, M. Van Camp, M. Sieng, C. Corpstein, A.T. Blaine, W. Jiang, *Purdue University*

## 388 Membrane Lipid Biochemistry

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAIR: J. Burke

- 2:30 **Crystallographic and Enzyme Kinetic Analyses of the Human Inositol Polyphosphate Multikinase (IPMK).** R. Blind, *Vanderbilt University*
- 2:45 **Structure and Function of Lipins: Key Enzymes in Triglyceride Metabolism.** M. Airola, *Stony Brook University*
- 3:00 **A Novel Multi-Domain Phosphatidylinositol Transfer Protein/Oxysterol Binding Protein Senses Specific Phosphoinositide Pools on *Toxoplasma* Dense Granules.** A. Grabon, V.A. Bankaitis, *Texas A&M University*
- 3:15 **Novel Biosensors for an Enigmatic Phosphoinositide.** B. Goulden, J. Zewe, R. Wills, G. Hammond, *University of Pittsburgh*
- 3:30 **Sphingomyelin-Cholesterol Complexes in Plasma Membranes.** S. Endapally, D. Frias, D. Tomchick, A. Radhakrishnan, *The University of Texas Southwestern Medical Center*

## 389 Metabolic Reprogramming

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAIR: J. Ellis

- 2:30** Dynamic Actin Reorganization and Vav/Cdc42-Dependent Actin Polymerization Promote Macrophage Aggregated LDL Uptake and Catabolism. R.K. Singh, A.S. Haka, P. Bhardwaj, F.R. Maxfield, *Weill Cornell Medicine and Cornell University*
- 2:45** Metabolic Reprogramming of Macrophages Exposed to *Pseudomonas Aeruginosa* Biofilm. M. C.B. Ammons, A. Fuchs, V. Copie, *Idaho Veterans Research and Education Foundation and Montana State University*
- 3:00** Distinct Roles of Dietary Fat and Sugar in the Development of Obesity, Insulin Resistance, Atherosclerosis and Cardiac Dysfunction in Ldl Receptor Knockout Mice. L.R. Perazza, N. Daniel, M.J. Dubois, G. Pilon, P. Mitchell, K. Le Quang, D. Lachance, E. Plante, T. Varin, R. Bouchareb, P. Mathieu, Y. Pouliot, S. Gauthier, D. Roy, C. Asselin, M. Blais, M. Lessard, A. Marette, *Laval University, Canada and Sherbrooke University, Canada*
- 3:15** Long Non-Coding RNA HI9 Serves as a Lipid Sensor to Reprogram Hepatic Lipid and Glucose Homeostasis by Interaction with RNA Binding Protein Ptbpl. Z. Yang, C. Liu, J. Wu, D-J. Shin, M. Tran, L. Wang, *University of Connecticut*
- 3:30** Impact of Short- and Long-Term Weight Loss on the Inflammatory Profile of Metabolically Healthy and Unhealthy Obese Patients. M. Clark, F. Barrenäs, M. Rajan, M. Sotak, V. Wallenius, E. Borgeson, *Institute of Medicine, University of Gothenburg, Sweden, Department of Cell and Molecular Biology, Uppsala University, Sweden, Institute of Clinical Sciences and University of Gothenburg, Sweden*

## 390 Metals in Biology

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAIR: A. E. Palmer

- 2:30** PRL Phosphatases Promote Tumor Progression by Regulating the Level of Intracellular Magnesium. S. Hardy, E. Kostantin, S. J. Wang, N. Uetani, M.L. Tremblay, *McGill University, Canada*
- 2:45** Zinc-Mediated Oligomerization of SI00aI2. S.M. Damo, V. Garcia, S. Little, D. Franklin, J.A. Gaddy, *Fisk University and Vanderbilt University*
- 3:00** Heme-Free H-Nox from *Vibrio Cholerae* Is Activated by Oxidation via a Zinc Ligand Switch Mechanism. E. Yukl, K. Chacon, J. Jarvis, *New Mexico State University and Reed College*
- 3:15** ATP as an Allosteric Modulator and Chelator of Fe<sup>3+</sup> from Fe<sup>3+</sup>-Transferrin Is ATP a Major Fe<sup>3+</sup> Carrier. R.E. Cowart, T.B. Shaffer, R.D. O'Hara, J.A. Campbell, L.L. Schneider-Tugan, S.K. Binz, M.A. Pope, R.B. Gregory, *University of Dubuque and Lindenwood University*
- 3:30** A New Membrane Potential ( $\delta\psi$ )-Independent Iron Indicator Selectively Detects Mitochondrial Chelatable Iron but Not Calcium in Living Cells. J. Hu, A-L. Nieminen, A. Kholmukhamedov, C.C. Lindsey, C.C. Beeson, J.J. Lemasters, *Medical University of South Carolina*

## 391 Protein Folding: Every Which Way but Loose

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAIR: J. E. Kim

- 2:30 Modulation of Fluorescent Protein Chromophore to Detect Protein Aggregation. Y. Liu, C. Wolstenholme, G. Carter, C. Hoelzel, L. Grainger, M. Fares, X. Zhang, *Pennsylvania State University*
- 2:45 The Amyloid- $\beta$  Peptide in Alzheimer's Disease: Molecular Interactions and Structure Conversions. A. Gräslund, *Stockholm University, Sweden*
- 3:00 The Disordered Landscape of the 20s Proteasome Substrates and the Mechanism of Their in Vitro and in Vivo Degradation. Y. Shaul, N. Myres, A. Biran, N. Reuven, *Weizmann Institute of Science, Israel*
- 3:15 A Nucleotide-Dependent Switch in Proteasome Assembly Mediated by the Nas6 Chaperone. S. Park, F. Li, V. Sokolova, *University of Colorado Boulder*
- 3:30 Biophysical Analysis of Human Neuropeptide Y: Mutations in the Hairpin Core Reveal Unusual Thermal Stability Linked to Higher-Order Self-Association. M.M. Hopkins, D.L. Bain, *University of Colorado Anschutz Medical Campus*

## 392 Structure and Mechanism in Natural Product Biosynthesis Enzymes

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAIR: A. K. Boal

- 2:30 Transport and Synthesis of a Bacterial Natural Product. L.M. K. Dassama, G.E. Kenney, A.C. Rosenzweig, *Boston Children's Hospital, Dana-Farber Cancer Institute, and Harvard Medical School and Northwestern University*
- 2:45 Comparative Analysis of Bacterial Cytochromes P450 Involved in the Biosynthesis of 16-Membered Ring Macrolide Antibiotics. M.D. DeMars, S. Yang, F. Sheng, N.L. Samora, S. R. Park, A.N. Lowell, K.N. Houk, L.M. Podust, D.H. Sherman, *University of Michigan, University of California, Los Angeles, University of California and San Diego*
- 3:00 Structural Insights into Peptide Recognition and Modification by the Radical SAM Enzyme SuiB. K.M. Davis, *Princeton University*
- 3:15 Biosynthesis of Oxetanocin: Are Two Cofactors Better Than One? J. Bridwell-Rabb, H-w. Liu, A. Zhong, C. Drennan, *University of Michigan, The University of Texas and Massachusetts Institute of Technology*
- 3:30 392.1 A Crystallographic View of the Reaction Cycle in Iron(II) and 2-(Oxo)-Glutarate-Dependent Oxygenases. A.K. Boal, *Pennsylvania State University*

## 393 Tools for Exploring Glycobiology

### SPOTLIGHT SESSION

**2:30 PM – 3:45 PM** SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAIR: K. Godula

- 2:30 Engineering Synthetic Glycan Co-Receptors Into the Glycocalyx of Muscle Cells to Control Early Stages of Neuromuscular Junction Development. K. Godula, *University of California and San Diego*
- 2:45 Encoding and Estimating the Remarkable Diversity of Possible Sialyltrisaccharides in Nature. A. Sasmal, Z. Khedri, S. Diaz, N. Lewis, A. Varki, *University of California and San Diego*
- 3:00 System Metaglycomes: Mapping Dynamic Cell Surface N-Glycome, O-Glycome and Glycolipidome by Mass Spectrometry. M. Barboza, M. Wong, J. Luke, Z. Cheng, G. Xu, M. Gareau, H. Raybould, C.B. Lebrilla, *University of California and Davis*
- 3:15 Glycosense<sup>tm</sup>: A Rapid Method for Monitoring *in Vitro* Glycoengineering. L. Yang, M.J. Saunders, K.N. Samli, R.J. Woods, *Lectenz Bio and University of Georgia*
- 3:30 393.1 Synthesis of Bioorthogonal Muramyl Glycans That Illuminate and Track Bacterial Peptidoglycan. K.E. DeMeester, H. Liang, Z. Jones, J.A. Taylor, M.S. Siegrist, N.R. Salama, C.L. Leimkuhler-Grimes, *University of Delaware, Fred Hutchinson Cancer Research Center and University of Massachusetts Amherst*

### 357 Global Interview Skills: A Practice Workshop for International Candidates

#### WORKSHOP

**3:00 PM – 4:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-1

This interview practice workshop is customized for international job candidates. The key topics are: The four central questions in virtually every employment interview, understanding cultural and communication dynamics, the STAR method, and how to use “small talk” for big results.

SPEAKER: D. Behrens, *Univ. of California, Berkeley*

### 358 The Strategic Postdoc: How to Find & Leverage Your Postdoc Experience

#### WORKSHOP

**3:00 PM – 4:00 PM** SAN DIEGO CONVENTION CENTER, HALL D, CRC-2

Many PhDs just kind of fall in to a postdoc, rather than thinking about it from a strategic perspective. Your postdoc is never an end in itself; rather it's a means to another end whether that goal is a faculty position at a research university, a small college, national lab, or perhaps an industry job. Learn how to find postdoc opportunities that will best prepare you for that next step, and how to use your postdoc experience to facilitate the transition to your next position.

SPEAKER: A. Green, *Univ. of California, Berkeley*

### 394 Novel Antibiotics & Alternatives

#### SEBM SYMPOSIUM

**3:00 PM – 5:00 PM** SAN DIEGO CONVENTION CENTER, ROOM 14A

CHAIR: D. Hassett

Guest Society: Society for Experimental Biology and Medicine

- 3:00** A non-toxic “two-headed monster” that kills all bacteria. Dan Hassett, *Univ. of Cincinnati*
- 3:25** Predatory Bacteria Our New Ally in the Fight Against Infection. Daniel Kadouri, *Rutgers Univ.*
- 3:50** Antibiotic Adjuvants Based Upon Marine Natural Products. S. Martin, *NC State Univ.*
- 4:15** New Drugs for Old Bugs. Vanessa Sperandio, *UT Southwestern Med. Ctr.*
- 4:40** General discussion.

### 395 Cell Stress, Autophagy and Mitophagy

#### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 31C

CHAIR: F. Zhang

- 4:00** IL-6 and Bile Acids Are Skin-Derived Factors That Regulate Whole-Body Metabolism in SCD1 Deficient Mice. S.N. Dumas, C-A. Guo, J.M. Ntambi, *University of Wisconsin–Madison*
- 4:15** Posttranslational Arginylation Enzyme Atel1 Is a Mitochondrial-Derived Master Regulator That Coordinates Glycolysis and Respiration in the Warburg Effect. F. Zhang, C. Jiang, D. Patel, B. Moorthy, A. Kumar, M. Birnbaum, J. Huang, A. Barrientos, T. Lampidis, F. Fontanesi, *University of Miami*
- 4:30** Autophagy Modulates Lipid Metabolism to Support Liver Kinase B1 (Lkb1)-Deficient Lung Tumor Growth. V.D. Bhatt, Z. Hu, X. Su, J. Y. Guo, *Rutgers University*
- 4:45** Zylamend Induces Apoptosis in Pancreatic Cancer Cells via Modulation of Endoplasmic Reticulum Stress and Autophagy. D. Puckett, D. Alani, S. Chahed, V. Frankel, J. Whelan, A. Bettaieb, *University of Tennessee and Knoxville*
- 5:00** Oleic Acid Protected Pancreatic  $\beta$ -Cell Against Saturated Fatty Acid Induced Lipotoxicity. X. Liu, X. Chen, L. Li, R. Luo, D. Long, Y. Lu, Y. Chen, *West China Hospital and Sichuan University, People's Republic of China*

## 396 Chromatin, Replication and Repair

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 31B

CHAIR: S. Forsburg

- 4:00 Heterochromatin Proteins Influence the Choice of DNA Repair in Euchromatin Domains. S. Forsburg, A. Jensen, C. Jones, T-T. Li, J-P. Yuan, *University of Southern California*
- 4:15 Rad53p Activation Alters Chromatin Structure, Induces Respiration and Elevates Cellular Atp Level. P. Bu, A. Shah, J. Zeng, M.S. Bhagwat, S. Nagar, A. Vancura, *St. John's University*
- 4:30 Analysis of Corest Complex-Chromatin Interactions with Chemical Tools. M. Wu, D. Hayward, J.H. Kalin, Y. Song, J. Schwabe, P.A. Cole, *Brigham and Women's Hospital and Harvard Medical School, Johns Hopkins University School of Medicine and University of Leicester, United Kingdom*
- 4:45 Structure of Eukaryotic Cmg Helicase at a Replication Fork and Implications for Replisome Architecture and Origin Initiation. Z. Yuan, R. Georgescu, B. Lin, R.d. L. A. Santos, D. Zhang, O. Yurieva, M. O'Donnell, H. Li, *Van Andel Institute and Rockefeller University*
- 5:00 396.1 Deconstructing Lagging-Strand Synthesis *in Vivo*. D. Smith, *New York University*

## 397 Engineering Biology

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 31A

CHAIR: A. Chatterjee

- 4:00 Engineering Yeast Endosymbionts as a First Step Towards Laboratory Evolution of Mitochondria. A. Mehta, L. Supekova, F. Supek, P. Schultz, *Scripps Research Institute and The Genomics Institute of the Novartis Research Foundation*
- 4:15 Base Editing: Chemistry on the Genome. A.C. Komor, *University of California and San Diego*
- 4:30 Identifying the Substrate Proteins of E3 Ubiquitin Ligase by Orthogonal Ubiquitin Transfer (OUT). J. Yin, Y. Wang, K. Bhuripanyo, G. Chen, L. Zhou, R. Liu, H. Zhou, *Georgia State University*
- 4:45 Mini-Ins: A Monomeric Human Insulin Inspired from Cone Snail Venom Peptides. D. Chou, *University of Utah*
- 5:00 397.1 Development and Applications of Universal Platforms for Genetic Code Expansion. A. Chatterjee, J.S. Italia, *Boston College*

## 398 High-throughput Methods for Connecting Transcriptomes, Proteomes, and Secretomes

### SPOTLIGHT SESSION

4:00 PM – 5:15 PM SAN DIEGO CONVENTION CENTER, ROOM 30E

CHAIR: S. Zhong

- 4:00 A System for Global Analysis of Correlation Between Protein Expression and mRNA. K. Johnson, S. Zhong, *University of California and San Diego*
- 4:15 Interactome Mapping of the Pathogen *Helicobacter Pylori* Using All-vs-All Sequencing (Ava-Seq). S. Ramadan, S. Andrews, N. Al-Thani, I. Ahmed, J. Malek, *Weill Cornell Medicine-Qatar, Qatar*
- 4:30 Genome-Scale Reconstructions of the Mammalian Secretory Pathway Predict Metabolic Costs and Limitations of Protein Synthesis and Secretion. N. Lewis, *University of California and San Diego*
- 4:45 Functional Somatic Noncoding ncRNA of Extracellular Vesicles (EV) for Vascular Epigenetics: A Genomic Crossword Puzzle in Adaptation of Cells Under Stress. J.H. Wissler, *ARCONS Institute for Applied Research and Didactics, Germany*
- 5:00 Localized Single Transcript Detection of EML4-ALK in NSCLC Using Co-Localization Quantum Dot Fluorescent in Situ Hybridization (Coqfish). N. Huang, Y. Jiang, S. Zhong, *University of California and San Diego*

## 399 Molecular Basis of Signaling

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30D

CHAIR: K. Gehring

- 4:00 Regulation of Mitophagy by the Parkin Ubiquitin Ligase and Pink1 Ubiquitin Kinase. K. Gehring, *McGill University, Canada*
- 4:15 Protein Kinase C $\alpha$  (PKC $\alpha$ ) Gain-of-Function Variant in Alzheimer's Disease Displays Enhanced Catalysis by a Mechanism That Evades Down-Regulation. J. Callender, Y. Yang, N. Stephenson, A. Jones, J. Brognard, A. Newton, *University of California, San Diego, Cancer Research UK Manchester Institute, United Kingdom, National Cancer Institute at Frederick and National Institutes of Health*
- 4:30 Novel Crystal Structure of Calcium Independent Phospholipase Ipla2 $\beta$ : Mechanism of Activity Regulation and Membrane Localization. S. Korolev, O. Koroleva, K. Malley, *Saint Louis University School of Medicine*
- 4:45 Chemoproteomic discovery of ligand binding hotspots in the lipid kinome. K. Hsu, *University of Virginia*
- 5:00 Sac1 Degrades Its Lipid Substrate Ptdins4P in the Er to Maintain a Steep Electrochemical Gradient on Donor Membranes. G. Hammond, J. Zewe, S. Sangappa, R. Wills, B. Goulden, *University of Pittsburgh*

## 400 Nutrition, Genetics and Metabolism

### SPOTLIGHT SESSION

**4:00 PM – 5:15 PM** SAN DIEGO CONVENTION CENTER, ROOM 30C

CHAIR: C-L. E. Yen

- 4:00 Decreased Consumption of Specific Dietary Macronutrients Restores Metabolic Health to Diet-Induced Obese Mice. D.W. Lamming, N.E. Cummings, H. Pak, E.M. Williams, E.N. Konon, M.M. Walter, M.E. Barnes, D. Yu, *University of Wisconsin–Madison*
- 4:15 400.1 Leveraging Mouse Liver Co-Expression Networks and Human Lipid GWAS Data to Identify and Validate Cholesterol Metabolism Genes. B.W. Parks, Z. Li, J. Nguyen, F. Leyva-Jaimes, *University of Wisconsin–Madison*
- 4:30 Selenium and Sex: Competition Between Brain and Testes for Selenium Results in Male-Specific Consequences in Mice and Men. M.J. Berry, M. Pitts, P. Kremer, A. Hashimoto, L. Seale, A. Ogawa-Wong, D. Torres, *University of Hawaii*
- 4:45 Long-Chain Acyl-CoA Synthetase 6 Deficiency Reduces the Omega-3 Fatty Acid DHA in the Brain and Disrupts Motor Control. J.M. Ellis, R.F. Fernandez, Y. Zhao, J.L. Counihan, D.K. Nomura, J.A. Chester, *Purdue University and University of California*
- 5:00 400.2 Triacylglycerol Synthesis, Energy Metabolism, and Glucose Homeostasis: A Gut Reaction? C-L E. Yen, D. Nelson, M-I. Yen, D. Amador-Noguez, K. Veldkamp, *University of Wisconsin–Madison*

## 401 Ribosomes and Translational Regulation

## SPOTLIGHT SESSION

**4:00 PM – 5:15 PM**      SAN DIEGO CONVENTION CENTER, ROOM 30B

CHAIR: S. Vasudevan

- |      |                                                                                                                                                                                                                                                                                                                                                                                       |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4:00 | <b>High Throughput Discovery of Novel Regulators of Human Ribosome Biogenesis.</b> S.J. Baserga, K.I. Farley-Barnes, K. McCann, L. Ogawa, J. Merkel, Y. Surovtseva, <i>Yale University School of Medicine, Yale School of Medicine and National Institute of Environmental Health Sciences, National Institutes and Yale West Campus</i>                                              |
| 4:15 | <b>Pervasive, Coordinated Protein Level Changes Driven by Transcript Isoform Switching.</b> G. Brar, G. Otto, Z. Cheng, E. Powers, A. Keskin, M. Jovanovic, <i>University of California, Berkeley and Columbia University</i>                                                                                                                                                         |
| 4:30 | <b>Regulation of Protein Translation Initiation by Estrogen.</b> M.K. Holz, <i>Yeshiva University</i>                                                                                                                                                                                                                                                                                 |
| 4:45 | <b>A Post-Transcriptional Program of Chemoresistance Regulators in Quiescent Cancer Cells.</b> S. Vasudevan, S. Lee, S.I. A. Bukhari, S.S. Truesdell, M. Boukhali, D. Lee, M.A. Mazzola, R. Raheja, A. Langenbucher, N.J. Haradhvala, M. Lawrence, R. Gandhi, D. Sweetser, W. Haas, <i>Massachusetts General Hospital and Harvard Medical School and Brigham and Women's Hospital</i> |
| 5:00 | <b>Novel <i>in-Vitro</i> Tag-and-Modify Protein Sample Generation Methods for Multiplexed Single-Molecule FRET Screening.</b> K.M. Hamadani, N. Hite, J.J. Howe, <i>California State University and San Marcos</i>                                                                                                                                                                    |
| 5:15 | <b>How ribosomes stop protein synthesis without a stop codon.</b> H. Jin, <i>University of Illinois at Urbana-Champaign</i>                                                                                                                                                                                                                                                           |

## 402 **ASBMB Women Scientists Mentoring and Networking Event**

## SOCIETY EVENTS

**5:30 PM – 7:30 PM** SAN DIEGO CONVENTION CENTER, ROOM 6A

CHAIRS: K. Allen, K. Ten Hagen, S. Baserga

Join us in discussing strategies for career advancement and how to successfully promote oneself. We will also discuss ideas about the formation of a new advocacy group within the ASBMB to promote the career trajectories and professional growth of all women biochemists at all career stages (Women in Biochemistry and Molecular Biology or WIBMB).

*All ASBMB members and biochemistry registrants welcome.*



# WAKE-UP! It's Trivia Time

*Calling all trivia junkies!*  
*Join your colleagues for a daily*  
*dose of trivia, music, fun & prizes!*

**Tuesday**

# WEDNESDAY

## APRIL 25

### 471 **Wake-Up! It's The Last Day for Trivia Time**

#### SOCIETY EVENTS

**7:00 AM – 7:45 AM** SAN DIEGO CONVENTION CENTER, ROOM 6C

You've competed on Sun, Mon and Tues. Way to go! Don't miss out on our final trivia challenge for 2018! Join your colleagues in a new room on Wed morning, **Room 6C!** ASBMB members and biochemistry registrants welcome.

*Space is limited with first come, first served.*



### 472 **Bert and Natalie Vallee Award in BioMedical Science**

#### LECTURE

**8:00 AM – 8:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6C

8:00 Awardee introduction

8:05 **472.1** How Telomeres Solve the Chromosome End-Protection Problem. T. de Lange, *Rockefeller University*

### 473 **William C. Rose Award**

#### LECTURE

**8:30 AM – 9:00 AM** SAN DIEGO CONVENTION CENTER, ROOM 6C

8:30 Awardee introduction

8:35 **473.1** What Can Protein Methylation Tell Us About Histones, Ribosomes, Translation Factors and the Biology of Cancer and Aging? S.G. Clarke, *University of California and Los Angeles*

### 470 **One-on-One Resume Critique/CV, Career Counseling, Essay Personal Statement Assessments**

#### WORKSHOP

**9:00 AM – 12:00 PM** SAN DIEGO CONVENTION CENTER, SAILS PAVILION

9:00 **One-on-One Sessions.** J. Blumenthal, D. Behrens, *Montgomery Col., Rockville, MD and Univ. of Maryland Univ. Col., Adelphi, MD, Univ. of California, Berkeley*

### 474 **Biochemical Basis for Epigenetics and Chromatin Remodeling**

#### SYMPOSIUM

**9:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6D

CHAIR: B. A. Garcia

9:30 **474.1** Quantitative Proteomics for Understanding Modified Proteins and Proteomes. B.A. Garcia, *Perelman School of Medicine and University of Pennsylvania*

10:00 **474.2** Reading Epigenetic Marks. T.G. Kutateladze, *University of Colorado School of Medicine*

10:30 **474.3** Misregulation of Polycomb Repressive Complexes by Oncohistones. P.W. Lewis, *University of Wisconsin–Madison*

11:00 **474.4** Painting Chromatin with Synthetic Protein Chemistry. T.W. Muir, *Princeton University*

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## 475 Enzyme Dynamics in Catalysis, Spectroscopy and Theory

### SYMPOSIUM

**9:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 1A

CHAIR: S. Hammes-Schiffer

- 9:30 **475.1** Proton-Coupled Electron Transfer in Soybean Lipoxygenase: Hydrogen Tunneling, Electrostatics, and Conformational Motions. S. Hammes-Schiffer, *Yale University*
- 10:00 **475.2** Seeing the Invisible by Nmr Spectroscopy. L.E. Kay, *University of Toronto, Canada*
- 10:30 **475.3** Two Dimensional Infrared Spectroscopic Investigations of Protein and Enzyme Dynamics. M.D. Fayer, *Stanford University*
- 11:00 **475.4** Picosecond Active-Site Dynamics Correlate with the Temperature Dependence of KIEs in Enzyme-Catalyzed Hydride Transfer. C. Cheatum, *University of Iowa*

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## 476 Metabolomics and Lipidomics

### SYMPOSIUM

**9:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 6C

CHAIR: D. Nomura

- 9:30 **476.1** Chemical-Proteomic Strategies to Investigate Reactive Cysteines. E. Weerapana, *Boston College*
- 10:00 **476.2** Understanding the Interplay Between Amino Acid and Lipid Metabolism in Tumor Growth. C. Metallo, *University of California and San Diego*
- 10:30 **476.3** Shrinking the Metabolome for Systems Biology Reveals a New Metabolic Function of an Old Protein. G. Patti, *Washington University in St. Louis*
- 11:00 **476.4** Redefining Druggability Using Chemoproteomic Platforms. D. Nomura, *University of California and Berkeley*

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## 477 Metals in Biology

### SYMPOSIUM

**9:30 AM – 11:30 AM** SAN DIEGO CONVENTION CENTER, ROOM 1B

CHAIR: A. E. Palmer

- 9:30 **477.1** Heme Sensor Proteins for Nitric Oxide: A Versatile Use of Captive Iron. M.A. Marletta, *University of California*
- 10:00 **477.2** Regulation of Iron Metabolism by [2Fe-2S]-Binding Glutaredoxins. C.E. Outten, *University of South Carolina*
- 10:30 **477.3** The Struggle for Metal at the Host-Pathogen Interface. E. Skaar, *Vanderbilt University Medical Center*
- 11:00 **477.4** Discovery of New Roles for Zinc in Biology from Quantitative Mapping of Zinc in Mammalian Cells. A. Palmer, *University of Colorado Boulder*

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## ASBMB Late-breaking Poster Presentations

### POSTER SESSIONS

**11:45 PM – 2:00 PM** SAN DIEGO CONVENTION CENTER, SAILS PAVILION

Refer to pages 124–131 for presentation details.

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## 478 ASBMB Meet the Speakers

### SOCIETY EVENTS

**12:00 PM – 12:30 PM** SAN DIEGO CONVENTION CENTER, SAILS PAVILION

Visit with the morning presenters in our new location, the Sails Pavilion, next to the ASBMB Late-breaking poster session. This is a GREAT networking opportunity for all, a chance to continue the scientific discussion and take in the late-breaking posters as the ASBMB Annual Meeting 2018 program comes to a close.

# ASBMB Posters

## SUNDAY APRIL 22 ASBMB Poster Sessions

### EXHIBIT HALL

Poster set up by: 9:00 AM    Poster display: 9:00 AM – 4:00 PM    Poster removal: 4:00 – 6:00 PM

### Author at boards:

# ending in 0, 3 or 6: 12:15 – 1:00 PM    # ending in 1, 4, 7 or 9: 12:45 – 1:30 PM    # ending in 2, 5, or 8: 1:30 – 2:15 PM

BOARD NUMBER	SESSION TITLE	BOARD NUMBER	SESSION TITLE
<b>1 – 17</b>	Genome Dynamics: DNA Replication, Repair and Recombination	<b>345 – 366</b>	Bacteria and Parasites: From Microbiome to Antibiotics
<b>18 – 32</b>	Chromatin Structure, Remodeling and Gene Expression	<b>367 – 405</b>	BMB Education and Professional Development
<b>33 – 47</b>	Histone Modifications	<b>406 – 429</b>	Metabolism and Bioenergetics
<b>48 – 67</b>	Non-coding RNAs	<b>431 – 439</b>	Plant Metabolism and Biosynthetic Pathways
<b>68 – 115</b>	Protein Synthesis, Structure, Modifications and Interactions	<b>440 – 456</b>	Oxidative Stress and Reactive Oxygen
<b>116 – 147</b>	Structural Dynamics of Enzymes	<b>457 – 477</b>	Regulation of Lipid Metabolism
<b>148 – 156</b>	Cytochrome P450	<b>478 – 488</b>	Lipid Signaling
<b>157 – 190</b>	Chemical Biology, Drug Discovery and Bioanalytical Methods	<b>489 – 502</b>	Membrane Domains, Rafts, Transporters and Channels
<b>191 – 215</b>	Drug Screening and Development	<b>503 – 532</b>	Organelles and Trafficking
<b>216 – 231</b>	Genomics	<b>533 – 553</b>	Mitochondria in Health and Disease
<b>232 – 344</b>	Signal Transduction and Cellular Regulation	<b>554 – 576</b>	Glycans and Glycobiology (I)

## Genome Dynamics: DNA Replication, Repair and Recombination

**B1 522.1** RecQ4 Helicases Stimulate Nuclease Activity During DNA Inter-Strand Crosslink Repair. M.L. Bochman, C.M. Rogers, *Indiana Univ.*

**B2 522.2** The Highly Conserved Proteins Nucleolin and Sub1 Play Critical Roles in Regulating G4 DNA-Induced Genome Instability. N. Kim, *The Univ. of Texas HSC at Houston*

**B3 522.3** Identification of Genes Involved in Low Temperature Growth of *Cronobacter Sakazakii* Atcc 29544. J. Liu, S.T. Hong, *Dept. of BioMed. Sciences and Inst. for Med. Science, Republic of Korea*

**B4 522.4** Nelf-E and Cdy11: Two Novel Players for Switching off Transcription at DNA Damage Sites. N. Ayoub, S.V. Awwad, E.R. Abu-Zhaya, B.M. Ben-Oz, N.-R. Guttman-Raviv, *Technion, Israel*

**B5 522.5** Expanding the Role of FDOI in Yeast Chromosomal Biology. M. Seman, T. Hoggard, C. Fox, *Univ. of Wisconsin-Madison*

**B6 522.6** Role of Homology and DNA Double-Strand Breaks in Initiation of Intrachromosomal Recombination in Mammalian Cells. A.S. Waldman, K.M. Chapman, M.M. Wilkey, K.E. Potter, B.C. Waldman, *Univ. of South Carolina*

**B7 522.7** Molecular Insights into Replication-Associated Genome Instabilities Caused by CST Deficiency. W. Chai, *Washington State Univ.*

**B8 522.8** Tyr1 Phosphorylation of RNA Polymerase II CTD Directs and Expands the CTD Code. J.E. Mayfield, M.R. Mehaffey, S. Irani, L. Walker, M. Robinson, N.T. Burkholder, N. Prescott, K. Kathuria, J.S. Brodbelt, Y. J. Zhang, *UCSD and The Univ. of Texas at Austin*

**B9 522.9** A Novel Role of the Human Cst Complex in Regulating the DNA Damage Response. J.A. Stewart, S.M. Ackerson, *Univ. of South Carolina*

**B10 522.1** Non-Canonical DNA in the C-Myc Hotspot Region. K. Long, S.M. Kerwin, W. David, *Texas State Univ.*

**B11 522.11** Cell Cycle Re-Entry from Quiescence Promotes Genome Instability. J.P. Matson, J. Limas, J. Perez, K. Kedziora, J.G. Cook, *Univ. of North Carolina at Chapel Hill*

**B12 522.12** Plant Pcr Inhibitor Release as a Function of Sample Dissociation Method. B. Esparro, Z. Morehouse, C. Proctor, J. Atwood, *Omni InterNat'l.*

**B13 522.13** Cdt1 Variants Offer Novel Insights into Cdt1-Mcm Interactions and an Unexpected Mechanism for Cyclin A to Block DNA Re-Replication. P.N. Pozo, Y. Cole, J. Matson, Y. Zhuo, B. Temple, J.G. Cook, *Univ. of North Carolina at Chapel Hill*

**B14 522.14** Assembly of Fragment Ends After Pcr: An Efficient and Accurate Multi-Part DNA Assembly Method for Large DNA Sequence. Y. Lin, *The Univ. of Texas HSC at Houston*

**B15 522.15** Scraping the Tip of ZIP1's Role in Meiotic Chromosome Dynamics: Using LacO/LacI Corecruitment to Identify Crossover Promoting Factors That Interface with the N-Terminus of a Synaptonemal Complex Protein. A. Feil, A. DeMuyt, V. Borde, K. Voelkel-Meiman, A. MacQueen, *Wesleyan Univ. and Institut Curie, France*

**B16 522.16** Investigation into the Binding Interactions of *Saccharomyces Cerevisiae* Histone H1 with Holliday Junction. C. Little, S. Lahiri, C. Hebner, S. Holmes, I. Mukerji, *Wesleyan Univ.*

**B17 522.17** The Long and Short of Synaptonemal Complex Assembly: Investigating the Genesis and Functional Relevance of a Smaller Zip1 Isoform. A. Shames, A.J. MacQueen, *Wesleyan Univ.*

## Chromatin Structure, Remodeling and Gene Expression

**B18 523.1** Regulation of Monoallelic Tert Expression in Cancer Cells with Wildtype Promoters. T.J. Rowland, T.R. Cech, *Dept. of Chemistry and Biochemistry, Univ. of Colorado BioFrontiers Inst. and Howard*

**B19 523.2** Determining the Enhancer Proteomes in Primary Cells and Native Tissue. D. Steger, D. Cohen, J. Remsburg, S. Sidoli, B. Garcia, *Univ. of Pennsylvania*

**B20 523.3** Histone Chaperone Nap1 Facilitates Histone Dynamics in the Nucleosome. T.-H. Lee, J. Lee, *Pennsylvania State Univ.*

**B21 523.4** Revealing Chromatin State Organization on the Single-Molecule Scale. B. Fierz, *École Polytechnique Fédérale de Lausanne, Switzerland*

**B22 523.5** Diet Restriction Induces Heat Shock Gene Expression While Tempering Heat Stress Response in *Drosophila Melanogaster*. J.W. Tresser, M. Bliss, H. Mayweather, E. Rustand, A. Sears, B. Varamini, *Biola Univ.*

**B23 523.6** DNA Binding Kinetics of CTCF *in Vitro*. A.L. Sanborn, R.D. Kornberg, *Stanford Univ.*

**B24 523.7** Fat Nucleosome: Role of Lipids on Chromatin. G.M. Santos, K. Teles, C. Ribeiro, V. Fernandes, *Universidade de Brasília, Brazil*

**B25 523.8** Genome-Wide Analysis of Bromodomain Histone Di-Acetylsine Ligands. S. Signorelli, D. Gerrard, K. Glass, S. Fietze, *Univ. of Vermont and Albany Col. of Pharmacy and Health Sciences*

**B26 523.9** Structure-Based Design of Nucleosome Binding Peptides for Controlling Cell Function. K.A. Teles, G.M. Santos, *Univ. of Brasília, Brazil*

**B27 523.1** Chemically Altered Epigenetic Landscape: Transcriptional Reprogramming at Precise Space and Time. K. Islam, *Univ. of Pittsburgh*

**B28 523.11** Rad53p Activation Alters Chromatin Structure, Induces Respiration and Elevates Cellular Atp Level. P. Bu, A. Shah, J. Zeng, M.S. Bhagwat, S. Nagar, A. Vancura, *St. John's Univ.*

**B29 523.12** The Role of Epigenetic Factors in Age-Dependent Changes in *Drosophila Melanogaster* Visual Behavior and Photoreceptor Neuron Gene Expression. S. Escobedo, *Purdue Univ.*

**B30 523.13** Histone Deacetylase Inhibition Leads to Dose-Dependent Suppression of Oncogene-Associated Super-Enhancers. G. Wheeler, G. Sanchez, X. Liu, *Univ. of Colorado Boulder*

**B31 523.14** Jarid2 Regulates Skeletal Muscle Differentiation Through Regulation of Canonical Wnt Signaling Pathway. A. Adhikari, J. Davie, *Southern Illinois Univ. Sch. of Med.*

**B32 523.15** Set4 Promotes Survival During Oxidative Stress Through Regulation of Stress Response Genes. K. Tran, Y. Jethmalani, D. Jaiswal, E.M. Green, *Univ. of Maryland and Baltimore County*

## Histone Modifications

**B33 524.1** Fih Is an Oxygen Sensor for G9a/glp-Driven Epigenetic Regulation of Metastasis-Related Genes in Ovarian Cancer. J. Kang, J.-W. Park, *Col. of Med. and Seoul Nat'l. Univ., Republic of Korea*

**B34 524.2** 1000 Ways to Die: Synthetic Lethality with an Hdac. K. Alexandre, E. Hodges, K. Ciccaglione, M. Law, *Rowan Univ. Sch. of Osteopathic Med. and Rowan Univ. Graduate Sch. of BioMed. Science*

**B35 524.3** Determining the Role of the Epigenetic Factor Set4 in Antifungal Drug Resistance in Budding Yeast. A. Gress, N. Serratorre, S.D. Briggs, *Purdue Univ.*

**B36 524.4** Construction of Chimeric Histone Methyltransferase Complexes in *Saccharomyces Cerevisiae* Generate Unique Phenotypes and Clarify the Roles of Mll1 and Set1 Complex Accessory Proteins. R.J. Chosed, D. Klein, E. Longan, M. Baker, S. Gogoli, J. Wang, S. Alkoutami, *Univ. of South Carolina Sch. of Med.-Greenville and Furman Univ.*

**B37 524.5** Enhancer Epigenomic Regulation in Differentiation, Development and Cancer. K. Ge, *Nat'l. Inst. of Diabetes and Digestive and Kidney Diseases and Nat'l. Insts. of Health*

**B38 524.6** Inhibition of Hdac1 and 2 Modulates the Expression and Signaling of Natriuretic Peptide Receptor A in Male and Female Gene-Targeted Mutant Mice. P. Kumar, C. Nguyen, R. Samivel, M. Bloodworth, K.N. Pandey, *Tulane Univ. Health Sciences Ctr. and Sch. of Med.*

**B39 524.7** Analysis of Core Complex-Chromatin Interactions with Chemical Tools. M. Wu, D. Hayward, J.H. Kalin, Y. Song, J. Schwabe, P.A. Cole, Brigham and Women's Hosp. and Harvard Med. Sch., Johns Hopkins Univ. Sch. of Med. and Univ. of Leicester, United Kingdom

**B40 524.8** Biochemical Characterization of the Set1 H3K4 Methyltransferase Complexes. J. Kim, Korea Advanced Inst. of Science and Technology, Republic of Korea

**B41 524.9** Structural Basis for H2B Monoubiquitylation by Bre1 and Rad6. K. Hyun, X. Su, H. Li, J. Kim, Korea Advanced Inst. of Science and Technology, Republic of Korea and Tsing Hua Univ., People's Republic of China

**B42 524.1** The H3K36 Histone Methyltransferase SETD2 as a Target of Leukemogenic Chemicals: Molecular and Cellular Studies. J. Berthelet, R. Duval, L.-C. Bui, C. Mathieu, E. Petit, J.-M. Dupret, F. Guidez, C. Chomienne, F. Rodrigues-Lima, BFA RMCX, Université Paris Diderot, Nat'l. Ctr. for Scientific Res. UMR 8251, France, Université Paris Diderot, Institut Universitaire d'Hématologie and INSERM UMR\_S1131, France

**B43 524.11** Salt Bridge Formation Within the Rks Motif of Histone H3 Detected by Nmr Spectroscopy. Z.M. Estrada-Tobar, D. Fuentes, C.I. Zurita-Lopez, California State Univ. and Los Angeles

**B44 524.12** Cell Death by Gold Nanoparticles in Mda-Mb-231 Cells Involves Different Epigenetic Alterations: Role of Surface Charge. S.K. Surapaneni, S. Bashir, K. Tikoo, Nat'l. Inst. of Pharmaceutical Education and Res., India

**B45 524.13** Stoichiometry of Multi-Protein Complexes Containing Rtt109, Yps75, and Histone H3-H4. S. D'Arcy, N. Akhavantabib, D. Krzizike, The Univ. of Texas at Dallas and Fox Chase Cancer Ctr.

**B46 524.14** Elucidating Epigenetic Readers of H3t45ph in *S. cerevisiae*. P. Grant, C. Lee, M. Pray-Grant, S. Bekiranov, Univ. of Virginia Sch. of Med.

**B47 524.15** Discovering and Exploiting Selectivity in BET Tandem Bromodomain Recognition of Epigenetic Lysine Acylation. B.C. Smith, M.D. Olp, D.J. Sprague, Med. Col. of Wisconsin

## 525

### Non-coding RNAs

**B48 525.1** Quantitative Analysis of Lncrna from Human Ff and Ffpe Brain Speimens. Y. Lv, Y. Rao, W. Dong, Shanghai Univ. of Med. and Health Sciences, People's Republic of China

**B49 525.2** Mapping RNA-Chromatin Interactions. S. Zhong, B. Sridhar, M. Rivas-Astroza, T.C. Nguyen, W. Chen, Z. Yan, X. Cao, L. Hebert, UCSD

**B50 525.3** Critical RNA Structures Involved in Translation Initiation Mechanism Between 3' Cite and 5' Utr of RNA2 of Blackcurrant Reversion Nepovirus (Brv). S.-W.M. Bean, L.D. Baquero Galvis, E.J. Morrison, M.E. Filbin-Wong, Metropolitan State Univ. of Denver

**B51 525.4** Importance of Unique Secondary Structures in Genomic RNA 3' Cite in Blackcurrant Reversion Nepovirus Translation. L.D. Baquero Galvis, E. Shields, M.E. Filbin-Wong, Metropolitan State Univ. of Denver

**B52 525.5** LncRNA GAS8-AS1 Directs Epigenetic Modulation and Activation of the Tumor Suppressor GAS8 via MLL1/WDR5 to Suppress Hepatocarcinogenesis. M. Yang, Shandong Cancer Hosp. affiliated to Shandong Univ., People's Republic of China

**B53 525.6** A Novel Angiotensin II Induced Long Non-Coding RNA Giver Regulates Oxidative Stress, Inflammation, and Proliferation in Vascular Smooth Muscle Cells. E. Zhang, S. Das, V. Amaram, M.A. Reddy, A. Leung, Z. Chen, P. Senapati, K. Stapleton, H. Oh, M. Kato, M. Wang, L. Lanting, Q. Guo, X. Zhang, B. Zhang, H. Zhang, Q. Zhao, W. Wang, Y. Wu, R. Natarajan, Beckman Res. Inst. at City of Hope, State Key Lab. of Cardiovascular Disease, Fuwai Hosp. and Nat'l. Ctr. for Cardiovascular D, People's Republic of China

**B54 525.7** Rift Valley Fever Virus Nucleocapsid Protein Binds to C/d Box Motifs of Snorna. M. Hayashi, K.E. Hornak, J.-M. Lachy, J.S. Lodmell, Univ. of Montana

**B55 525.8** Identifying Regulatory Targets of the Small RNA Mts in *Vibrio Cholerae*. S.I. Mendez-Contreras, M. Tsao-Wu, J. Liu, Pomona Col.

**B56 525.9** Exploring a Transcriptional Regulation Model Governing a cis -Antisense Small RNA in *Vibrio Cholerae*. M.G. Zhang, J.J. Wang, T. Lang, J.M. Liu, Pomona Col.

**B57 525.1** The Function of Noncoding RNA BC200 in a Human Disease. H. Shin, J. Lee, Y. Kim, Y. Lee, KAIST, Republic of Korea

**B58 525.11** Role of an Enhancer-Transcribed Long Non-Coding RNA Alive in the Transdifferentiation of Vascular Smooth Muscle Cells to Chondrocytes in Response to Angiotensin II. V. Amaram, S. Das, A. Leung, M.A. Reddy, A. Bansal, L. Lanting, R. Natarajan, City of Hope

**B59 525.12** A Novel Approach to Identify Regulated Long Non-Coding RNAs in Selected Pathways. S.T. Okino, M. Kong, J.M. Flynn, Y. Wang, Bio-Rad Laboratories and Inc.

**B60 525.13** Microarray Profiling and Bioinformatic Analysis of Circular RNAs in Raw264.7 Macrophages Under Simulated Microgravity. M. Yuan, J. Wang, M. Yuan, China Astronaut Res. and Training Ctr., People's Republic of China

**B61 525.14** Micro-RNA-205 Regulates Heart Size Through Direct Modulation of the Hippo Pathway. J.J. Weldrick, L. Kouri, R. Yi, P.G. Burgon, Univ. of Ottawa, Canada, Univ. of Colorado Boulder and Univ. of Ottawa Heart Inst., Canada

**B62 525.15** Investigation of Socs5 as a Gene Target of Mir-9 in Inflammatory Monocytes. M. Stander, B. Rabquer, Albion Col.

**B63 525.16** The Effect of 1,4-Dimethylnaphthalene on Mir-166 MicroRNA. A. Alharbi, M. Campbell, Penn State Behrend

**B64 525.17** Cisplatin Induces Differential Expression of Snornas and Affects Ribosome Methylation. E. Reister, V.J. DeRose, Univ. of Oregon

**B65 525.18** Preventing Autoimmunity in Transcription-Dependent Crispr-Cas Systems. K. Johnson, B. Learn, S. Bailey, Johns Hopkins Univ. Sch. of Med.

**B66 525.19** The Evf2 Enhancer Long Noncoding RNA Regulates Enhancer Interactions Across Megabase Distances. J. Kohtz, I. Cajigas, A. Chakraborty, M. Bastidas, K.S. Swyter, S.J. Kohtz, F. Ay, Northwestern Univ. and La Jolla Inst. for Allergy and Immunology

**B67 525.2** Detection and Comparison of Circular RNAs in Mouse Striatum and Retina. J.-H. Chen, Wuxi Sch. of Med. and Jiangnan Univ., People's Republic of China

## 526

### Protein Synthesis, Structure, Modifications and Interactions

**B68 526.1** Structural and Biochemical Investigation of Plant-Nematode Interactions. A. De Santiago Perez, C. Holland, J. Jez, Univ. of California, Riverside and Washington Univ. in St. Louis

**B69 526.2** Overlap Extension Polymerase Chain to Create a New Expression Vector and the Protein Binding Affinity Analysis Using Mst of Eph Receptors. D. Bowman, J. Muller-Greven, A. Smith, M. Buck, The Univ. of Akron and Case Western Reserve Univ.

**B70 526.3** Repeat Problems: Combinatorial Effect of c9orf72-Derived Dipeptide Repeat Proteins. A. Darling, L. Braydo, L. Blair, J. Koren, V. Uversky, Univ. of South Florida

**B71 526.4** Detecting Released Peptidoglycan Associated Lipoprotein (Pal) from *Escherichia Coli*. E. Snyder, M. Zavorin, K. Farquharson, N. Panullo, M. Pichichero, J. Hellman, L.V. Michel, Rochester Inst. of Technology, Rochester General Hosp. Res. Inst., Univ. of California and San Francisco

**B72 526.5** A Structural Role for the C-Terminal Conserved Lsa Motifs in *Arabidopsis* Larp6 Proteins. C. Toner, L. Chovanec, C. Foster, J. Foster, C. Otte-Petrill, F. Betancourt, E. Billey, C. Bousquet-Antonelli, K. Lewis, Texas State Univ., Institut de Biosciences et Biotechnologies de Grenoble, France and Univ. of Perpignan, France

**B73 526.6** Expression and Purification of the Antigen Binding Fragment of the Germline-Encoded Precursor to the Murine Anti-Slp Metalloantibody in the Baculovirus-Insect Cell System. E. Farokhi, San Diego State Univ.

**B74 526.7** Structural and Functional Large Substrate Binding in Iterative Non-Ribosomal Peptide Synthesis Independent Synthesis (NIS) Enzymes. K.M. Hoffmann, California Lutheran Univ.

**B75 526.8** Effect of Inhibiting Protein Conformational Changes by Introducing Disulfide Bonds in the Transmembrane Domains of the Hendra Virus Fusion Protein. K. B. Slaughter, R. Dutch, Univ. of Kentucky

**B76 526.9** Defining the Role of the L/I Zipper in the Stability of Paramyxovirus and Pneumovirus F Proteins. J.M. Brantje, S.R. Webb, R.E. Dutch, Univ. of Kentucky Molecular and Cellular Biochemistry

**B77 526.1** Calcineurin Gene Subfunctionalization and Swimming Behavior in *Paramecium Tetraurelia*. M.M. Strange, A. Day, D. Fraga, J. Welker, R. Gaines, W. Barrin, The Col. of Wooster

**B78 526.11** Viperin: A Radical SAM-Dependent Approach in the Regulation of Farnesylpyrophosphate Synthase. S. Ghosh, C. Makins, G.D. Román-Meléndez, P. Malec, R. Kennedy, E. N.G. Marsh, Univ. of Michigan

**B79 526.12** An Investigation on Collagen Production by Cells on Ligament Scaffolds. J.L. Johnson, A. Guardia, K. Alismail, Y. Li, J. Zwiesler-Vollick, Lawrence Tech. Univ.

**B80 526.13** Determining the Effects of N-Terminal Acetylation on the Microtubule-Associated Protein Tau. A. Lally, W. Holmes, Rhode Island Col.

**B81 526.14** Dynamic Equilibrium of eEF-2K and CaM as a Regulatory Logic Circuit: Investigations in MCF10A Cells. K.N. Dalby, D.H. Giles, C.M. Crittenden, T.S. Kaoud, R. Ghose, J. Brodbelt, The Univ. of Texas at Austin and City Col. of New York

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**B85 526.18** Genome-Scale Reconstructions of the Mammalian Secretory Pathway Predict Metabolic Costs and Limitations of Protein Synthesis and Secretion. N. Lewis, UCSD

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**B87 526.2** Investigating Palmitoylation Sites on the Dopamine Transporter. D.J. Stanislawski, R.A. Vaughan, J.D. Foster, Univ. of North Dakota

**B88 526.21** Nad<sup>+</sup> Bound N-Terminal Domain of Cards Toxin Increases IL-1 $\beta$  Secretion. A.T. Woods, J. Segovia, A. Galaleldeen, St. Mary's Univ. and The Univ. of Texas HSC

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**B92 526.25** High Throughput Discovery of Novel Regulators of Human Ribosome Biogenesis. S.J. Baserga, K.I. Farley-Barnes, K. McCann, L. Ogawa, J. Merkel, Y. Surovtseva, Yale Univ. Sch. of Med., Yale Sch. of Med. and Nat'l. Inst. of Environmental Health Sciences, Nat'l. Inst. and Yale West Campus

**B93 526.26** Translation Termination on mRNAs Lacking a Stop Codon. F. Zeng, H. Jing, Univ. of Illinois at Urbana-Champaign

**B94 526.27** The Polypeptide Exit Tunnel of the Ribosomal Large Subunit Requires Assembly Factors for Proper Construction and Function. D. Wilson, A. LaPeruta, J. Woolford, Carnegie Mellon Univ.

**B95 526.28** Rps10 Protein Contribution to Ribosomal mRNA Selectivity. J.A. Bush, M. Ferretti, K. Karbstein, Albion Col. and Scripps Res. Inst.

**B96 526.29** USP21 and OTUD3 Antagonize Regulatory Ribosomal Ubiquitylation and Ribosome-Associated Quality Control Pathways. D.M. Garshott, M. Leonard, E. Sundaramoorthy, E.J. Bennett, UCSD

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**B99 526.32** Characterization of Pathogenic Mutations in Human Mitochondrial Alanine-Trna Synthetase. J. Chihade, H. Kennicott, M. Jessica, S. Diaz de Leon, I. Donnell, J. Heath, Carleton Col.

**B100 526.33** Direct Route for Asparaginyl-Trna Formation in *b. Subtilis*. R. Wales, K. Sheppard, Skidmore Col.

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**B103 526.36** The Effects of Peroxide Exposure on the Transfer RNA of Radiotrophic *c. Neoformans*. M. Kelley, R. Myers, M. Jora, B. Addepalli, P. Limbach, Univ. of Cincinnati

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**B105 526.38** Plasma Metalloproteinase-9 (Mmp9) Changes in Acute Mild Traumatic Brain Injury (Mtb) and Correlates with Quantitative Eeg. E. Hubbard, J. Dawlaty, X. Arakaki, S. Cole, R. Goldweber, M. Harrington, Huntington Med. Res. Inst.s and Huntington Memorial Hosp.

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**B112 526.45** Functional Characterization of Glutamate Carboxypeptidase II: A Multifunctional Zn-Metalloprotease. K.F. Holderby, H.E. Gamage, J.M. Derham, B.R. Greiner, J. Mendoza, *Eastern Illinois Univ.*

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**B200 531.1** Novel Inhibitors of P-Glycoprotein from in Silico Optimizations of Inhibitor SMU-29 Using the Chemgen Program. L.E. Ammerman, A.K. Nanayakkara, M. Aljowni, A.R. Lippert, P.D. Vogel, J.G. Wise, Southern Methodist Univ.

**B201 531.11** Mechanistic Studies of Drug-Like Inhibitors of P-Glycoprotein Using Atpase Assays, Electron Spin Resonance Spectroscopy and Cancer Cell Models. G. Chen, J. Ballou-Crawford, M. Aljowni, A. Lippert, J.G. Wise, P.D. Vogel, Southern Methodist Univ.

**B202 531.12** Reconstitution of P-Glycoprotein in Nanodiscs Using the MSP1D1 Scaffold Protein for Biochemical Inhibitor Screens. J.J. Ballou-Crawford, G. Chen, M.C. Oliveira, J.G. Wise, P.D. Vogel, Southern Methodist Univ.

**B203 531.13** Pentachloropseudilin Inhibits TGF- $\beta$  Signaling by Promoting TGF- $\beta$  Type II Receptor Degradation via Non-Raft Internalisation. C-L. Chung, Nat'l. Sun Yat-sen Univ., Taiwan

**B204 531.14** Sorafenib Suppresses TGF- $\beta$  Responsiveness by Promoting TGF- $\beta$  Type II Receptor Degradation. S-W. Wang, Nat'l. Sun Yat-sen Univ., Taiwan

**B205 531.15** Optimization of Breast Cancer Resistance Protein (BCRP) Expression in the Yeast *Pichia Pastoris*. M.C. Oliveira, C.A. Lavigne, B.M. Tran, M.E. Fowler, D.D. Okwuone, R. Farokhnia, J.G. Wise, P.D. Vogel, Southern Methodist Univ.

**B206 531.16** Strategies for Cloning and Expression of a Codon-Optimized Human P-Glycoprotein (Mdr1) in the Yeast *Pichia Pastoris*. B.M. Tran, M.C. Oliveira, D.D. Okwuone, R. Farokhnia, M.E. Fowler, J.G. Wise, P.D. Vogel, Southern Methodist Univ.

**B207 531.17** Screening of in Silico Identified Inhibitors of Breast Cancer Resistance Protein (BCRP) Transporter in BCRP-Overexpressing MCF-7 M100 Cancer Cells. B.A. Bequeaith, A.K. Nanayakkara, P.D. Vogel, J.G. Wise, Southern Methodist Univ.

**B208 531.18** Discovery of a New Class of Rip1/Rip3 Dual Inhibitors with Anti-Cell Death and Anti-Inflammatory Properties. T. Zhou, Q. Wang, N. Phan, J. Ren, B. Liu, Univ. of Wisconsin-Madison and Harvard Med. Sch.

**B209 531.19** Expression of ABC Transporters in Multidrug Resistant Cancer Cell Lines. K.L. Holcomb-Webb, A.K. Nanayakkara, M. Aljowni, A.R. Lippert, P.D. Vogel, J.G. Wise, Southern Methodist Univ.

**B210 531.2** Hepatocyte Growth Factor Receptor (HGFR) as a Potential Lung Cancer Target. H. Ahmed, R. Skouta, Univ. of Texas at El Paso

**B211 531.21** Setting All-Carbon Quaternary Stereocenters with Stereospecific, Nickel-Catalyzed Cross Couplings. A.D. Duke, S.M. Pound, J. Xu, C.H. Basch, M.E. Hoerrner, E.M. Bampo, M.P. Watson, Univ. of Delaware

**B212 531.22** Retinoblastoma-Derived Peptides Directly Inhibit the CMG Helicase and Impair Proliferation of Cancer Cells. A.J. Larratta, S. Borysov, Saint Leo Univ.

**B213 531.23** Effects of Purified Plant Extracts and Homologous Commercial Derivatives on *Entamoeba Histolytica* Growth. S. Hunt, Y. Santos, N. Seeram, D. Rowley, H. Ma, A. Espinosa, Roger Williams Univ. and Univ. of Rhode Island

**B214 531.24** Structure-Based Drug Design Targeting the Maltose Sweet *Mycobacterium Tuberculosis* GlgE. C. Petit, S. Kapil, S.K. Veleti, J. Lindenberger, S.J. Sucheck, D.R. Ronning, Univ. of Toledo and The Ohio State Univ.

**B215 531.25** Cytotoxic and Genotoxic Assessment of Some Anti-Tumour Plants from Southwest Nigeria in Cervical Cancer (Hela) Cell Line. O. Adebisin, B. James, O. Magbagbeola, S. Omlabu, Univ. of Lagos, Nigeria, Col. of Med. and Univ. of Lagos, Nigeria

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**B191 531.1** A Kinetic Assay for Non-Automated Drug Screening. G.C. Zem, A. Chimayan, V. Aleksanyan, J. Gordon, F. Gomez, A. Seyedroudbari, J. Chang, T. Botello, N. Tan, D. Arefin, D. Tobar, A. Khachekian, L. Gama, E. Durodola, J. Batty, C. Plascencia, L. Barillas, A. Roverud, S. Kreuz, L. Sarkisyan, F. Lee, J. Munoz, L. Reque, V. Abed, L. Kinog, S. B. Oppenheimer, California State Univ. and Northridge

**B192 531.2** Blocking Protein Myristoylation Inhibits Prostate Cancer Progression. H. Cai, S. Kim, O.A. Alsaidan, Univ. of Georgia

**B193 531.3** Towards the Identification of the Minimal Pharmacophore of Kdt-I. J. McCartney, P. Dickson, T. Kodadek, North Central Col. and Scripps Res. Inst.

**B194 531.4** Monitoring Immune Cells-Mediated Cytolysis Through Impedance Technology Allows Kinetic Analysis of Reagent Efficacy. F. Cerignoli, B. Xi, G. Guenther, L. Muir, B. Lamarche, Y. Abassi, ACEA Biosciences Inc.

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**B217 532.2** Development of a Single Reaction PCR Genotyping Assay for Two Separate Gene Loci in Mice. E.M. Matson, N. Dillman, S.J. DeBus, C.L. Cadieux, U.S. Army Med. Res. Inst. of Chemical Defense

**B218 532.3** Improved RNA-Modification Mapping Through Employment of Novel Ribonucleases and Lc-Ms. P. Thakur, P.A. Limbach, B. Addepalli, Univ. of Cincinnati

**B219 532.4** Population Genetics of *Scaevola* on Culebra, Puerto Rico. L. Hodkinson, S. Witherup, *Ithaca Col.*

**B220 532.5** Genomics of Physiological Adaptations of Two Milkweed Species (*Asclepias*) in Their Hybrid Zone. A.G. A. Selberg, C. Olson-Manning, *Augustana Univ.*

**B221 532.6** Assessing a Loss of Function Mutation in the *Nod2* Gene in Puerto Rico. Y. Acevedo-Sanchez, J.C. Martínez-Cruzado, *Univ. of Puerto Rico at Mayaguez*

**B222 532.7** Localized Single Transcript Detection of EML4-ALK in NSCLC Using Co-Localization Quantum Dot Fluorescent in Situ Hybridization (Coqfish). N. Huang, Y. Jiang, S. Zhong, *UCSD*

**B223 532.8** Investigating Copy Number Variations in Amyotrophic Lateral Sclerosis-Causing Genes as a Rare Cause of Disease. A.N. Vélez, J. Lowry, C. Dalton, Z. Charmchi, T. Siddique, *Universidad de Puerto Rico, Rio Piedras Campus, United States Minor Outlying Islands, Feinberg Sch. of Med., Northwestern Univ. and Northwestern Univ.*

**B224 532.9** The Frequency of *Chek2* Variant P. Ile157Thr in Men with Prostate Cancer: Towards Expanded Genetic Testing. N.G. Agubokwu, V.N. Giri, *The Lincoln Univ. of Pennsylvania and Thomas Jefferson Univ.*

**B225 532.1** Grapes: A Versatile Tool for Analyzing Structural Variation from Whole-Genome and Targeted DNA Sequencing Data. B. del Olmo, J. Matés, I. Mademont-Soler, A. Pérez-Serra, M. Coll, C. Allegue, M. Puigmulé, I.d. O. Garcia-Bassets, V. Pascali, A. Oliva, R. Brugada, *Univ. of San Diego, Cardiovascular Genetics Ctr., Univ. of Girona-IDIBGI, Spain and Università Cattolica del Sacro Cuore, Italy*

**B226 532.11** Systems Genetics Analysis of Arrhythmogenic Cardiomyopathy Induced by P3368I Mutation in Transmembrane Protein 43. U. Munkhsaikhshan, R. Hiltbrand, Z. Khuchua, L. Lu, J.A. Towbin, E. Purejav, *Univ. of Tennessee HSC, Cincinnati Children's Hosp. Med. Ctr., Dept. of Genetics, Genomics and Informatics, Univ. of Tennessee HSC, Pediatrics Cardiology and St. Jude Children's Res. Hosp.*

**B227 532.12** Comparative Genomics and Gene Annotation of a Region of *Drosophila Euphratica* Chromosome 4. A. Gayle, M. Van Stry, *Lane Col.*

**B228 532.13** Annotation of Genes on Contig 31 of the *Drosophila Euphratica* Chromosome 4. J. Hobson, M. Van Stry, *Lane Col.*

**B229 532.14** Genetic and Bioinformatic Analysis of *Streptomyces* Bacteriophage Cluster Bf. T. McClendon-Moss, L. Hughes, *Univ. of North Texas*

**B230 532.15** Using a High Resolution Melt Curve Assay to Examine the Single Nucleotide Polymorphisms of the *HFE* gene. M.K. Ehrke, J. Zwiesler-Vollick, *Lawrence Tech. Univ.*

**B231 532.16** Improving the Theranostics of Mendelian Diseases: From Ad Hoc to Evidence-Based Tailored Thresholds. D. Simcikova, P. Heneberg, *Third Faculty of Med. and Charles Univ., Czech Republic*

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**B232 533.1** C-Reactive Protein Binds to Integrin  $\alpha 2$  and Fc $\gamma$  Receptor I, Leading to Breast Cell Adhesion and Breast Cancer Progression. A. Moon, E.-S. Kim, S. Y. Kim, M. Koh, H.-M. Lee, K. Kim, J. Jung, H. S. Kim, W. K. Moon, S. Hwang, *Duksung Women's Univ., Republic of Korea, Seoul Nat'l. Univ. Hosp., Republic of Korea and Hanyang Univ., Republic of Korea*

**B233 533.2** Fxr Inhibits Nlrp3 Inflammasome Activation by ER Stress. A. Kim, C. Y. Han, H. S. Rho, T. H. Kim, S. G. Kim, *Seoul Nat'l. Univ., Republic of Korea and Wonkwang Univ., Republic of Korea*

**B234 533.3** Ligand-Mediated Mitochondrial Translocation of the Transforming Growth Factor- $\beta$  Type I Receptor and Hexokinase 2. J. Kang, *Mayo Clinic and Mayo Clinic Col. of Med.*

**B235 533.4** Pgc-1 $\alpha$ , a Novel Substrate for Protein Arginine Methyltransferase 7? J. Cuala, I. Osuji, C. Zurita-Lopez, *California State Univ. and Los Angeles*

**B236 533.5** Iqgap Proteins Do Not Regulate Mitogen-Activated Protein Kinase (Mapk) Signaling Through Direct Interaction with Ras. C.J. Morgan, Z. Li, A.C. Hedman, D.B. Sacks, *Nat'l. Insts. of Health*

**B237 533.6** Bystander Effects in the Cellular Radiation Response. S. Diegeler, C. Baumstark-Khan, J. Jordan, C.E. Hellweg, *German Aerospace Ctr. (DLR) and Inst. of Aerospace Med., Germany*

**B238 533.7** Expression Is Required for Time Phase-Specific Lps-Stimulated Tnf $\alpha$  and IL-10 Expression in Raw 264.7 Macrophages. M. Reynoso, R.W. Matheny, A.Y. Mitrophanov, S. Hobbs, *U.S. Army Res. Inst. of Environmental Med., U.S. Dept. of Defense Biotechnology High Performance Computing Software Applications Inst. and*

**B239 533.8** Tumor Endothelial Marker 1 (Tem1/ endosialin/cd248) Enhances Wound Healing Process by Cooperation with Platelet-Derived Growth Factor (Pdgf) Receptor. Y.-K. Hong, *Nat'l. Cheng Kung Univ., Taiwan*

**B240 533.9** Role of *crbn* in Molecular and Cellular Mechanism of Ampk Inhibition. K. M. Lee, S.-J. Yang, C.-S. Park, *Korea Food Res. Inst., Republic of Korea and Gwangju Inst. of Science and Technology, Republic of Korea*

**B241 533.1** Purinergic Signaling Controls Fibroblast Growth Factor-21 Expression in Skeletal Muscle Through Akt/mTOR Pathway. M. Arias-Calderón, C. Morales, W. Vasquez, N. Hernández, E. Jaimovich, S. Buvinic, *Universidad de Chile, Chile*

**B242 533.11** Caveolin-1 Phosphorylation Is Essential for Ipsc-Derived Human Neuronal Axonal Growth During Early Stage of Differentiation. S. Wang, Z. Zhang, J. Leem, H. Patel, B. Head, *UCSD*

**B243 533.12** Protein-Protein Interaction Prediction Yields Wnk-Spk/osr1 Pathway as Regulator of Kir2.1 and Kir2.3 K<sup>+</sup> Channels. C.A. Taylor IV, S.-W. An, S.G. Kankanamale, C.-L. Huang, M.H. Cobb, *The Univ. of Texas Southwestern Med. Ctr. and Univ. of Iowa Carver Col. of Med.*

**B244 533.13** PY489- $\beta$ -Catenin Phosphorylation Involved in the Intestinal Regeneration of the Sea Cucumber *h. glaberima*. V. Torres-Gutierrez, S.A. Bello, J.E. García-Arrarás, *Universidad de Puerto Rico and Rio Piedras Campus, Puerto Rico*

**B245 533.14** Functional Role of MYC Transcript as Active Player in the Canonical Wnt Pathway During Intestinal Regeneration. M. Alicea-Delgado, J.E. García-Arrarás, *Univ. of Puerto Rico, Rio Piedras Campus, Puerto Rico, Universidad de Puerto Rico and Rio Piedras Campus, Puerto Rico*

**B246 533.15** HDAC7 in MLCP-Mediated Endothelial Barrier Preservation. A. Kovacs-Kasa, R. Batori, L. Kovacs, Y. Su, A.D. Verin, *Augusta Univ.*

**B247 533.16** C-Jun N-Terminal Kinase (JNK $\alpha_1$ ) Binds eNOS and Phosphorylates at S116, Differentiating It from P38 and Erk Phosphorylation. X.K. Solone, A.L. Caldara, J.L. McMurry, C. Chrestensen, *Kennesaw State Univ. and Emory Univ.*

**B248 533.17** Induction of Gap Junctional Coupling by Secreted Factor(S) from Mesothelial Cells Is Required for the Invasiveness of Endometriosis. B.J. Nicholson, J.B. Chavez, E.K. Dorsey, T. Olivas, C.-M. Wang, N. Lucio, L. Gillette, R.O. Burney, N. Kirma, *The Univ. of Texas HSC at San Antonio and Madigan Army Med. Ctr.*

**B249 533.18** Temporal Control of Growth Factor-Mediated Signaling Pathways During Cell Differentiation and *Xenopus* Embryonic Development. P. Mondal, V.V. Krishnamurthy, J. Khamo, S. Sharum, K. Zhang, *Univ. of Illinois at Urbana-Champaign*

**B250 533.19** ANXA5 Suppresses COX-2 Expression by Downregulating the PKC- $\zeta$ -NF- $\kappa$ B Signaling Pathway in Prostate Cancer Cells. H. S. Baek, Y.-J. Kwon, D.-J. Ye, Y.-J. Chun, *Chung-Ang Univ., Republic of Korea*

**B251 533.2** Wnt16 Regulates Chondrocyte Differentiation Through Wnt/Planar Cell Polarity (PCP) Pathway. Y. Zeng, W. Yueng, K. L. Mak, H. Zhao, *The Chinese Univ. of Hong Kong, Hong Kong*

**B252 533.21** Tannic Acid Downregulates Angiotensin Type 1 Receptor in Aortic Smooth Muscle Cells Through EGFR Dependent Phosphoinositide 3-Kinase Pathway. L. Iyer, Y. Zhang, T. Thekkumkara, *Texas Tech Univ. Health Sciences Ctr. Sch. of Pharmacy*

**B253 533.22** Ddx3 Induces Neural Crest Through Activation of an Akt-Wnt Signaling Axis. M. Peretto, J. Li, S. Wei, *Univ. of Delaware and Kunming Univ. of Science and Technology, People's Republic of China*

**B254 533.23** Vitamin D and Cam Kinase Phosphatase Mediate Breast Cancer Proliferation. Q.B. Morrow, J.M. Schmitt, *George Fox Univ.*

**B255 533.24** Calcium Control of Mdm2 in Breast Cancer Cells. G. H.N. Nguyen, J.M. Schmitt, *George Fox Univ.*

**B256 533.25** Transient Receptor Potential Vanilloid 4 Channel Regulates Tgfb1-Mediated Fibroblast Differentiation and Airway Remodeling Through Rac/Nadph Oxidase 4 Axis. S. Ghebreigziabher, N. Al-Azzam, M. Snyderman, C. Thodeti, S. Paruchuri, *Univ. of Akron and Northeast Ohio Med. Univ.*

**B257 533.26** New Assays Reveal Opposing Effects of 17B-Estradiol in the Presence and Absence of Ovaries on the Cardiac Network of Calmodulin-Binding Proteins. J.H. Patton, K.N. Kaster, B. Gebert-Oberle, S. Clayton, J. Giles, Q-K. Tran, *Des Moines Univ.*

**B258 533.27** Plasma Membrane Pi(4,5)p2 Threshold Regulates Chemotactic Signaling Pathways and Cell Morphology. N. Bawazir, M. Beshay, A. Ring, C. Janetopoulos, *Univ. of the Sciences*

**B259 533.28** Evolution of Tlr Signaling: A Sea Anemone Model Has a Single Toll-Like Receptor with Roles in Pathogen Detection, Nf-kb Signal Transduction, and Development. J.L. Messerschmidt, J.J. Brennan, T.D. Gilmore, *Boston Univ.*

**B260 533.29** Disruption of a Short Open Reading Frame (Sorf) in the mRNA 5' Leader Sequence (5'ls) of the Type I Angiotensin Receptor (At<sub>1</sub>r) Increases Angiotensin II (Ang II)-Induced At<sub>1</sub>r Internalization and Signaling Through the Extracellular Signal-Regulated Kinases (Erk1/2) Pathway. P. Kadam, H. Ji, A.V. Pai, R. Speth, S. Mueller, K. Sandberg, *Georgetown Univ. and Nova Southeastern Univ.*

**B261 533.3** Cell Cycle Regulation and Hypoxic Adaptation in the Pathogenic Yeast *Cryptococcus Neoformans*. S. Kawamoto, Z. Moranova, E. Virtudazo, M. Ohusu, V. Raclavsky, *Chiba Univ. Med. Mycology Res. Ctr., Japan and Palacky Univ., Czech Republic*

**B262 533.31** Pseudophosphatase Mkk-Styx Regulates Neurite Outgrowth and Alters the Morphology of Primary Neurons. S.D. Hinton, D. Banks, A. Dahal, A. McFarland, B. Flowers, C. Stephens, B. Swack, A. Gugssa, W. Anderson, *Col. of William and Mary and Howard Univ.*

**B263 533.32** Intact Cell Assay to Measure Agonist- and Grk2-Dependent Phosphorylation of the  $\alpha_{2A}$ -Adrenergic Receptor. Z. Farina, A-M. Hebert, E. Weldin, M. Varney, R. Sterne-Marr, *Siena Col.*

**B264 533.33** Cyp1b1 Induces Tumorigenic Metastasis Through Promotion of Upar and Subsequently Activation of Upar Signaling via Regulation of Mdm2-Upar System. Y-J. Kwon, D-J. Ye, H-S. Baek, Y-J. Chun, *Chung-Ang Univ., Republic of Korea*

**B265 533.34** Steroid Sulfatase Activates the Integrin Signaling Pathway in Human Cervical Cancer Cells. D-J. Ye, Y-J. Kwon, H-S. Baek, Y-J. Chun, *Chung-Ang Univ., Republic of Korea*

**B266 533.35** Gpr56/Adgrg1 Activation Induces Il-6 Production in Melanoma Cell via the G $\alpha_{12/13}$ -RhoA-Rock Pathway. K-Y. Huang, N-Y. Chiang, H-H. Lin, *Chang Gung Christian Univ., Taiwan*

**B267 533.36** Blue Light-Excited Retinal Delocalizes Plasma Membrane Bound Pip2 and Triggers Stress Responses Challenging the Cellular Integrity. K. Ratnayake, J.L. Payton, A. Karunaratne, *Univ. of Toledo*

**B268 533.37** Convergence of Wnt, Growth Factor and Trimeric G-Protein Signals on the Signaling Scaffold Daple. J. Ear, N. Aznar, Y. Dunkel, N. Sun, K. Satterfield, F. He, I. Lopez-Sanchez, M. Ghassemian, D. Sahoo, I. Kufareva, P. Ghosh, *UCSD*

**B269 533.38** Tlr4 and AtI Receptor Contribute to Tuberculous Pleural Fibrosis Through Nox4-Erk-Ros Signal Pathway. S. Park, J. y. Hong, *Hallym Univ., Republic of Korea*

**B270 533.39** Beta-Adrenergic Receptor Signaling in Distal Convulated Tubules. L. Cheng, Q. Wu, R.A. Fenton, *Aarhus Univ., Denmark*

**B271 533.4** High-Fat Diet Augments Muscle Atrophy by Changes of Muscle Atrophy-Related Genes in Mice. A. Goto, T. Tsuzuki, T. Yoshihara, S. Furuichi, K. Tsukioka, R. Kakigi, H. Naito, *Juntendo Univ., Japan*

**B272 533.41** Inhibition of Autophagy by Mevalonate Pathway Inhibitors, a New Therapeutic Approach to Sensitize Glioblastoma Cells to Temozolomide Induced Apoptosis. S. Shojaei, J. Alizadeh, J. Thliveris, N. Koleini, E. Kardami, G. Hatch, F. Y. Xu, S. Hombach-Klonisch, T. Klonisch, S. Ghavami, *Univ. of Manitoba, Canada and Univ. of Vermont*

**B273 533.42** IGF-I Optimizes Mitochondrial Function Through AMP-Activated Protein Kinase in Adult Sensory Neurons. M-R. Aghanoori, M.G. Sabbir, D.R. Smith, P. Fernyhough, *Univ. of Manitoba, Canada*

**B274 533.43** Chronic Beta2-Adrenergic Receptor Stimulation Improves Whole-Body Glucose Homeostasis Through Skeletal Muscle Metabolic Reprogramming. J. Meister, D. Bone, J.R. Knudsen, R. Lee, A. Cohen, M. Kleinert, R. Berdeaux, E. Richter, J. Wess, *Nat'l. Inst. of Diabetes and Digestive and Kidney Diseases, Nat'l. Insts. of Health, Univ. of Copenhagen, Denmark and Houston Med. Sch.*

**B275 533.44** Characterization of a Phospholipase C-Like Protein (Tbpi-Plc2) from *Trypanosoma Brucei*. N.W. Negrao, S. King-Keller, G. Huang, R. Docampo, *Univ. of Georgia*

**B276 533.45** Muscarinic Antagonist Mediated Activation of Erk Signaling Depends on  $\beta$ -Arrestin Recruitment to Augment Axonal Outgrowth in Neurons. M.G. Sabbir, P. Fernyhough, *Univ. of Manitoba, Canada*

**B277 533.46** Regulation and Functional Studies of Tribbles Homolog 2 (Trib2) in Ovarian Granulosa Cells. A. Warma, C.A. Price, D.W. Silversides, J.G. Lussier, K. Ndiaye, *Univ. of Montreal, Canada*

**B278 533.47** Optimization and Initiation of a Genome-Wide Forward Genetic Death Screen for the Lacritin Receptor Complex Using the Brunello Crispr/Cas 9 Sgrna Library. K. L. Dias Teixeira, L. Mao, J. Doench, G. W. Laurie, *Univ. of Virginia and Broad Inst.*

**B279 533.48** Mkk-Styx Alters Localization Dynamics of Autophagosomes and Phenotypic Dynamics of Lysosomes. H. D, *Col. of William and Mary*

**B280 533.49** The Function of Wnk1/Osr1 in Cell Migration and Angiogenesis. A. Jaykumar, S. Earnest, K. McGlynn, S. Gallolu Kankanamalage, S. Stippes, G. Pearson, M. Cobb, *The Univ. of Texas Southwestern Med. Ctr. and Georgetown Univ.*

**B281 533.5** Characterization of the Putative Gtpase Activity of the Ellis Van Creveld Protein I. G.T. Nguyen, O.O. Odunuga, *Stephen F. Austin State Univ.*

**B282 533.51** Mitochondrial Adenylate Kinase 4 Regulates Dual Ampk and Mtorc1 Activation. C. Gonzales, A. Phuong Nguyen, A. Abdullah, R. Meraz, E. Castellanos, B. Nittayo, N. Lanning, *California State Univ. and Los Angeles*

**B283 533.52** Seven-in-Absentia (Sina) Family E3 Ligases in Development and Growth. R.E. Van Sciver, Y. Cao, A.U. Ahmed, A.H. Tang, *Eastern Virginia Med. Sch. and Mayo Clinic*

**B284 533.53** Regulatory Mechanisms Controlling the Subcellular Localization and Activity of the RhoA GefNet1 in Breast Cancer. J.A. Frost, Y. Zuo, A. Ulu, *The Univ. of Texas HSC at Houston*

**B285 533.54** Mkk-Styx-Induced Pc-12 Neurites Are Dopaminergic. B.D. Swack, D. Banks, A. Dahal, *Col. of William and Mary*

**B286 533.55** Spatial Compartmentalization of Akt/mtor Signaling: What Happens in the Nucleus. X. Zhou, Y. Zhong, J. Zhang, J.Y-J. Shyy, J. Zhang, *UCSD*

**B287 533.56** Passing on Signals to Compass: A Novel Intramolecular Interactions in Pas Kinase Controls the Stem Cell Fate via Regulating Compass Protein Complexes. C.K. Kikani, X. Wu, J. Rutter, *Univ. of Utah and Fred Hutchinson Cancer Inst.*

**B288 533.57** The Trpv4-Taz Signaling Axis in Matrix Stiffness- and Tgfb $\beta$ 1-Induced Epithelial-Mesenchymal Transition. S.O. Rahaman, S. Sharma, R. Goswami, Univ. of Maryland

**B289 533.58** Glucocorticoid-Driven Transcriptomes in Human Airway Epithelial Cells: Insight from Primary Cells and Cell Lines. M.M. Mostafa, C.F. Rider, R. Newton, Univ. of Calgary, Canada and Univ. of British Columbia, Canada

**B290 533.59** Developing an ELISA for Avian Corticosterone Binding Globulin. E. Johnson, I. Antunes, J.L. Malisch, P.S. Mertz, St. Mary's Col. of Maryland

**B291 533.6** Role of Sex Hormones in Regulation of Sodium-Proton Exchanger NHE1: Implications for Migraine. E.A. Galloway, K.E. Cottier, J. Kim, T. Vallecillo, T.P. Davis, T.W. Vanderah, T.M. Largent-Milnes, Univ. of Arizona

**B292 533.61** Structural Basis of Glucocorticoid Receptor Recognition of Both Unmodified and Methylated Ancient Binding Sites, Precursors for a Modern Recognition Element. X. Liu, E. Weikum, E. Ortlund, Emory Univ.

**B293 533.62** A Novel Interaction Between Glucocorticoid Receptor and Beta-Arrestin Proteins. M.G. Petrillo, J. Cidlowski, Nat'l. Inst. of Environmental Health Sciences and Nat'l. Inst. of Health

**B294 533.63** Using Embryonic Zebrafish to Evaluate the Effects of Exposure to Novel Bisphenol Analogues. L.N. Bruton, X. Zhou, S.C. Timmons, J.M. Morrisette, Lawrence Tech. Univ.

**B295 533.64** Follicle Stimulating Hormone Stimulation of a Murine Monocyte Cell Line. A.B. Leamon, B.D. Cohen, Union Col.

**B296 533.65** Impact of Single Nucleotide Polymorphisms on HPA Axis Functionality in Depression. C.E. Kelly, B.D. Cohen, Union Col.

**B297 533.66** Jaz Proteins Promote Growth and Reproduction by Restraining Transcriptional Programs That Link Primary and Specialized Metabolism. Q. Guo, I. Major, Y. Yoshida, G. Howe, Michigan State Univ. and The Univ. of Tokyo, Japan

**B298 533.67** Investigating Gibberellin Phytohormone Biosynthesis by Plant-Associated Bacteria. R.J. Peters, Iowa State Univ.

**B299 533.68** Structural Basis of the Strigolactone Signaling Through Plant SCF E3 Complex. T.R. Hinds, N. Shabek, H. Mao, N. Zheng, Univ. of Washington and Howard Hughes Med. Inst.

**B300 533.69** Defining the Expression Domains of the Arabidopsis Glutaredoxin Genes *atgrxs5*, *atgrxs6*, and *atgrxs8*. O. Davalos, A. Ehrary, M. Rosas, F. Fernandez, M.A. Escobar, California State Univ. and San Marcos

**B301 533.7** Characterization and Expression of *Rhizophora Mangle* *Rmmt2*, a Type 2 Metallothionein Gene, in Response to Heavy Metal Exposure. I.D. Snyder, S. Acacio, R.M. Trabing, A.C. Shor, Saint Leo Univ.

**B302 533.71** Glycine Betaine Accumulation in *Avicennia Germinans* Propagules and Seedlings as a Function of Abiotic Stress. J.N. Warren, Z. Day, A.C. Shor, Saint Leo Univ.

**B303 533.72** Protein Tyrosine Phosphatase, Receptor Type B (PTPRB) Inhibits Brown Adipocyte Differentiation Through Regulation of VEGFR2 Phosphorylation. W.-K. Kim, B.-S. Han, Korea Res. Inst. of Bioscience and Biotechnology, Republic of Korea

**B304 533.73** PRL Phosphatases Promote Tumor Progression by Regulating the Level of Intracellular Magnesium. S. Hardy, E. Kostantin, S.J. Wang, N. Uetani, M.L. Tremblay, McGill Univ., Canada

**B305 533.74** Acid Phosphatase in Soil. K.E. Ayers, E.J. Fogle, California Polytechnic State Univ.

**B306 533.75** Characterization of Acid Phosphatase Adsorption to Montmorillonite. W.S. McTaggart, California Polytechnic State Univ.

**B307 533.76** Identification and Characterization of Glycosomal and Cytosolic Nudix Hydrolases with Polyphosphate Hydrolyzing Activity in *Trypanosoma Brucei*. C.D. Cordeiro, R. Negreiros, K. Ahmed, R. Docampo, Univ. of Georgia

**B308 533.77** Relaxation of Bladder Smooth Muscle by Flavonoids from *Sophora Flavescens* via Direct Activation of the Large-Conductance Calcium-Activated Potassium Channel. J. Han, S. Lee, N. Lee, H.-J. Jo, C.-S. Park, Gwangju Inst. of Science and Technology, Republic of Korea

**B309 533.78** Modulation of Nicotinic Receptors by Cannabinoids. C.S. Rodriguez-Tirado, J.O. Colon-Saez, J. Lasalde-Dominicci, Univ. of Puerto Rico

**B310 533.79** Modeling *Slc26a4* Associated Hearing Loss Using Zebrafish as a Model System. A.J. Scott, A. Koleilat, L. Schimmenti, Mayo Clinic

**B311 533.8** Characterization of the Effects of Novel Positive Allosteric Modulators on the Functionality of the  $\alpha 7$  Nicotinic Acetylcholine Receptor (NACHR). F. Reilly-Andujar, J.A. Lasalde, J.O. Colón, Univ. of Puerto Rico and Rio Piedras Campus

**B312 533.81** Cardiac Nav1.5 Channel Is Regulated by Litaf. N.N. Turan, K.S. Moshal, K. Roder, A. Xie, Y. Lu, A. Werdich, C. MacRae, G. Koren, The Warren Albert Med. Sch. of Brown Univ., Univ. of Minnesota and Brigham and Women's Hosp. and Harvard Med. Sch.

**B313 533.82** Allosteric Modulation of the Pentameric Ligand-Gated Ion Channel Elic by Functionally Active Nanobodies. C. Ullens, M. Brams, H. De Peuter, R. Spurny, E. Pardon, D. Bertrand, J. Steyaert, C. Govaerts, Katholieke Universiteit Leuven, Belgium, FEI Thermo Fisher, Czech Republic, Vrije Universiteit Brussel, Belgium, HiQScreen, Switzerland and Université libre de Bruxelles, Belgium

**B314 533.83** Measuring the Camp/PKA Signaling Pathway in Stress-Induced Sleep Using *c. Elegans* as a Model Organism. R. Schuck, A. Cianciulli, T. Buerkert, E. Li, M. Nelson, Saint Joseph's Univ.

**B317 533.86** Role of 5-lp $_7$  in the Regulation of Gene Expression. S. Sahu, C. Gu, S.B. Shears, Nat'l. Inst. of Environmental Health Sciences and Nat'l. Inst.s of Health

**B318 533.87** Inositol Hexakisphosphate Kinase-2 in Cerebellar Granule Cells Acts Through Protein 4.1n to Regulate Purkinje Cell Morphology and Motor Coordination. L. Nagpal, C. Fu, S.H. Snyder, Johns Hopkins Univ. Sch. of Med.

**B319 533.88** An Astrocyte Model Looking Toward Understanding Neurodegeneration. E. Corcoran, S. Hemkin, Kenyon Col.

**B320 533.89** Adaptation to Supraphysiologic Room Air Oxygen Changes the Effects of Nitric Oxide on A549 Lung Cells in Vitro. A. Henn, S. Darou, R. Yerden, BioSpherix

**B321 533.9** Tdag5l Is a Key Modulator of Vascular Calcification and Osteogenic Transdifferentiation of Arterial Smooth Muscle Cells. K. Platko, G. Gyulay, P. Lebeau, Š. Lhotá, J. Hyun Byun, F. Boivin, D. Bridgewater, J. Krepinsky, R.C. Austin, McMaster Univ., Canada

**B322 533.91** Heme-Free H-Nox from *Vibrio Cholerae* Is Activated by Oxidation via a Zinc Ligand Switch Mechanism. E. Yukl, K. Chacon, J. Jarvis, New Mexico State Univ. and Reed Col.

**B323 533.92** Early Growth Response Protein-1 (Egr-1) Expression by Hydrogen Peroxide (H $_2$ O $_2$ ) Is Mediated via C-Src and Pkb-Dependent Creb Signaling Events in Vascular Smooth Muscle Cells (Vsmc). V. Truong, V. Rondeau, A. Jain, A.K. Srivastava, Centre de recherche du Centre Hospier de l'Université Montréal, Canada

**B324 533.93** Redox Modulation of Nqo1. D. Siegel, D. Dehn, K. Quinn, D. Backos, A. Di Francesco, M. Bernier, N. Reisdorph, R. de Cabo, D. Ross, Skaggs Sch. of Pharmacy, Univ. of Colorado Anschutz Med. Campus, Experimental Gerontology Section, Translational Gerontology Branch and Nat'l. Inst.s on Aging

**B325 533.94** Oxidative Stress and Obesity: Detection of Free Radicals in Leptin Resistant and Catalase Transgenic Mice. G.L. McCormick, Marshall Univ.

**B326 533.95** Peri/epicellular Protein Disulfide Isomerase PDI Acts as an Organizer of Cytoskeletal Mechanoadaptation in Vascular Smooth Muscle Cells. L.Y. Tanaka, T.L. Araujo, A.I. Rodriguez, M.S. A. Ferraz, V.B. Pelegati, A.M. Santos, C.L. Cesar, A.M. Alencar, F.R. M. Laurindo, Univ. of São Paulo, Brazil and Univ. of Campinas, Brazil

**B327 533.96** Biochemical Characterization of the *Drosophila* Methionine Sulfoxide Reductase A. S. Tarafdar, G. Kim, N. Rusan, R. Levine, Nat'l. Heart, Lung, and Blood Inst. and Nat'l. Inst.s of Health

**B328 533.97** Revealing Subcellular Redox Dynamics with Multiplex Imaging of Compartment-Specific Redox Probes. M. Tantama, J. Norley, S. Radhakrishnan, M. Rajendran, *Purdue Univ.*

**B329 533.98** Converting Nature's Switches into Scientists' Tools: How Biophysical Insights Lay the Foundation for Artificial Control of Protein Activity. K.H. Gardner, I. Dikiy, U. Edupuganti, E. Orth, R. Abzalimov, *Advanced Science Res. Ctr. and City Univ. of New York*

**B330 533.99** Globally Monitoring Allosteric Coupling in the A<sub>2A</sub> Adenosine Receptor by Nmr in Solution. M. Eddy, K. Jacobson, R. Stevens, K. Wuthrich, *Scripps Res. Inst., Nat'l. Inst.s of Health and Univ. of Southern California*

**B331 533.1** Conserved Salt-Bridge Competition Triggered by Phosphorylation Regulates the Protein Interactome. J.J. Skinner, S. Wang, J. Lee, C. Ong, R. Sommes, S. Sivaramakrishnan, W. Koelmel, M. Hirschbeck, H. Schindelin, C. Kisker, K. Lorenz, T. Sosnick, M.R. Rosner, *ShanghaiTech Univ., People's Republic of China, Toyota Tech. Inst. at Chicago, Univ. of Chicago, Univ. of Minnesota and Univ. of Würzburg, Germany*

**B332 533.101** Allosteric Regulation of Protein Kinases Using Optogenetics. M. Shaaya, V. Huyot, A. Zhurikhina, D. Tsygankov, V. Natarajan, A. Karginov, *Univ. of Illinois at Chicago and Georgia Inst. of Technology*

**B333 533.102** Thermo-Responsive Estrogen Receptor-Fusions for Spatiotemporal Control of Signaling and Gene Regulation. A.T. Truong, Z. Li, C.T. Okamoto, J.A. MacKay, *Univ. of Southern California*

**B334 533.103** Utilizing an Optogenetic System for Manipulating Protein Localization in Fission Yeast. M. Mehdi, J.W. Goss, *Wellesley Col.*

**B335 533.104** Temporal Regulation and Functional Impact of Erk Activity Near the Plasma Membrane. J. Keyes, A. Ganesan, J. Zhang, *UCSD and John Hopkins Univ. Sch. of Med.*

**B336 533.105** Role of the Spc105 Complex in Organization and Microtubule-Binding Activity of the Budding Yeast Kinetochore. J. O. Kim, A. Zelter, R. Johnson, M.J. MacCoss, C.L. Asbury, T.N. Davis, *Univ. of Washington*

**B337 533.106** C-Terminal Domain of Mad1 Interacts with Mad2 to Catalyze O-C Mad2 Conversion in Coordination with Mitotic Checkpoints. N.D.M. Nguyen, E. Ahmad, S-T. Liu, *Wabash Col. and The Univ. of Toledo*

**B338 533.107** Localization of the Mutant Seg1 Protein to Sites of Cell Division in the Filamentous Fungus *Aspergillus nidulans*. U. Ugwu, L. Jackson-Hayes, T.W. Hill, *Lemoyne-Owen Col. and Rhodes Col.*

**B339 533.108** Roles of Inn1, Cyk3, and Paxb Proteins in Cytokinesis in the Filamentous Fungus *Aspergillus nidulans*. M. Williamson, L. Rowland, S. Beckman, L. Jackson-Hayes, T.W. Hill, *Rhodes Col.*

**B340 533.109** Depletion of Crbn Leads to Proliferative Cellular Senescence by Altering the Level of Cell Cycle Proteins. S-J. Jeon, Y-S. Yoon, S-J. Yang, C-S. Park, *Gwangju Inst. of Science and Technology, Republic of Korea and Korea Res. Inst. of Chemical Technology, Republic of Korea*

**B341 533.11** Disease-Causing Mutations of Lamin A Lead to Loss of Calcium Homeostasis in the Endo/Sarcoplasmic Reticulum. Y-H. Chi, W-H. Lin, W-P. Wang, C-H. Kao, J-Y. Wang, Y-C. Teng, T-F. Tsai, *Nat'l. Health Res. Inst.s, Taiwan, Chang Gung Christian Univ., Taiwan and Nat'l. Yang-Ming Univ., Taiwan*

**B342 533.111** The RXFP3-GIT2 Signaling System Represents a Potential Multidimensional Therapeutic Target in Age-Related Disorders. J. van Gastel, J. Hendrickx, H. Laysen, L.M. Luttrell, M-H.M. Lee, A. Azmi, J. Janssens, S. Maudsley, *Univ. of Antwerp VIB, Belgium and Med. Univ. of South Carolina*

**B343 533.112** Dietary Glycine Supplementation Extends Lifespan of Genetically Heterogeneous Mice. J. Brind, R.A. Miller, R. Strong, D.E. Harrison, F. Macchiarini, *Baruch Col., City Univ. of New York, Univ. of Michigan, The Univ. of Texas HSC at San Antonio, The Jackson Lab., Nat'l. Inst. on Aging and Nat'l. Inst.s of Health*

**B344 533.113** Role of Necroptosis in Aging and Age-Associated Inflammation. D. Sathiyaseelan, A. Richardson, *Univ. of Oklahoma Health Sciences Ctr.*

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**B345 534.1** Virulence and Drug Resistance of Burkholderia and Ralstonia Species Isolated from International Space Station Potable Water Systems. K. Khieu, S. Cohen, V. Thai, S. Anderson, H. Lee, A. O'Rourke, *UCSD and J. Craig Venter Inst.*

**B346 534.2** Elucidating the Role of *Rhipicephalus sanguineus* (The Brown Dog Tick) as a Vector for Rocky Mountain Spotted Fever (RMSF) Transmission in Arizona. J.W. Allen, T. Yao, S. Lisowski, N. Goetz, J. Hernandez, R. Kreisler, J.K. Lee, J. VandenBrooks, M. Quinlan, *Midwestern Univ.*

**B347 534.3** Bacteriological Evaluation of Essential-Oil Based Products from a Local Small Business. A.A. Santos, Jr., R. Butler, C. Gillen, A.B. Santos, F.B.O. Santos, *Adventist Univ. of Health Sciences and Florida Hosp.*

**B348 534.4** Effect of Fiber Concentration on the Growth of *Lactobacillus rhamnosus*. A.B. Santos, C. Gillen, F.B. O. Santos, A.A. Santos, Jr., *Adventist Univ. of Health Sciences and Florida Hosp.*

**B349 534.5** Bacterial Colonization and Partial Degradation of Plastic Debris in California Coastal Waters. A. M. Barral, A. Leask, E. DeForce, W. Ochoa, R.E. Simmons, *Nat'l. Univ., Scripps Institution of Oceanography, UCSD*

**B350 534.6** *Sinorhizobium Meliloti* Bacteriophage Hmsp-I-Susan: Genome Sequence, Molecular Characterization and Implications for Symbiosis. B. Fleagle, A. Imamovic, B. Martinez-Vaz, *Hamline Univ.*

**B351 534.7** Effects of Cell Wall Perturbation Reagents and Plant Phenolic Compounds on Growth, Colony Morphology, and Germination of the Corn Rot Fungus *Fusarium verticillioides*. P.N. Pierson, H. Hardtke, D.W. Brown, K.L. McQuade, *Bradley Univ., United States Dept. of Agriculture, Agricultural Res. Service and Nat'l. Ctr. for Agricul*

**B352 534.8** Changes in Membrane Lipids in Soybean Leaves in Response to Soybean Aphid Infestation. G.C. MacIntosh, K. Nguyen, J. Hohenstein, *Iowa State Univ.*

**B353 534.9** Investigating the Contribution of *Sinorhizobium Meliloti* Flagella on Biofilm Formation and Symbiosis During Host Colonization. Z.A. Amir, J.C. Chen, *San Francisco State Univ.*

**B354 534.1** Identification of Batrachochytrium Dendrobatidis Inhibiting Isolates via Challenge Against Salamander Skin Microbiota. F.M. Erdman, A. Hill, G. Russell, J. Griffith, M. Wharton, D. Walker, *Tennessee Tech. Univ.*

**B355 534.11** Identification of Probiotic Bacteria from the Cutaneous Microbiome of Endangered Tennessee Bats. M. Wharton, O. Bowers, B. Jones, A. Moore, M. Grisnik, J. Munafo, D. Walker, *Tennessee Tech. Univ., Univ. of Tennessee and Knoxville*

**B356 534.12** Evaluation of Homogenization Methods for Extraction of Live Bacteria and Recombinant DNA in Soil. C. Proctor, J. Atwood, B. Easparro, Z. Morehouse, *Omni interNat'l.*

**B357 534.13** The Growth of *Fusarium oxysporum* Spore Isolates from Potato Is Inhibited by 1,4-Dimethylnaphthalene. R. Adams, M. Campbell, *Penn State Behrend*

**B358 534.14** Effects of a Six Week Aerobic Exercise Intervention on the Composition of Oral and Skin Microbiota: A Pilot Study. L. Mailing, J. Allen, G. Niemi, J. Cohrs, H. Holscher, M. De Lisio, J. Woods, *Univ. of Illinois at Urbana-Champaign, The Ohio State Univ. and Univ. of Ottawa, Canada*

**B359 534.15** Characterizing the Interaction Between Bacterial Derived Carbohydrates and Cyr1 and Its Role in Hyphal Growth in *Candida albicans*. S. Mashayekh, J. Burch, D. Wykoff, C. Grimes, *Univ. of Delaware and Villanova Univ.*

**B360 534.16** Anaerobic 4-Hydroxyproline Metabolism by a Widespread Microbial Glycyl Radical Enzyme. Y.Y. Huang, L. Backman, B. Gold, R.T. Raines, C.L. Drennan, E.P. Balskus, *Harvard Univ. and Massachusetts Inst. of Technology*

**B361 534.17** Composition and Viability of the Microbial Flora of the Sigmoid Colon Obtained from Embalmed Human Cadavers. R.E. Fracassi, J. Holz, M. Pace Olivieri, J. Davie, D'Youville Col. and D'Youville Col.

**B362 534.18** Dietary Fat Quality and Sex Influence Diversity and Relative Abundance of the Colonic Bacterial Community Structure in Aged CD-1 Mice. A. Unger, T. Jetton, J. Kraft, *The Univ. of Vermont*

**B363 534.19** Functional Changes in the Gut Microbiota Across the Hibernation Cycle Examined by Stable Isotope-Assisted Labeling. S.R. Gugel, E. Chiang, M.D. Regan, F.M. Assadi-Porter, H.V. Carey, *Univ. of Wisconsin-Madison*

**B364 534.2** Microbiome Alteration: Potential Signature to Discriminate Features Associated with Tbi vs. Psychological Stress. R. Kumar, J.C. DeMar, N. Chakraborty, A. Gautam, A. Hoke, G. Dimitrov, J.G. Rosenberger, A.B. Batuure2, D.J. Bloodgood, D.M. Wilder, V. Sajja, R. Hammamieh, M. Jett, J.B. Long, *U.S. Army Ctr. for Environmental Health Res. and Walter Reed Army Inst. of Res.*

**B365 534.21** Effects of Moderate Voluntary Ethanol Consumption on the Rat and Human Gut Microbiome. N.J. Pinkowski, K.L. Kosnicki, J.C. Penprase, P. Cintora, P.J. Torres, G.L. Harris, S.M. Brasser, S.T. Kelley, *San Diego State Univ.*

**B366 534.22** The Metabolism of Fluoropyrimidine Anticancer Drugs by the Human Gut Microbiome. P. Spanogiannopoulos, A.D. Patteron, P.J. Turnbaugh, *Univ. of California, San Francisco and Pennsylvania State Univ.*

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**B368 535.2** Atrazine Inhibition of Murine Electron Transport Chain: A Cure Biochemistry Laboratory. D.J. Martin, *Saint Mary's Univ. of Minnesota*

**B369 535.3** Leadership Skill Development in an Undergraduate Biochemistry Lab. D.E. Rhoads, *Monmouth Univ.*

**B370 535.4** Crispr/Cas9 in Yeast as a Tool for Teaching and Reinforcing Molecular Biology Concepts to Undergraduates. R.J. Ulbricht, *Missouri State Univ.*

**B371 535.5** Pilot Implementation of a Cell Culture-Based Educational Module in a Gateway Cellular and Molecular Biology Course at a Liberal Arts Pui. B. Tran, A. Aguanno, *Marymount Manhattan Col.*

**B372 535.6** Laboratory Experiences in Sophomore Level Cell and Molecular Biology Laboratories: What Works?. M. Huff, R. Booth, M. Van Stry, Q. Vega, *Bellarmino Univ., Univ. of the Incarnate Word, Lane Col. and Montclair State Univ.*

**B373 535.7** Johns Hopkins Science Policy Group: Training Scientists to Be Effective Advocates and Communicators. C. Matney, R. Sima, J. Carlson, L. Cairns, K. Wood, D. Pham, *John Hopkins Univ. Sch. of Med., Johns Hopkins Univ. Sch. of Med. and American Society for Biochemistry and Molecular Biology*

**B374 535.8** Fresh-Freshman Research Engagement in Science: Early Results. M.K. Watters, P. Bouyer, R. Clark, *Valparaiso Univ.*

**B375 535.9** Establishing Practices Integrating Commuter Students-Year I. M.K. Watters, M. Capaldi, K. Bugajski, K. Schmitt, J. Schoer, B. Dahlke-Goebbert, *Valparaiso Univ.*

**B376 535.1** Meeting the Challenges of Minorities in Higher Education: A Review of the Underrepresentation of Hispanics in Medical School. A.J. Miller, R.A. Ynalvez, *Texas A&M InterNat'l. Univ.*

**B377 535.11** A Network Approach to Vertical Transfer and Articulation for Student Success in Biology: A Fourth Workshop Hosted by the Northwest Biosciences Consortium RCN-UBE. A. Kruchten, E. Baumgartner, A. Beadles-Bohling, J. Brown, J. Duncan, L. Kayes, S. Kiser, S. Seidel, W. Shriner, S. Stavrianeas, C. Tillberg, *The Col. of St. Scholastica, Western Oregon Univ., Univ. of Portland, Linfield Col., Willamette Univ., Oregon State Univ., Lane Community Col., Pacific Lutheran Univ. and Mount Hood Community Col.*

**B378 535.12** Lee University's Integrated Math and Science Scholars Program; Cohort I Results. S. Daft, J. Mitchum, S. Schlosser, S. Kasper, *Lee Univ.*

**B379 535.13** Research Experiences Yield Positive Psychosocial Outcomes for Transfer Students. J.T. Beckham, P. Metola, L. Strong, S. Engelman, S. Rodenbusch, *The Univ. of Texas at Austin*

**B380 535.14** An Intensive Preparatory Program for Incoming Freshmen Biology Students Improves Performance and Retention. A.C. Shor, C. Clauson-Kozina, L. Altfeld, C.J. Miller, *Saint Leo Univ.*

**B381 535.15** Mams: A Biochemistry and Molecular Biology Rich Collaborative Bridge Program to Doctoral Graduate and Health Professional School. M. Taylor, *Pacific Northwest Univ. of Health Sciences*

**B382 535.16** Diet and Fitness Genetic Screening an Approach to Understand Genetic Diversity and Optimize Wellness in Saudi Arabia. F. Dhawi, *King Faisal Univ., Saudi Arabia*

**B383 535.17** Analysis of Assessment on Biochemistry Threshold and Core Concepts in Students with Varying Chemistry Backgrounds. K. Keenan, *Stockton Univ.*

**B384 535.18** "Community Problem Based Learning to Prepare Students for Real-World Stem Opportunities". A.J. Tabor, R. Woodruff, K.M. Kesler, M. Bell, D.K. Ross, B. Neilson, R. Gray, *Northern Arizona Univ., STEM City and CAVIAT*

**B385 535.19** The First-Year Research Advancement Program (Frap): Fostering Persistence of Underrepresented Students in Biology and Chemistry. K.V. Mills, J. Paxson, *Col. of the Holy Cross*

**B386 535.2** Interdisciplinary Undergraduate Research Program with a Travel Component at Mount Saint Mary's University Los Angeles to Promote Success of Women in Stem. L.A. Nogaj, *Mount Saint Mary's Univ. and Los Angeles*

**B387 535.21** Mentorship for Developing Course-based Undergraduate Research Experiences (Cures): The Council on Undergraduate Research (Cur) Mentorship for Integrating Research into the Classroom (Miric) Program. M.J. Wolyniak, K.K. Resendes, *Hampden-Sydney Col. and Westminster Col.*

**B388 535.22** Advancing Professional Development Strategies for Undergraduates in Chemistry and Biochemistry. C. Brown, A. Fallucca, T. Makris, *Univ. of South Carolina*

**B389 535.23** Use of Videos in Traditional and Online Classes as Instruction and Assessment Accessibility Tools. S. Connelly, *Rochester Inst. of Technology*

**B390 535.24** Creativity in Biomedical Science Education. J.O. Macaulay, A.M. Kim, C.J. Speed, *Monash Univ., Australia*

**B391 535.25** A Competency-Based Approach to Developing Biomolecular Visual Literacy. D.R. Dries, D.M. Dean, M.A. Franzen, H.V. Jakubowski, W.R.P. Novak, K. Procko, A.I. Roca, C.R. Terrell, *Juniata Col., Univ. of Saint Joseph, Milwaukee Sch. of Engineering, Col. of St. Benedict/St. John's Univ., Wabash Col., Minority Postdoc.org and Univ. of Minnesota Rochester*

**B392 535.26** Twin Talk Series: A Novel Method to Foster Peer-to-Peer Pedagogical Training. A.K. Brown, G. Martinez-Gálvez, K.E. Coffman, W.E. Matchett, B.F. Horazdovsky, *Mayo Clinic*

**B393 535.27** Stress and Burnout in Graduate Students: The Role of Work-Life Balance and Mentoring Relationships. T.M. Evans, L. Bira, J.B. Gastelum, L.T. Weiss, N.L. Vanderford, *The Univ. of Texas HSC at San Antonio, St. Mary's Univ. and Univ. of Kentucky*

**B394 535.28** Graduate Student Professional Development and a Cure-Style Course and Peer-Reviewed Student Publications. J. Baumgartner, J. Lee, M.L. Kuhn, *San Francisco State Univ.*

**B395 535.29** Biosteps: Biochemistry Problem Solving and Its Role in Undergraduate Success and Persistence. P.P. Lemons, C.A. Sensibaugh, S.M. Halmo, S. Jeong, R. Idsardi, K.S. Bhatia, *Univ. of Georgia*

**B396 535.3** Encouraging Student Interest in Summer Research Experiences Using a Peer-Teaching "Speed Dating" Model. A. Kruchten, K. Glesener, L. Qson, M. Talaga, T. Trygstad, *The Col. of St. Scholastica*

**B397 535.31** Use of Biometrics to Determine Differences in How Biochemistry Experts and Novices Read Metabolic Pathways. K. Linenberger Cortes, K. Kammerdiener, A. Randolph, *Kennesaw State Univ.*

**B398 535.32** Integrating Undergraduate Molecular Biology and Biochemistry: The Development of a Program Capstone Laboratory Based on Authentic Research. G. Crawford, *Mercer Univ.*

**B399 535.33** How to Make Red Yeast: An Undergraduate Laboratory Using Crispr/Cas9 Technology to Target ADE2 in Budding Yeast. K.P. Callahan, *St. John Fisher Col.*

**B400 535.34** The Genomics Education Partnership: Course-Based Research Experiences for Undergraduates. M. Van Stry, K. Saville, W. Leung, D. Lopatto, S.C. R. Elgin, *Lane Col., Albion Col., Washington Univ. in St. Louis and Grinnell Col.*

**B401 535.35** Gamification of Learning in an Introductory Cell Biology Class. E. Beaulieu, C. Petit-Turcotte, *Univ. of Ottawa, Canada*

**B402 535.36** Undergraduate Biology Students View Scientific Models as Easy-to-Learn Simple Explanations. C. Trujillo, S. Bennett, T. Long, *Michigan State Univ. and Bethel Univ.*

**B403 535.37** Using *Frankenstein* to Teach Ethics and Code of Conduct in an Undergraduate Science Course. J.T. Tansey, *Otterbein Univ.*

**B404 535.38** Math-Up Skills Test (Must): As a Predictor of Success in General Chemistry. A. Chen, B. Mamiya, D. Mason, *Texas State Univ. and Univ. of North Texas*

**B405 535.39** Molecular Oncology Research Laboratory Course for Undergraduate Students. L.M. Carastro, *Univ. of Tampa*

**B408 536.3** Quantification of Propionate. M. Doan, S. Trefely, J. Xu, J. Polanco, N. Snyder, *Drexel Univ.*

**B409 536.4** Elucidating the Role of a Putative Monooxygenase in the Catabolism of Nicotinic Acid and Nicotine by *Bacillus Niacini*. S. Fine, M.J. Snider, *Col. of Wooster*

**B410 536.5** S-succinylcysteine Breakdown—How *Bacillus Subtilis* Utilizes an Inevitable Product of Metabolite Damage. T.D. Niehaus, J. Folz, D.R. McCarty, V. de Crécy-Lagard, D. Moraga, O. Fiehn, A.D. Hanson, *Univ. of Florida, UC, Davis*

**B411 536.6** The Catabolism of Nicotinic Acid and Nicotine and the Role of a Putative Monooxygenase in *Bacillus Niacini*. S.R. Fine, K.M. Zoretich, M.J. Snider, *Col. of Wooster*

**B412 536.7** Toxic Effect of Resveratrol Induced by Energy Restriction on Mitochondrial Dysfunction in Mouse Hepatocytes. L. Camacho, M. Ramos Gomez, L. A. Madrigal Perez, J. L. Rosado Loria, *Universidad Autonoma De Queretaro, Mexico and Instituto Tecnológico Superior de Ciudad Hidalgo, Mexico*

**B413 536.8** mTOR Signaling in Adipose Tissue Influences Systemic Lipid Metabolism. L. M. Paoella, C. Tran, K. Chellappa, S. Mukherjee, J. G. Davis, A. Wilson, E. Edouard, S. Shewale, D. J. Rader, J. A. Baur, *Univ. of Pennsylvania*

**B414 536.9** Cytoplasmic Pfk-2 Activity Affects Mitochondrial Pdk4 Levels in the Heart. M.F. Newhardt, M. Kinter, K.M. Humphries, *Oklahoma Med. Res. Foundation*

**B415 536.1** Fine-Tuning of Hepatocyte Calcium Signaling and Liver Regeneration by the Mitochondrial Calcium Uniporter. A. Noronha Antony, M. Katona, E. Juskeviciute, J.W. Elrod, G. Hajnóczky, J.B. Hoek, *Thomas Jefferson Univ., Lewis Katz Sch. of Med. and Temple Univ.*

**B416 536.11** Deletion of Muscle Acs11 Caused Myopathy and Fiber Switch. L. Zhao, L. Bacudio, A.L. Suchanek, P.A. Young, F. Pascual, R.A. Coleman, *Univ. of North Carolina at Chapel Hill*

**B417 536.12** Analysis of Degradation of Metabolic Proteins During Starvation. C. Peterson, N. Maragos, A. Papaj, P. Ngo, A. Mendes, T. Von Rosen, *Suffolk Univ.*

**B418 536.13** Chemical Composition of the Pepper Fruit (*Dennettia Tripetala*) Seed Flour. F.L. Oyetayo, O.L. Ogundare, *Ekiti State Univ., Nigeria*

**B419 536.14** The Dose-Related Effects of Doxorubicin Chemotherapy on Interstitial Amino Acid Concentrations in Skeletal Muscle. D. MacLean, S. Fabris, *Northern Ontario Sch. of Med., Canada and Laurentian Univ., Canada*

**B420 536.15** Monomethyl Branched Chain Fatty Acids Link Mitochondrial Amino Acid Metabolism and Adipose Tissue Lipogenesis to Fatty Acid Diversity. M. Wallace, C. Green, L. Roberts, M. Lee, P. Cabrales, J. Ayres, D. Nomura, R. Loomba, C. Metallo, *UCSD, Univ. of California, Berkeley and Salk Inst.*

**B421 536.16** Requirement of Fatty Acid Oxidation to Attenuate Cardiac Hypertrophy. K.L. Harris, A.S. Pereyra, J.M. Ellis, *Purdue Univ.*

**B422 536.17** Effect of a Deletion of Mitochondrial DNA on Cell Growth, Mitochondrial DNA Content, and Metabolic Activity. C. Keck, M.K. Gulfo, W. Pogozelski, *State Univ. of New York Col. at Geneseo*

**B423 536.18** Consequences of Cytochrome C Oxidase Assembly Defects for the Yeast Stationary Phase. A.F. Dubinski, D.M. Glerum, *Univ. of Waterloo, Canada*

**B424 536.19** Oxidative Phosphorylation Complex Interactions in Intact Mitochondria. B.M. Rabbitts, F. Liu, P. Lossi, R.S. Balaban, A.J. R. Heck, *Nat'l. Heart, Lung, and Blood Inst., Nat'l. Insts. of Health, FMP Berlin, Germany and Univ. of Utrecht, Netherlands*

**B425 536.2** Exploration of a *pho13* Knockout Growth Phenotype in Non-Engineered Strains of *Saccharomyces Cerevisiae*. F. Ulerio-Nunez, M. Gjestvang, S.F. O'Handley, A.U. Gehret, *Rochester Inst. of Technology, Nat'l. Tech. Inst. for the Deaf and Rochester Inst. of Technology*

**B426 536.21** Leigh Syndrome Cell Model Development. J. Alverado, N. DeCuzzi, J. Hsueh, S. Madira, N. Lanning, *California State Univ. and Los Angeles*

**B427 536.22** A Novel Approach to Characterize Size Variance in Third Instar Larvae Following Multi-generational Dietary Modification. G. Arnal, R.P. Rogers, *Wentworth Inst. of Technology*

**B428 536.23** Ally Sulfide Epigenetically Targets Cellular Senescence and Prevents Age-Related Bone Loss in Mice. J. Behera, N.K. Mandal, K.E. Kelly, N. Tyagi, *Univ. of Louisville*

**B429 536.24** Organ Reserve, Excess Metabolic Capacity, and Aging. H. Atamna, J. Dhahbi, *Centre Universitaire de Santé McGill*

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**B406 536.1** Sub-Chronic Exposure to Organic Arsenic Disrupts Hepatic Energy Metabolism and Antioxidant System. D.O. Babayemi, O.E. Adeyi, A. Dosumu, H.T. Adubiagbe, M.T. Abdulsalaam, A. Tijani, F.M. Olaleye, T.F. Akinhanmi, R.N. Ugbaja, O. Ademuyiwa, *Federal Univ. of Agriculture and Abeokuta, Nigeria*

**B407 536.2** Mechanism of Obesity Suppression by Adipose Tissue Creatine Energetics. L. Kazak, G.Z. Lu, B.M. Spiegelman, *McGill Univ., Canada and Dana-Farber Cancer Inst.*

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**B431 537.2** The Rising of Acylsugar Diversity: Metabolic Innovation in Tomato Trichomes Through Bahd Enzyme Promiscuity and Pathway Evolution. P. Fan, A.M. Miller, A.D. Jones, X. Liu, R.L. Last, *Michigan State Univ.*

**B432 537.3** Type III Polyketide Synthase Involved in Tropane and Granatane Alkaloid Biosynthesis. N. Kim, J.C. D'Auria, *Texas Tech Univ.*

**B433 537.4** The Effect of Increased Glycerol Availability on Triacylglycerol Production in *Chlorella Vulgaris*. E.L. Higginbotham, *Marshall Univ.*

**B434 537.5** Cross-Talk Among Biochemical Defense Pathways in *Arabidopsis thaliana*. A. Peterson, E. Bien, C. Olson-Manning, S. Matzner, *Augustana Univ.*

**B435 537.6** A Systems Approach Toward Elucidating the Molecular Basis of Tropane Alkaloid Metabolism. J.C. D'Auria, *Texas Tech Univ.*

**B436 537.7** Identification and Characterization of Daurichromenic Acid Synthase from *Rhododendron Dauricum*. F. Taura, M. Iijima, F. Kurosaki, *Univ. of Toyama, Japan*

**B437 537.8** Effects of a Sethoxydim-Based Herbicide on the Photosynthetic Capacity of *Chlorella Vulgaris*, a Non-Target Organism. A.L. Smythers, A. Garmany, N. Perry, P.E. Adkins, E. Higginbotham, D.R. J. Kolling, *Marshall Univ.*

**B438 537.9** Characterization of the Pyrimidine Catabolic Pathway of *Oryza Sativa*. M.A. Rincón, H.Y. Narvaez-Ortiz, A.J. López, B.H. Zimmermann, *Universidad de los Andes, Colombia*

**B439 537.1** Pleiotropy and Flux Control in the Indolic Biochemical Pathways in *Arabidopsis thaliana*. J.J. Kack, T.K. Leean, *Augustana Univ.*

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**B441 538.2** Antioxidants Protect Diaphragm Function Subjected to Ionizing Irradiation. L. Zuo, L. Lu, S. Wu, T. Zhou, *The Ohio State Univ. Col. of Med., The Ohio State Univ. James Cancer Hosp. and Ohio Univ.*

**B442 538.3** Ubiquinone Is a Key Antioxidant During Long Chain Fatty Acid Metabolism in *Escherichia Coli*. S. Agrawal, K. Jaswal, A. Shiver, H. Balecha, T. Patra, R. Chaba, *Indian Inst. of Science Education and Res., India and Stanford Univ.*

**B443 538.4** Hyperhomocysteinemia-Mediated Endoplasmic Reticulum Stress in Skeletal Muscle Dysfunction via JNK/Pro-Inflammatory Pathway. A. Majumder, J. Behra, M. Singh, N. Tyagi, S.C. Tyagi, *Univ. of Louisville*

**B444 538.5** The Expression of Glutathione S-Transferase Isotopes, Alpha, Mu and Pi, in Mice (*Mus Musculus*) Chronically Exposed to Atrazine. A. Schadler, D. Martin, *Saint Mary's Univ. of Minnesota*

**B445 538.6** Role of Gstm1 and Gstm1 Gene Polymorphism for Development of Preeclampsia in Bangladeshi Women. L. Akther, M.M. Rahman, M.E. S. Bhuiyan, M.B. Hosen, A. Nesa, Y. Kabir, *Reproductive Health Services Training and Education Program, Bangladesh, Dhaka Univ., Bangladesh and Ibrahim Med. Col. Hosp., Bangladesh*

**B446 538.7** Effect of a Sulforaphane and Maitake Mushroom Extract Combination on the Expression of Glutamate Cysteine Ligase. S.A. Erwin, S.L. Ownby, G.A. Cornblatt, *Nutraceutical Laboratories*

**B447 538.8** Exploring the Role of Trehalose-6-Phosphate Synthase in Oxidative Stress Tolerance of *Fusarium Verticillioides*. S.D. McMillan, N.R. Oberlie, D.W. Brown, K.L. McQuade, *Bradley Univ., United States Dept. of Agriculture, Agricultural Res. Service and Nat'l. Ctr. for Agricult*

**B448 538.9** Phosphoproteomics Analyses Reveal That Phosphorylation of Heat Shock Protein 70 (Hsp70) by Protein Kinase B (Akt1) on Ser<sup>631</sup> Controls Activity of Mitochondrial Superoxide-2 (Sod2). A.J. Afolayan, S.M. Zemanovic, G.G. Konduri, *Med. Col. of Wisconsin*

**B449 538.1** Characterization of Transferrin-I from *Drosophila Melanogaster*. M.J. Gorman, L.M. Brummett, L.A. LeSuer, J.J. Weber, M.R. Kanost, *Kansas State Univ.*

**B450 538.11** Vespa Amino Acid Mixture (Vaam) Enhances Electron and Proton Transport in Mitochondria and Leads to Excessive Reactive Oxygen Production. A. Mohamed, S. Stowers, K. Clark, M. Dameron, A. Weikel, E. Colon, S.B. Redmond, *Radford Univ.*

**B451 538.12** The L Type Calcium Channel Ca<sub>v</sub>1.2 Modulates Mitochondrial Calcium Homeostasis and Cell Death. M. Noterman, M-K. Shin, E. Vazquez-Rosa, C. Cintrón-Pérez, A. Rajadhyaksha, E. Taylor, A. Pieper, *Univ. of Iowa, Weill Cornell Med. and Cornell Univ.*

**B452 538.13** Protective Effect of *Larportea Aestuans* Extract on Diclofenac-Induced Oxidative Stress in the Brain of Male Wistar Rats. O.E. Omotosho, D. Ogunlade, *Covenant Univ., Nigeria*

**B453 538.14** The Role of Glutathione Maintenance in Protection Against Advanced Glycation End Product Induced Neurite Degeneration in Sh-Sy5y Cells. M.A. Stochelski, T.M. Wilmanski, J.R. Burgess, *Purdue Univ.*

**B454 538.15** Understanding How the Protein Environment Accelerates Cofactor-Free O<sub>2</sub> Activation in Antibiotic Biosynthesis Monooxygenases (Abms). E. Ellis, M.M. Machovina, J.L. DuBois, *Montana State Univ.*

**B455 538.16** Chebulic Acid Against t-BHP-Induced Effect via Modulations of Nrf2 and Its Related Enzymes in HepG2 Cells. K. Lee, H-L. Jung, S-Y. Yang, *Korea Univ., Republic of Korea*

**B456 538.17** Citrus Polymethoxyflavones (Pmfs) Inhibit 12-O-Tetradecanoylphorbol 13-Acetate (TPA) Induced Mouse Skin JB6 P+ Cell Transformation Through the Activation of Nrf2 Pathway. Z-Y. Su, G-W. Pan, C-L. Tsai, H-X. Wu, G-J. Wei, *Chung Yuan Christian Univ., Taiwan and Kainan Univ., Taiwan*

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**B457 539.1** Feedback Regulation of Hmg-CoA Reductase in Livers of Mice. S. Su, K. Garland, Y. Jo, S. Hwang, G. Young, I. Fuentes, M. Schumacher, R. Elsabrouty, B. Johnson, R.A. Debose-Boyd, *The Univ. of Texas Southwestern Med. Ctr.*

**B458 539.2** Phosphorylation of Yeast Nem1-Spo7 Protein Phosphatase Complex by Protein Kinase C. P. Dey, W-M. Su, G-S. Han, G.M. Carman, *Rutgers Univ.*

**B459 539.3** Long Non-Coding RNA H19 Serves as a Lipid Sensor to Reprogram Hepatic Lipid and Glucose Homeostasis by Interaction with RNA Binding Protein Ptbp1. Z. Yang, C. Liu, J. Wu, D-J. Shin, M. Tran, L. Wang, *Univ. of Connecticut*

**B460 539.4** A Conserved Degron Containing an Amphipathic Helix Regulates the Cholesterol-Mediated Turnover of Human Squalene Monooxygenase, a Rate-Limiting Enzyme in Cholesterol Synthesis. N. K. Chua, V. Howe, N. Jatana, L. Thukral, A.J. Brown, *Univ. of New South Wales Sydney, Australia and CSIR-Inst. of Genomics and Integrative Biology, India*

**B461 539.5** Activation of PPAR $\gamma$  Inhibits Hepatic Cholestasis with Involvement of Nogo-B Expression. S. Zhang, *Nankai Univ., People's Republic of China*

**B462 539.6** Med17 Is Phosphorylated at S53 by Ck2 for Transcriptional Activation of Lipogenic Genes in Response to Insulin. J.A. Viscarra, Y. Wang, H. S. Sul, *Univ. of California and Berkeley*

**B463 539.7** Mutation in mon2, Which Encodes a Protein Implicated in Vesicular Transport, Affects Response to Exogenous Fatty Acids in Yeast. R. Draper, A. Gasparotto, M. Soni, B. Gasper, J. Stukev, V. McDonough, *Hope Col.*

**B464 539.8** PCSK9 Reduces Hepatic Lipid Content and Confers Protection Against Er Stress and Ros in HepG2 Cells. J. H. Byun, P. Lebeau, A. Al-Hashimi, K.C. Platko, B. Trigatti, N.G. Seidah, R.C. Austin, *McMaster Univ., Canada, Thrombosis and Atherosclerosis Res. Inst. (TaARI), Canada, Clinical Res. Inst. of Montreal and affiliated to the Univ. of Montreal, Canada*

**B465 539.9** Effects of Phosphorylation State on Perilipin 5 Localization and Trafficking. H.M. Bailey, J.T. Tansey, *Otterbein Univ.*

**B466 539.1** IL-6 and Bile Acids Are Skin-Derived Factors That Regulate Whole-Body Metabolism in SCD1 Deficient Mice. S.N. Dumas, C.-A. Guo, J.M. Ntambi, *Univ. of Wisconsin-Madison*

**B467 539.11** Dynamic Actin Reorganization and Vav/Cdc42-Dependent Actin Polymerization Promote Macrophage Aggregated LDL Uptake and Catabolism. R.K. Singh, A.S. Haka, P. Bhardwaj, F.R. Maxfield, *Weill Cornell Med. and Cornell Univ.*

**B468 539.12** Them1 Regulates the Subcellular Localization of Glycogen in Brown Adipocytes: Implications for Energy Homeostasis. Y. Li, S. Goyal, L.-H. Ang, D.E. Cohen, S.J. Hagen, *Beth Israel Deaconess Med. Ctr., Weill Cornell Med. and Cornell Univ.*

**B469 539.13** Characterization of Coq11, a Novel Protein Involved in the Biosynthesis of Coenzyme Q in *Saccharomyces Cerevisiae*. M.C. Bradley, H. Ibarra, A. Awad, H. Tsui, K. Yang, C. Allan, C. Clarke, *Univ. of California and Los Angeles*

**B470 539.14** Identification and Regulation of Nrnp1, a Novel Nutritionally Regulated Gene Involved in Cell Death. N.S. Cairl, V. Kalman-Maltese, C.M. Smas, *Univ. of Toledo*

**B471 539.15** Polyunsaturated Fatty Acids Directly Regulate Coenzyme Q Biosynthesis. L. Fernandez del Rio, M. I. Burón, C.F. Clarke, J. M. Villalba, *Univ. of California, Los Angeles and Univ. of Córdoba, Spain*

**B472 539.16** Lipid Droplet Size Determines Cooperation of Lipolysis and Lipophagy in Hepatocytes. M.B. Schott, S.G. Weller, R. Schulze, M.A. McNiven, *Mayo Clinic*

**B473 539.17** Nutrient Sensing and Mitochondrial Coenzyme Q Biosynthesis: Are They Connected by a Phosphatase? A.M. Awad, S. Venkataramanan, A. Nag, A.R. Galivanche, M.C. Bradley, L. Neves, S. Douglass, T.L. Johnson, C.F. Clarke, *Univ. of California and Los Angeles*

**B474 539.18** Fatty Acids Bind to the Star-Related Lipid Transfer Domain of Thioesterase Superfamily Member 1, a Master Regulator of Thermogenesis and Energy Expenditure. M.C. Tillman, E. Ortlund, *Emory Univ.*

**B475 539.19** The PhoP/PhoQ Two-Component Regulatory System Influences on *Escherichia Coli* Headgroup-Acylated Glycerophospholipids. A.S. DiNardo, T.A. Garrett, *Vassar Col.*

**B476 539.2** The PAH1-Encoded Phosphatidate Phosphatase Plays a Role in Lipogenesis in the Oleaginous Yeast *Yarrowia Lipolytica*. D. Hardman, R. Ukey, S. Fakas, *Alabama A&M Univ.*

**B477 539.21** Long-Chain Acyl-CoA Synthetase 6 Deficiency Reduces the Omega-3 Fatty Acid DHA in the Brain and Disrupts Motor Control. J.M. Ellis, R.F. Fernandez, Y. Zhao, J.L. Counihan, D.K. Nomura, J.A. Chester, *Purdue Univ. and Univ. of California*

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### Lipid Signaling

**B478 540.1** Chemoproteomic Discovery of Ligand Binding Hotspots in the Lipid Kinome. K.-L. Hsu, *Univ. of Virginia*

**B479 540.2** Cb1 but Not Cb2 Cannabinoid Receptor Increases Neurite Extension in Human Neuroblastoma. E.L. Lyons, S. Kabler, A. Howlett, A.L. Kovach, B. Thomas, *Wake Forest Univ. and RTI InterNat'l.*

**B480 540.3** A Novel Role of Sphingolipids and Mitochondria in Glutamate-Induced Programmed Necrosis in Oligodendrocytes. S.A. Novgorodov, J.A. Voltin, L. Li, M.A. Gooz, J.J. Lemasters, T.I. Gudiz, *Med. Univ. of South Carolina*

**B481 540.4** Cyst2r Is a Novel Therapeutic Target for Tumor Angiogenesis, Growth and Metastasis. L.R. Teegala, E. Duah, V. Kondeti, R. Adapala, C. Thodeti, S. Paruchuri, *Univ. of Akron and Northeast Ohio Med. Sch.*

**B482 540.5** A Reevaluation of the Role of Phosphatidylinositol Transfer Protein A in Growth Factor Signaling. M.I. McDermott, R. Diz, S. Hur, M.G. Lete, C.J. Applebee, A. Grabon, A. Tripathi, M.J. O. Wakelam, B. Larijani, V.A. Bankaitis, *Texas A&M Univ., Univ. of the Basque Country, Spain and Babraham Inst., United Kingdom*

**B483 540.6** Novel Biosensors for an Enigmatic Phosphoinositide. B. Goulden, J. Zewe, R. Wills, G. Hammond, *Univ. of Pittsburgh*

**B484 540.7** A Novel Multi-Domain Phosphatidylinositol Transfer Protein/Oxysterol Binding Protein Senses Specific Phosphoinositide Pools on *Toxoplasma Dense Granules*. A. Grabon, V.A. Bankaitis, *Texas A&M Univ.*

**B485 540.8** Metabolic Control of Two Dynamic Pools of Diacylglycerol in Budding Yeast. S. Ganesan, M. Tavassoli, M.L. Sosa, K. Wagner, M. Terebiznik, V. Zaremborg, *Univ. of Calgary, Canada and Univ. of Toronto, Canada*

**B486 540.9** Modified Hplc Method for Detection of Hydroxyoctadecadienoic Acid with Greater Sensitivity. N.J. Chesmore, W. Zhang, M.P. Richards, D. Shanmuganayagam, *Univ. of Wisconsin-Madison*

**B487 540.1** Pi(3,5)P<sub>2</sub> Regulates Vacuole Cation Transport to Mediate Cellular Osmoregulation. Z. Wilson, G. Odorizzi, *Univ. of Colorado Boulder*

**B488 540.11** Expression Profiling of Genes Regulated by Sphingosine Kinase 2 in a Murine Model of *Pseudomonas Aeruginosa* Mediated Acute Lung Inflammation. D.L. Ebenezer, P. Fu, Y.H. Krishnan, S.C. Jung, H. Hu, Z. Arbieva, R. Madduri, A.K. Harijith, V. Natarajan, *Univ. of Illinois at Chicago, Univ. of Chicago and Argonne Nat'l. Lab*

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**B489 541.1** Subcellular Distribution of Cholesterol and Sphingolipids in Rat Hepatocytes. B. Stieger, J. Steiger, N. Jiménez, I. Riezman, H. Riezman, *Univ. Hosp., Switzerland and Univ. of Geneva, Switzerland*

**B490 541.2** Lipid Raft Dynamics in the Adolescent Brain Under the Influence of Chronic Ethanol and Caffeine. D.E. Rhoads, C. O'Shea, M. Telatin, *Monmouth Univ.*

**B491 541.3** Brewster Angle Microscopy and Langmuir Monolayer Films: Construction of an Instrument and Basic Software Development for Visualization of Lipid Domains and Lipid Raft Formation. B.C. Allen, B.E. Sturgeon, A.G. Sostarecz, *Monmouth Col.*

**B492 541.4** Human Follicle Stimulating Hormone Receptor Lipid Raft Residency Is Hormone and Caveolin Dependent. H.E. Madden, A. Stewart, B.D. Cohen, *Union Col.*

**B493 541.5** Follicle Stimulating Hormone Receptor Signaling Is Regulated by Lipid Raft Residency. M.M. Wells, B.D. Cohen, *Union Col.*

**B494 541.6** Purification of Hepatocyte and Sinusoidal Endothelial Cells from Mouse Liver Perfusion. F. Cabral, C.M. Miller, K.M. Kudrna, B.E. Hass, J.G. Daubendiek, B.M. Keller, E.N. Harris, *Univ. of Nebraska-Lincoln*

**B495 541.7** The Effect of Spices on Cancer Incidence in Peru. P. Perez, R. Solomon, *Mount Saint Mary's Univ.*

**B496 541.8** Personalized Diagnosis for Lafora Disease, a Fatal Epilepsy. J.L. Wayne, M. K. Brewer, M.S. Gentry, *Univ. of Kentucky*

**B497 541.9** Uncovering Clinically Relevant Mutations in Membrane Transporters by Genetic Analysis Linked to the Determination of Erythrocyte Membrane Protein Expression. B. Sarkadi, B. Zambó, Z. Bartos, O. Mozner, E. Szabo, G. Varady, L. Homolya, *Inst. of Enzymology, Res. Centre for Natural Sciences and Hungarian Academy of Sciences, Hungary*

**B498 541.1** Phosphatidylinositol (4,5)-Bisphosphate Coordinates Functional Interactions in the Dopamine Transporter to Promote Amphetamine Behaviors. J. Aguilar, A. Shekar, H. Matthies, A. Galli, *Vanderbilt Univ. and Univ. of Alabama at Birmingham*

**B499 541.11** Effects of Vacuolar H<sup>+</sup>-ATPase Inhibition on Activation of Cathepsin B and Cathepsin L Secreted from MDA-MB231 Breast Cancer Cells. A.M. Hinton, A. Uhlman, K. Folkers, J. Liston, H. Pancholi, Denison Univ.

**B500 541.12** Functional Characterization of Single Nucleotide Polymorphisms in the *Tmem163* Gene. V. Sanchez, S. Ali, M.P. Cuajungco, California State Univ. and Fullerton

**B501 541.13** Nanodiscs: A Novel Approach to Studying the Methionine ABC Transporter System. M.G. Winslow, J.G. Yang, Univ. of San Francisco

**B502 541.14** Native Gel Electrophoresis Reveals Partial Physical Association of Band 3 and Aquaporins on the Erythrocyte Membrane. K. Hsu, Y-S. Li, H-J. Lin, Mackay Memorial Hosp., Taiwan

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**B503 542.1** Ca<sup>2+</sup>-Dependent Focal Exocytosis of Golgi-Derived Vesicles Helps Phagocytic Uptake in Macrophages. N.K. Vashi, Nat'l. Inst. of Immunology, India

**B504 542.2** ESCRT Membrane Scission Revealed by Optical Tweezers. J. Schöneberg, S. Yan, A.H. Bahrami, M. Righini, I-H. Lee, M-R. Pavlin, L-A. Carlson, D. Goldman, G. Hummer, C. Bustamante, J. Hurley, Univ. of California, Berkeley and Max Planck Inst. of Biophysics, Germany

**B505 542.3** Isolation of Phagosomes Containing Bovine Photoreceptor Outer Segments from Retinal Pigment Epithelial Cells by Magnetic Selection. R. Dorvilier, S. Shelby, Florida Southern Col.

**B506 542.4** Increasing Seed Iron Content by Gene Manipulation in *Arabidopsis*. Z. Ghalamkari, T.J. Buckhout, Humboldt Universität zu Berlin, Germany

**B507 542.5** Differential Effect of *Ocr1* Patient Mutations on Protein Localization, and Sensitivity to Fda-Approved Drug Suppression of Cellular Phenotypes Associated with Lowe Syndrome. S. Ramadesikan, K. Madhivanan, R.C. Aguilar, Purdue Univ.

**B508 542.6** mTOR-Dependent Selective Translation Rapidly Expands Lysosome Biogenesis, Volume and Retention Capacity During Phagocyte Activation. R. Botelho, V. Hipolito, K. Tandoc, I. Topisirovic, Ryerson Univ., Canada and McGill Univ., Canada

**B509 542.7** Nano-Scale Size Holes in ER Sheets Provide an Alternative to Tubules for Highly-Curved Membranes. S. Bahmanyar, L. Schroeder, A. Barentine, S. Schweighofer, D. Baddeley, J. Bewersdorf, Yale Univ. and Yale Sch. of Med.

**B510 542.8** Yck3 Dependent Phosphorylation of Env7 and Its Regulation During Cell Cycle in *Saccharomyces Cerevisiae*. S. Manandhar, S.P. Valencia, C. Alvarado, I. Mansoor, E. Gharakhanian, California State Univ. and Long Beach

**B511 542.9** Effects of the Cell Cycle on Vacuole Size in *S. Cerevisiae* Yeast. J.C. Sims, San Francisco State Univ.

**B512 542.1** Biomechanical Control of Lysosomal Secretion via the Vamp7 Hub: A Tug-of-War Mechanism Between Varp and Lrrk1. T. Gallii, G. Wang, S. Nola, S. Bovio, M. Coppey-Moisand, F. Lafont, Inst. Nat'l. de la Santé et de la Recherche Médicale (INSERM) U894, Inst. of France, Institut Pasteur de Lille, Nat'l. Ctr. for Scientific Res. UMR 8204 - INSERM U1019, Centre H, France, Metropolitan, Nat'l. Ctr. for Scientific Res. UMR7592 and Institut Jacques Monod, France

**B513 542.11** Inactivation of Dynamin 1 in *Cln1-I* Mouse Brain Contributes to Declining Synaptic Pool Size. M.B. Bagh, T. Sadhukhan, A.P. Appu, S. Casey, Z. Zhang, A.B. Mukherjee, Eunice Kennedy Shriver Nat'l. Inst. of Child Health and Human Development and Nat'l. Inst.

**B514 542.12** AP-3-Dependent Mechanisms Regulate the Trafficking of Atp8a1 to Lamellar Bodies in Alveolar Type 2 Cells. S. Kook, P. Wang, S. Meng, H.A. Hanby, A. Jaume, L. Goetzl, M.S. Marks, S.H. Guttentag, Vanderbilt Univ. Med. Ctr., The Children's Hosp. of Philadelphia and Temple Univ.

**B515 542.13** Yvc1 Acts as a Novel Suppressor of Vacuolar Membrane Fusion. G.E. Miner, A. Guo, K.D. Sullivan, R.A. Fratti, Univ. of Illinois at Urbana-Champaign

**B516 542.14** The Role of the Escrt Pathway in Prion Disease. J. Lawrence, UCSD

**B517 542.15** Dissection of the Erv41-Erv46 Retrieval Pathway Suggests a Redox-Regulated Mechanism. K. Keiser, A. Shibuya, C. Barlowe, Dartmouth Col.

**B518 542.16** The E3 Ubiquitin Ligase Wwp2 Regulates Endosomal Trafficking of the Purinergic Receptor P2y1. C.R. Kotsis, H. Singh, M.R. Does, Hofstra Univ.

**B519 542.17** Deciphering Trapp Complex Function in Yeast. A. Joiner, C. Fromme, Cornell Univ.

**B520 542.18** Automated Detection of GPCR Exocytic Events Reveals Distinct Recycling Populations. Z.Y. Weinberg, T. Phan, M.A. Puthenveedu, Univ. of Michigan and Carnegie Mellon Univ.

**B521 542.19** "Acetylation Controls Thyroid Hormone Receptor Intracellular Localization and Intranuclear Mobility". C.S. Anyetee-Anum, L.A. Allison, Col. of William and Mary

**B522 542.2** PML-Nuclear Bodies Regulate the Stability of the Fusion Protein Dendra2-Nrf2 in the Nucleus of Single Live Cells. A.F. Burroughs, S. Eluhu, D. Whalen, J.S. Goodwin, A.M. Sakwe, I.J. Arinze, Meharry Med. Col.

**B523 542.21** Gemcitabine and 5-Fu Disrupt Nuclear Transport and Subsequent Localization of P21, P27 and P53 in Cancer Cells. A. Nickle, K.K. Resendes, Westminster Col.

**B524 542.22** Lysophosphatidylcholine Analogues Alter Yeast Nuclear Envelope Architecture and Function. M.L. Sosa Ponce, J.A. Cobb, V. Zaremberg, Univ. of Calgary, Canada

**B525 542.23** The Unfolded Protein Response Regulator, Atf6, Promotes Mesodermal Differentiation. H. Kroeger, N. Grimsey, R.J. Paxman, W-C. Chiang, L. Plate, Y. Jones, P.X. Shaw, J. Trejo, S.H. Tsang, E. Powers, J.W. Kelly, R.L. Wiseman, J.H. Lin, UCSD, Scripps Res. Inst., Vanderbilt Univ. and Edward S. Harkness Eye Inst.

**B526 542.24** Targeting Differentially Expressed Up Mediators in Mucin-Rich Colorectal Cancers and Conventional Colorectal Adenocarcinomas. E.M. Nakada, S.R. Bruno, J. Miller, B. Korwin-Mihavics, N.L. Chamberlain, J. Ramsey, M. Zenali, S. Ades, V. Anathy, Univ. of Vermont and Univ. of Vermont Col. of Med.

**B527 542.25** Fic-Mediated Deamplification Is Not Dependent on Homo-Dimerization and Rescues Toxic Amplification in Flies. A.K. Casey, A.T. Moehlan, J.K. Zhang, K.A. Servage, H.K. Krämer, K. Orth, The Univ. of Texas Southwestern Med. Ctr. and Howard Hughes Med. Inst.

**B528 542.26** Characterization of Giv-Grp78 Interaction During Endoplasmic Reticulum Stress. C. Limso, J. Ngo, P. Nguyen, D. Bhandari, California State Univ. and Long Beach

**B529 542.27** Impaired Insulin-Like Growth Factor-I Function in X-Linked Adrenoleukodystrophy Patients. G.S. Dhaunsi, Kuwait Univ., Kuwait

**B530 542.28** Myosin IIA Is the Most Important Effector of Zyxin in Camp-Mediated Endothelial Exocytosis. G. Wei, P. Li, L. Chen, J. Luo, Peking Univ., People's Republic of China

**B531 542.29** Determining the Role of Annexin A6 in Cell Membrane Repair. J. Day, K. Sonnemann, W. Bement, Univ. of Wisconsin-Madison

**B532 542.3** Tale of the Two Domains in Twinfilin: Deciphering Phagocytosis Through Actin Dynamics. P.P. Rath, N. Kumar, M. Babuta, A. Bhattacharya, S. Gourinath, Jawaharlal Nehru Univ., India and InterNat'l. Centre for Genetic Engineering and Biotechnology, India

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## Mitochondria in Health and Disease

**B533 543.1** Mtdnmt1 and Dnmt3b Cooperate to Methylate Mitochondrial DNA and Regulate Mitochondrial Transcription. L. Shock, E. Burton, J. Robinson, S. Taylor, *Virginia Commonwealth Univ.*

**B534 543.2** Mitochondrial Dysfunction in Type 2 Diabetic Skeletal Muscle Cells. D.L. Castaneda, K. Yamazaki, *California State Univ. and Los Angeles*

**B535 543.3** Inhibition of Excessive Mitochondrial Fission Protects the Cardiomyocyte Against Palmitate-Induced Lipotoxicity. S.-J. Li, C.-Y. Chen, *Nat'l. Taiwan Univ., Taiwan*

**B536 543.4** Altered Metabolism and Mitochondrial Lipid Content Drive the Evasion of Apoptosis. K.A. Ross, A.J. Wyeth, K.E. Dittenhafer-Reed, *Hope Col.*

**B537 543.5** Seeking New Molecular Targets to Control Mitochondrial Biogenesis. L.R. Silveira, B.A. Pauletti, A.F. Paes Leme, T.I. Lima, *UNICAMP, Brazil and Brazilian Biosciences Nat'l. Lab., Brazil*

**B538 543.6** Protease Oma1 Modulates Mitochondrial Metabolism and Cristae Structure Through Interaction with Micos Complex. R.M. Levytskyy, M.P. Viana, O. Khalimonchuk, *Univ. of Nebraska-Lincoln*

**B539 543.7** Activation of Mitochondrial Calpain I Leads to Degradation of PDH. Q. Chen, J. Thompson, Y. Hu, J. Hollander, E. Lesnefsky, *Virginia Commonwealth Univ. and West Virginia Sch. of Med.*

**B540 543.8** The Genetic Origin of a Rare Mitochondrial Disorder. L. Bartl, B. DeVries, J. Reider, S.P. Vitiello, *Augustana Univ.*

**B541 543.9** Dual Perturbation of Electron Transport Chain (ETC) Complex and ATP Synthase Triggers PINK1/Parkin-Dependent Mitophagy. A.T. Ramirez, X. Liu, *Univ. of Colorado Boulder*

**B542 543.1** Investigation the Zinc-Mitophagy Signaling in Hypoxic Cells. Q. Lu, Y. Li, *Ohio Univ.*

**B543 543.11** Mitochondrial Selective Autophagy (Mitophagy) During Dengue Infection. G.H. Syed, B. Singh, K. Poornima, F. Alam, K. Avula, D. Taraphdar, *Inst. of Life Sciences, India*

**B544 543.12** Mitochondrial Membrane Potential and Aging in the Beer Fermentation Process. D.J. Hall, *Lawrence Univ.*

**B545 543.13** Regulatory Network Analysis of Endoplasmic Reticulum-Mitochondrial Contacts. G. Cho, I.-t. Cho, Y. Lim, J. Golden, *Brigham and Women's Hosp.*

**B546 543.14** What's Killing the Buzz? The Effects of Neonicotinoids on *Apis Mellifera* Mitochondrial Metabolism. M. Dickey, *Salisbury Univ.*

**B547 543.15** Association Between High Fat Consumption, Myelin Loss, and Mitochondrial Dynamics. M.R. Langley, H. Yoon, H. Kim, I. Lanza, L. Kleppe, W. Simon, A. Matveyenko, N. LeBrasseur, I. Scarisbrick, *Mayo Clinic*

**B548 543.16** The Protective Role of Paraoxonase 2 in Cardiomyocytes Against Myocardial Ischemia-Reperfusion Injury. D. Sulaiman, A. Devarajan, C.M. Cunningham, J. Li, M. Eghbali, S. Reddy, *Univ. of California and Los Angeles*

**B549 543.17** The Effects of Zinc on Mitochondrial Morphology. K. Knies, Q. Lu, Y. Li, *Ohio Univ.*

**B550 543.18** Impact of Mitochondrial DNA Haplogroups on Cancer Gene Expression. K. Schneider, M. Chwa, S. Atilano, M.C. Kenney, *Univ. of California and Irvine*

**B551 543.19** Deciphering the Effect of Endoplasmic Reticulum (Er) Stress on Near-Mitochondrial Localized Translation. S. Maity, S. Back, J. Rendleman, C. Vogel, *New York Univ.*

**B552 543.2** Potential Mitochondrial Dysfunction in Skeletal Muscle of Mouse Models of Osteogenesis Imperfecta. V. Gremminger, Y. Jeong, R. Cunningham, G. Meers, R.S. Rector, C. Phillips, *Univ. of Missouri*

**B553 543.21** A Novel Pharmacological Modulator Abrogates Physiological Mitochondrial Fission Though Specifically Inhibiting the Mff-Drp1 Protein-Protein Interaction. O.S. Kornfeld, N. Qvit, M. Shamloo, D. Mochly-Rosen, *Stanford Univ.*

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## Glycans and Glycobiology (I)

**B554 544.1** Role of the Kdo Glycosyltransferase Kps in the Biosynthesis of the Polysialyltransferase Acceptor for *Escherichia coli* K1. N. Lanz, V. Thon, W. Vann, *U.S. Food and Drug Administration*

**B555 544.2** Endoplasmic Reticulum (Er) Stress Is Anti-Angiogenic and Anti-Tumorigenic. A. Rivera Ruiz, J.E. Serrano Negron, K. Baksi, D.K. Banerjee, *Univ. of Puerto Rico and Universidad Central del Caribe*

**B556 544.3** Er Stress Marker Grp78 Is Not Expressed on Er/pr<sup>+/her2</sup> Human Breast Cancer Cell Surface or Secreted. D.K. Banerjee, J.E. Serrano Negron, A. Rivera Ruiz, K. Baksi, *Univ. of Puerto Rico and Universidad Central del Caribe*

**B557 544.4** Dolichol Phosphate Mannose Synthase: A Glycosyltransferase with Unity in Molecular Diversities. K. Baksi, Z. Zhang, J.E. Serrano Negron, D.K. Banerjee, *Universidad Central del Caribe and Univ. of Puerto Rico*

**B558 544.5** Characterization of O-GlcNAc Hydrolase with Phosphomimetic Mutations. M. Hinkle, G. Crawford, *Mercer Univ.*

**B559 544.6** Biochemical Characterization of Missense Mutations in O-GlcNAc Transferase Found in Patients with X-Linked Intellectual Disability. S.N. George, N. Selvan, H. Stephen, L. Wells, *Univ. of Georgia*

**B560 544.7** Screening Point Mutations of the O-GlcNAc Hydrolase Enzyme, Oga, to Investigate Potential Regulation. G. Crawford, *Mercer Univ.*

**B561 544.8** Genotype-Phenotype Correlations for Protein O-Linked Mannose N-Acetylglucosaminyltransferase I in Congenital Muscular Dystrophy. J.Z. Ho, S.R. Boyd, D. Singh, S.M. Halmo, L. Wells, *Univ. of Georgia*

**B562 544.9** A Novel Monomeric and Multifunctional Processive  $\beta$ -1,4-Endoglucanase Has Been Identified and Characterized from Porcine Gut Microbiome. W. Wang, T. Archbold, J.S. Lam, M.S. Kimber, M.Z. Fan, *Univ. of Guelph, Canada*

**B563 544.1** Molecular and Structural Recognition of *Listeria* Cell-Wall Glycopolymers by Bacteriophage-Encoded SH3b Domains. Y. Shen, I. Kalograiaki, A. Prunotto, M. Dunne, E. Sumrall, F.J. Cañada, M. Loessner, *ETH Zürich, Switzerland, Centro de Investigaciones Biológicas, Spain and Faculdade de Medicina Universidade de Lisboa, Switzerland*

**B564 544.11** Characterization of Bacterial Cell Wall Fragment Recognition by the Yeast Protein Cyr1p. D.J. Scanlon, J. Burch, C. Grimes, *Univ. of Delaware*

**B565 544.12** Understanding Specificity of Glycosaminoglycan Interactions with Proteins. U.R. Desai, B.B. Patel, *Virginia Commonwealth Univ. and McGuire VA Med. Ctr.*

**B566 544.13** Computational Study of Glycosaminoglycan Specificity for Growth Factor and Chemokine Family Members. B. Nagarajan, N. V. Sankaranarayanan, U. R. Desai, *Virginia Commonwealth Univ.*

**B567 544.14** Protein-Glycan Interactions: Binding of Different Norovirus VLPs to a Panel of Histo-Blood Group Antigens. D. Liu, A.N. Dhawane, X. Zhang, X. Cui, M. Diez-Valcarce, J. Vinje, S.S. Iyer, *Georgia State Univ. and Ctrs. for Disease Control and Prevention*

**B568 544.15** Breaking the Limits in Analyzing Carbohydrate Recognition by Nmr: Resolving Branch-Selective Interaction of a Tetraantennary N-Glycan with Lectins. A. Canales, I. Boos, L. Karst, L. Perkams, T. Luber, T. Karagiannis, J. Cañada, G. Domínguez, J. Perez-Castells, C. Unverzagt, J. Jiménez-Barbero, *Complutense Univ. of Madrid, Spain, Bayreuth Univ., Germany, Centro de Investigaciones Biológicas, Centro de Investigaciones Biológicas, Consejo Su, Spain, CEU San Pablo Univ., Spain and CIC bioGUNE, Spain*

**B569 544.16** High-Specificity Affinity Reagents for the Detection of Glycan Sialylation. L. Yang, S. Wu, J.C. Cooper, M.K. Paul, A.L. Cummings, Z.M. Eletr, S.L. Ben-Arye, V. Padler-Karavani, K.N. Samli, R.J. Woods, *Lectenz Bio, Tel Aviv Univ., Israel and Univ. of Georgia*

**B570 544.17** Resolving Extended N-Glycans by Nmr: New Insights into Influenza Hemagglutinin N-Glycan Interactions. B. Fernández de Toro Ronda, W. Peng, A. Thompson, G. Domínguez, F.J. Cañada, J. Pérez Castells, J. Jiménez Barbero, J.C. Paulson, A. Canales, Centro de Investigaciones Biológicas, Centro de Investigaciones Biológicas, Consejo Su, Spain, Scripps Res. Inst., CEU San Pablo Univ., Spain, CIC bioGUNE, Spain and Complutense Univ. of Madrid, Spain

**B571 544.18** Deciphering a Novel Mechanism Regulating Galectin-Glycoprotein Lattice Assembly/Disassembly During Cell-Cell Interactions. L. Elantak, P. Touarin, O. Bornet, Q. Chen, L.G. Scott, F. Guerlesquin, Nat'l. Ctr. for Scientific Res., France and Cassia LLC

**B572 544.19** Library of Recombinant Heparan Sulfates from Mammalian Cell Culture: Paving the Way to Bioengineered Heparin. B. Thacker, G. Lee, M. Scott, T. Groth, K. Thorne, S. Sharfstein, C. Glass, TEGA Therapeutics and State Univ. of New York Polytechnic Inst.

**B573 544.2** Glycosense™: A Rapid Method for Monitoring *in Vitro* Glycoengineering. L. Yang, M.J. Saunders, K.N. Samli, R.J. Woods, Lectenz Bio and Univ. of Georgia

**B574 544.21** Highly Specific and Rapid Glycan Based Amperometric Detection of Influenza Viruses. X. Cui, A. Das, A. Dhawane, J. Sweeney, X. Zhang, V. Chivukula, S. Iyer, Georgia State Univ. and Atlanta Metropolitan State Col.

**B575 544.22** Synthesis and Evaluation of Biotinylated Bivalent Histoblood Group Antigens for Capturing Human Noroviruses. A. Dhawane, M. Diez-Valcarce, B. Gurale, H. Dinh, J. Vinje, S. Iyer, Georgia State Univ. and Ctrs for Disease Control and Prevention

**B576 544.23** A Novel Systems-Level Approach to Unravel the Regulation and Biosynthetic Steps of Glycosylation. N. Lewis, UCSD

# MONDAY APRIL 23

## ASBMB Poster Sessions

### EXHIBIT HALL

Poster set up by: 9:00 AM Poster display: 9:00 AM–4:00 PM Poster removal: 4:00–6:00 PM

#### Author at boards:

# ending in 0, 3 or 6: 12:15–1:00 PM # ending in 1, 4, 7 or 9: 12:45–1:30 PM # ending in 2, 5, or 8: 1:30–2:15 PM

BOARD NUMBER	SESSION TITLE	BOARD NUMBER	SESSION TITLE
1 – 7	DNA Polymerases, Replicases and Replisomes	272 – 280	Extracellular Matrix and Cell Signaling
8 – 15	DNA Damage	281 – 292	Oxidative Stress and Reactive Oxygen
16 – 41	Transcriptional Mechanisms and Regulation	293 – 314	Protein Kinases
42 – 52	CRISPR: Methods and Applications	315 – 356	Active Learning in the Molecular Life Sciences
53 – 66	RNA Processing: From Transcription to Editing	357 – 375	Apoptosis and Cell Death
67 – 87	Mechanisms and Regulation of Protein Synthesis	376 – 384	Cell Stress and Xenobiotics
88 – 131	Protein Interactions and Binding	385 – 393	Signaling Integration and Cross-regulation
132 – 140	Protein Turnover and Quality Control	394 – 405	Cell Motility and Migration
141 – 153	Ubiquitin Pathway and Targeting	406 – 417	Tumor Suppressors and Tumor Drivers
154 – 187	Enzyme Mechanisms, Kinetics and Energetics	418 – 440	Microbe-Host Interactions
188 – 224	Chemical Biology of Natural Products and Small Molecules	441 – 503	Diabetes, Obesity and Metabolic Syndrome
225 – 244	Chemical Probes, Biosensors and Biomarkers	504 – 514	Lipids and Membranes
245 – 256	Lipidomics & Metabolomics	515 – 524	Lipid Metabolizing Enzymes
257 – 271	Growth Factor and Cytokine Signaling	525 – 556	Glycans and Glycobiology (II)
		557 – 583	Society for Experimental Biology and Medicine (SEBM) Interdisciplinary Research

## DNA Polymerases, Replicases and Replisomes

- B1 646.1** Multisubunit Multiactive Site DNA Polymerase Complexes with Coordinated Activities. M.A. Trakselis, M. Cranford, A.M. Chu, *Baylor Univ.*
- B2 646.2** Error-Prone DNA Polymerase IV Preserves the Memory of Its Interaction with RecA. T.F. Tashjian, I. Lin, B.H. Nguyen, V.G. Godoy, *Northeastern Univ.*
- B3 646.3** Probing the Role of Distal Residues in DinB and Pol Kappa in the Extension Step of DNA Damage Bypass. H.R. Stern, C.L. Mills, M.J. Ondrechen, P. Beuning, *Northeastern Univ.*
- B4 646.4** Exploration of Conformational Selection During Translesion Synthesis: *in Silico* Studies of DinB. T. Tauro, B. Sampoli Benitez, *Marymount Manhattan Col.*
- B5 646.5** Molecular Dynamics Studies of DNA Polymerase Kappa, a Human Protein Involved in Translesion Synthesis. E.R. Leong, B. Sampoli Benitez, B. Sampoli Benitez, *Marymount Manhattan Col.*
- B6 646.6** Investigating the Role of DNA Polymerase IV in the Resolution of R-Loops. B. Nguyen, T. Tashjian, V. Godoy, *Northeastern Univ.*
- B7 646.7** Structure of Eukaryotic Cmg Helicase at a Replication Fork and Implications for Replisome Architecture and Origin Initiation. Z. Yuan, R. Georgescu, B. Lin, R.d. L. A. Santos, D. Zhang, O. Yurieva, M. O'Donnell, H. Li, *Van Andel Inst. and Rockefeller Univ.*

## DNA Damage

- B8 647.1** Ataxia Telangiectasia and Rad3-Related Kinase (Atr) May Prevent Replication Stress in Planarian During Regeneration. R. Tirgar, U. Shamoan, L. Akpati, N. Sawyer, L. Nguyen, E. Nam, *Univ. of St. Thomas*
- B9 647.2** Structural Basis for Proficient Nucleotide Incorporation Across a Major Cisplatin-DNA Lesion by Human DNA Polymerase Kappa (Pol  $\kappa$ ). V. Jha, H. Ling, *Univ. of Western Ontario, Canada*
- B10 647.3** High-Resolution Maps of Genome-Wide Human Damage and Repair. O. Adebali, J. Hu, A. Sancar, *Univ. of North Carolina at Chapel Hill*
- B11 647.4** Investigating Intracellular RecA Concentrations in the Emerging Pathogen *in Silico*. M.J. Downs, C. Ching, T.F. Tashjian, V.G. Godoy, *Northeastern Univ.*
- B12 647.5** Insights into the Molecular Mechanism of Alkylation-Induced Mutagenesis. S. Lee, *The Univ. of Texas at Austin*

**B13 647.6** The Lexa-Regulated Gene *ybfE* Plays a Role in DNA Metabolism in E. Coli. A.B. Hotchkiss, C. Kramer, P. Beuning, *Northeastern Univ.*

**B14 647.7** Targeting the G-Triplex Intermediate in G-Quadruplex DNA Folding for Potential Chemoprevention Applications. H.E. Bracey, N. Navapan, K. Tippayarak, D. Lee, C. Blanton, B. Corona, I. M.A. del Mundo, K.M. Vasquez, B. Tuesuwan, S.M. Kerwin, *Texas State Univ., Chulalongkorn Univ., Thailand and Dell Pediatric Res. Inst.*

**B15 647.8** Resveratrol-Induced DNA Damage on MCF-7 Breast Cancer Cells Through NER Pathway. L.A. Padilla, R.A. Vergne, C. Ortiz, L. Godoy, J. Encarnacion, J. Matta, *Univ. of Puerto Rico at Ponce, Puerto Rico and Ponce Health Sciences Univ., Puerto Rico*

## Transcriptional Mechanisms and Regulation

- B16 648.1** Wavelength of Light Impacts Circadian Regulation in *ybfE* Mutant *Drosophila Melanogaster*. B.P. Walters, S.P. MacDonald, R.P. Rogers, *Wentworth Inst. of Technology*
- B17 648.2** Characterizing Pterg4 as a Target Gene of Autism Protein E6ap. C. Amadei, M. Alessandri, Z. Nawaz, *Univ. of Miami, Miller Sch. of Med. and Univ. of Miami*
- B18 648.3** New Insights into the Assembly Mechanism of an RNA Polymerase III-Specific Transcription Complex on a *Drosophila* u6 SnRNA Gene Promoter. A. M. Hurlburt, N. Verma, P. Phan, A. Wolfe, W. Stumph, *San Diego State Univ.*
- B19 648.4** Regulation of Opn Expression in Mda-Mb-435: Role of Genistein. B. Das, K. Khongsti, *North Eastern Hill Univ., India*
- B20 648.5** Characterization of Sp1 and Sp3 Occupation of the Distal Manganese-Superoxide Dismutase Promoter in the Presence of HIV-1 Tat. T. Manes, A. Cota-Gomez, *Univ. of Colorado Anschutz Med. Campus*
- B21 648.6** FOXC1 Is Over-Expressed and Is More Stable in Triple Negative/basal-Like Breast Cancer. F.A. Elian, T.P. W. McMullen, D.N. Brindley, M.A. Walter, *Univ. of Alberta, Canada*
- B22 648.7** Investigating a Novel Regulation on a Checkpoint Protein Sda That Is Essential for Biofilm Formation and Sporulation in *Bacillus Subtilis*. Y. He, K. Gozzi, Y. Qin, Y. Chai, *Northeastern Univ. and Massachusetts Inst. of Technology*
- B23 648.8** Regulation of an Evolutionarily Conserved RNA Polymerase II-Associated Factor I (PAFI) Involved in Pancreatic Oncogenesis. P. Barman, J. Ferdoush, A. Kaja, S. Karmakar, B. Uprety, S.K. Batra, S.R. Bhattacharya, *Southern Illinois Univ. Sch. of Med. and Univ. of Nebraska Med. Ctr.*
- B24 648.9** A Role for the Transcription Factor Snail in Alternative Splicing. S. Rudraraju, J. Kumar, S. Krueger, H. Qureshi, A. Scheidegger, A. Dhasarathy, *Univ. of North Dakota*
- B25 648.1** Inhibition of Epstein-Barr Virus by an Atypical Antipsychotic. A. Anderson, J. Weseli, K. Gorres, *Univ. of Wisconsin-La Crosse*
- B26 648.11** The Tumor Suppressor Phosphatase Phlpp1 Suppresses Inflammatory Signaling by Regulating the Phosphorylation State and Activity of Stat1. K. Cohen Katsenelson, J.D. Stender, S. Uchiyama, V. Nizet, C.K. Glass, A.C. Newton, *UCSD, Skaggs Sch. of Pharmacy and Pharmaceutical Sciences, UCSD*
- B27 648.12** Characterization of Female Sexual Development-1 (*Fsd-1*) Transcript Structure, Expression, and Localization in the Fungus *Bacillus Subtilis*. T. Hurysz, B. Gebhardt, M. Pyatt, K. Emmens, C. Toufexis, E. Hutchison, *State Univ. of New York Col. at Geneseo*
- B28 648.13** Systematic Screening for Transcriptional Regulators of Adult Myogenesis in *Drosophila* by RNAi. T. Soudachanh, S. Oas, T. Mendes, A. Byrantssev, R. Cripps, *Univ. of New Mexico, The Ohio State Univ. and Kennesaw State Univ.*
- B29 648.14** Investigating the Interaction Between Med5 and Cdk8 in Arabidopsis. X. Mao, Y.M. Weake, C.C. S. Chapple, *Purdue Univ.*
- B30 648.15** Interaction of Positive Coactivator 4 with Histone 3.3 Protein Is Essential for Transcriptional Activation of the Luteinizing Hormone Receptor Gene. R. Kavarthapu, P. Zhao, M. Liao, M. Dufau, *Nat'l. Inst.s of Health and GeneDx*
- B31 648.16** Direct Pharmacologic Regulation of the Ets Transcription Factor Pu. I. S. Lee, G.M.K. Poon, *Georgia State Univ.*
- B32 648.17** Molecular Mechanism of Transcriptional Regulation by Chromatin Reader Transcription Factor 19 (Tcf19) During Metabolic Stress. S. Sen, C. Das, *Saha Inst. of Nuclear Physics, India*
- B33 648.18** Pathogenesis Related Protein 1 Expression Is Induced by 1,4-Dimethylnaphthalene Treatment of Potato Meristems. M. Pirritano, M. Campbell, *Penn State Behrend*
- B34 648.19** High Fat Diet Blunts the Activation of Canonical Wnt Signaling Pathway Induced by Radiation Therapy in Mouse Colon Epithelia. G. Xu, R. Emmons, M. De Lizio, Y.-X. Pan, H. Chen, *Univ. of Illinois at Urbana-Champaign and Univ. of Ottawa, Canada*
- B35 648.2** Epigenetic Regulations of Genes Related to Lipid Metabolism by MicroRNA in Mice Fed High Fat Diet. X. Tang, G. Xu, Y.-X. Pan, H. Chen, *Univ. of Illinois at Urbana-Champaign*
- B36 648.21** Defining Molecular Calipers: Affinity and Exchange of Auxin Response Activators and Repressors. M.C. Carroll, J.P. Ellis, *Ithaca Col.*

**B37 648.22** Challenges and Insights in Regulation of P53 and NF- $\kappa$ B Transcription Factors: Making the Case for Cancer Prevention from the Environmental-Physiological Paradigm. H.T. Nguyen, M.C. Mulero, D. Huang, A.S. Ethayathulla, A. Ramos, H. Viadiu, G. Ghosh, UCSD, Texas Tech Univ. HSC, Res. Inst. of Molecular Pathology, Austria and Universidad Nacional Autónoma de México, México

**B38 648.23** Hepatic Autophagy Gene Expression Is Induced by Post-Weaning Diets in Sprague-Dawley Rats Fed with a Low-Protein Diet During Lactation. M. Cai, H. Wang, H. Chen, Y.-X. Pan, Univ. of Illinois at Urbana-Champaign

**B39 648.24** Fine-Tuning of an Evolutionarily Conserved Histone Chaperone, FACT, by Ubiquitin-Proteasome System, and Its Targeting to the Active Gene by mRNA Capping Machinery to Regulate Transcriptional Elongation. A. Kaja, R. Sen, J. Ferdoush, S. Lahudkar, P. Barman, S.R. Bhaumik, Southern Illinois Univ. Sch. of Med.

**B40 648.25** Elucidating the Regulatory Mechanism of the Transcription Factor Krüppel Homolog 1 in Mosquito Reproduction. T.H. Ahmed, J. Zhu, Virginia Polytechnic Inst. and State Univ.

**B41 648.26** Isolation, Purification, Modeling, and Binding Site Analysis of the Salmonella Bacteriophage  $\epsilon^{34}$  Repressor for Subsequent Crystallization and Structure-Function Studies. D. Jackson, Huntingdon Col.

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## CRISPR: Methods and Applications

**B42 649.1** A Rapid, Simple, High-Throughput Compatible Approach to Generating Crispr/cas9 Knock-Out Cell Lines. M. Wu, S. Okino, G. Uy, D. Woo, M. Shulewitz, Y. Wang, Bio-Rad Laboratories and Inc.

**B43 649.2** Receptor-Mediated Delivery of Crispr-Cas9 Endonuclease for Cell Type Specific Gene Editing. M. Roy, R. Rouet, B. Thuma, N. Lintner, D. Rubitski, J. Finley, H. Wisniewska, R. Mendonsa, L. de Oñate, A. Hirsh, J. Compton Barrón, T. McLellan, J. Bellenger, X. Feng, A. Varghese, B. Chrunyk, K. Borzilleri, K. Hesp, K. Zhou, N. Ma, M. Tu, R. Wilson, R. Dullea, K. McClure, S. Liras, V. Mascitti, J. Doudna, Pfizer Inc. and Univ. of California

**B44 649.3** Characterization of Human Ipsc Ret Reporter Cell Line Differentiation to Kidney and Neural Crest Lineages. R.J. Salamon, B. Gong, S. Jain, Fort Lewis Col. and Washington Univ. in St. Louis

**B45 649.4** Chemically-Controlled Orthogonal Regulation of Multiple Endogenous Genes. W. Nomura, D. Matsumoto, T. Sugii, T. Kobayakawa, H. Tamamura, Inst. of Biomaterials and Bioengineering and Tokyo Med. and Dental Univ., Japan

**B46 649.5** Construction of Genome-Engineered Mesenchymal Stem Cells Secreting Angiogenic or Anti-Inflammatory Factors for the Treatment of Acute Kidney Injury. H.-J. Park, J.-I. Cho, H.-J. Jang, E.-J. Park, H.-J. Choi, T.-H. Kwon, Kyungpook Nat'l. Univ., Republic of Korea

**B47 649.6** Base Editing: Chemistry on the Genome. A.C. Komor, UCSD

**B48 649.7** Inactivation of Gene  $\alpha$ -1,3-Galactosyltransferase in Bovine Aortic Smooth Muscle Cells Using Crispr-Cas9. X. Wang, J. Apple, Y. Huang, Univ. of Arkansas

**B49 649.8** Gene Architecture Influences on the Outcome of Indel-Based Genome Editing. R. Tuladhar, Y. Yeu, J.T. Piazza, J. Clemenceau, X. Wu, Z. Tan, D. Mathews, T.H. Hwang, J. Kim, L. Lum, The Univ. of Texas Southwestern Med. Ctr., Cleveland Clinic and Univ. of Rochester Med. Ctr.

**B50 649.9** Reversal of Phenotypic Abnormalities by Crispr/Cas9-Mediated Gene Correction in Ipscs Derived from Fabry Ivs4+919 Mutation Patients. H. Song, C.-S. Chien, S.-H. Chiou, S. Chien, Inst. of Engineering in Med., UCSD, Inst. of Pharmacology and Nat'l. Yang-Ming Univ., Taiwan

**B51 649.1** Development of Split Cas6 for Inducible Dimerization Modules. J.A. Ling, E.J. Vontalge, D.G. Sashital, Iowa State Univ.

**B52 649.11** Impact of Chromatin on Genome Accessibility and Cleavage by Crispr-Cas9 *in Vivo*. S. Verma, R. Yarrington, J. Trautman, S. Schwartz, D. Carroll, Univ. of Utah

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## RNA Processing: From Transcription to Editing

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**B54 650.2** Zika Viral Polymerase: A Promising Therapeutic Target. G.S. Wells, J. Bernatchez, M. Coste, L. Luna, J. Siqueira Neto, B. Purse, C.S. Sohl, San Diego State Univ., UCSD

**B55 650.3** Investigating RNA Hairpin Stability and Protein Binding Using Optical Tweezers. S. Plachinski, L. Furman, M.J. McCauley, M.C. Williams, M.E. Nájuez, Wellesley Col. and Northeastern Univ.

**B56 650.4** Probing RNA Structure and Dynamics in the HIV-1 5' utr Using Ensemble and Single Molecule Approaches. K. Musier-Forsyth, B. Brigham, J. Kitzrow, J.-P.C. Reyes, J. Munro, The Ohio State Univ. and Tufts Univ. Sch. of Med.

**B57 650.5** Investigating on the Binding Characteristics of the Important RNA-Protein Interactions in Brome Mosaic Virus. R. Riboul, N. Siegel, C. Kim, California State Univ. and East Bay

**B58 650.6** Changing the Ligand Specificity of a Riboswitch from Guanine to Hypoxanthine. J.G. Garcia, D.P. Morse, United States Naval Academy

**B59 650.7** Synthesis and Characterization of RNA Aptamers Targeted at *Aspergillus* Cell Surface Carbohydrates. N.M. Woodhead, S.S. Silvestri, D.R. Engelke, C.E. Rohlman, Albion Col. and The Univ. of Colorado

**B60 650.8** Protein Homology Suggests Similarities in Histone mRNA Processing Between Humans and Slime Molds. S.P. Roth, P. Lackey, Westminster Col.

**B61 650.9** Isoforms of Human Cd46 Produced by Alternative Splicing Adopt Different Quaternary Structures. E.Y. Wu, E.L. Romanoff, J.W. Woon, Univ. of Richmond

**B62 650.1** Recombination Events and Clusters of ADAR1-Like Hypermutations Increase Genome Diversity of Measles Virus, a Negative Strand RNA Virus. R. Cattaneo, R.C. Donohue, C.K. Pfaller, Mayo Clinic Graduate Sch. of BioMed. Sciences and Mayo Clinic

**B63 650.11** Dimerization of ADARs Expands the Range of Substrates That Can Undergo A-to-I RNA Editing. H.A. Hundley, S. Rajendren, A.C. Manning, Y. Takagi, Indiana Univ. and Indiana Univ. Sch. of Med.

**B64 650.12** Multiple Mechanisms Driving Alternative Polyadenylation of Cyclin D1 (*cnd1*) Pre-mRNA Processing. C.P. Masamha, E. Wagner, Butler Univ. and The Univ. of Texas Med. Branch

**B65 650.13** Splicing Variation of Ttn Novex Isoforms Across Species and Rbm20 Does Not Regulate Splicing of Novex Isoforms in Cardiac Muscle. Z. Chen, W. Guo, Univ. of Wyoming

**B66 650.14** RNA Editing Mediates Oligomerization State of Calcium-Dependent Activator Protein for Secretion I (Caps I). B. Mitchell, R.J. Ulbricht, Missouri State Univ.

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**B68 651.2** Tributyltin Effects on Akt/protein Kinase B and Ribosomal S6 Protein Phosphorylation. N. Hamza, M. Boules, M. Whalen, Tennessee State Univ.

**B69 651.3** Regulation of Protein Translation Initiation by Estrogen. M.K. Holz, Yeshiva Univ.

**B70 651.4** Selenoprotein Profiling in Various Tissues of Mice Fed with Selenium-Deficient and High-Selenomethionine Diets. I. Ishii, N. Akahoshi, S. Kamata, Y. Hashimoto, S. Hayashi, N. Tokoro, S. Yamamoto, K.-I. Shimada, Y. Anan, *Showa Pharmaceutical Univ., Japan*

**B71 651.5** Chemotropic Receptor Deleted in Colorectal Cancer (Dcc) Prevents Translation Initiation by Directly Inhibiting Ribosome Function. M.E. Filbin-Wong, T. Gonen, J.S. Kieft, *Metropolitan State Univ. of Denver, HHMI, Univ. of California, Los Angeles and Univ. of Colorado Sch. of Med.*

**B72 651.6** Screening Cysteine Mutants for Site-Specific Pegylation of L-Asparaginase II. J. Ramirez-Paz, K. Griebenow, *Univ. of Puerto Rico*

**B73 651.7** Pentachlorophenol Effects Synthesis of IL-1  $\beta$  in Human Immune Cells. T. Martin, M. Whalen, *Tennessee State Univ.*

**B74 651.8** Transcriptional and Post-Transcriptional Regulation of *mtla* in *Vibrio Cholerae*. Wang, M. Zhang, *Pomona Col.*

**B75 651.9** Pervasive, Coordinated Protein Level Changes Driven by Transcript Isoform Switching. G. Brar, G. Otto, Z. Cheng, E. Powers, A. Keskin, M. Jovanovic, *Univ. of California, Berkeley and Columbia Univ.*

**B76 651.1** A System for Global Analysis of Correlation Between Protein Expression and mRNA. K. Johnson, S. Zhong, *UCSD*

**B77 651.11** Promoting Protein Translation in a Vaccinia Virus System Using Translation Enhancing Elements. S. Minder, B. Richard, Jr., B.L. Jacobs, B.P. Wellensiek, *Midwestern Univ. and Arizona State Univ.*

**B78 651.12** A Post-Transcriptional Program of Chemoresistance Regulators in Quiescent Cancer Cells. S. Vasudevan, S. Lee, S.I.A. Bukhari, S.S. Truesdell, M. Boukhali, D. Lee, M.A. Mazzola, R. Raheja, A. Langenbucher, N.J. Haradivala, M. Lawrence, R. Gandhi, D. Sweetser, W. Haas, *Massachusetts General Hosp. and Harvard Med. Sch. and Brigham and Women's Hosp.*

**B79 651.13** Cap-Independent Translation Initiation Driven by a 13-Nucleotide Motif. M.A. Flores, A.N. Juba, J.C. Chaput, B.P. Wellensiek, *Midwestern Univ. and Arizona State Univ.*

**B80 651.14** Jnk-Mediated Eif4e Phosphorylation and Signaling in Fibrotic Functions of Lung-Resident Mesenchymal Cells (Mcs). N.M. Walker, V.N. Lama, *Univ. of Michigan*

**B81 651.15** Rpos Recovery from Phosphate Starvation. I.N. Hamdallah, N. Majdalani, A. Tripathi, S. Gottesman, *Nat'l. Cancer Inst. and Nat'l. Inst.s of Health*

**B82 651.16** Evaluation of *Pro-Pol* Frameshifting Efficiencies for Naturally Occurring Variants of Htlv-I. E.A. White, K. Mouzakis, M. Williams, H. Nash, A. Hamilton, J. Harrison, A. Eades, L. Daily, U. Contreras, A. Cooper-Sansone, D. Chadeayne, T. Banks, T. Abrams, N. Joe, E. Mylroie, *Fort Lewis Col.*

**B83 651.17** Effect of Arginine Methylation on Ded1 Function in *Saccharomyces Cerevisiae*. A. D'Alessandro, C. Freniere, A. Hilliker, *Univ. of Richmond*

**B84 651.18** Role of Eukaryotic Initiation Factor 3 in the Non-Canonical Mechanism of Barley Yellow Dwarf Virus Translation Initiation. P. Powell, U. Bhardwaj, S. Mitra, R. Gonzalez, D. Goss, *City Univ. of New York, Hunter Col., New York Univ. and Columbia Univ.*

**B85 651.19** Evaluating the Importance of Pseudoknot Formation to Htlv-I *Pro-Pol*-I Programmed Ribosomal Frameshift Stimulation. A. Cooper-Sansone, M. Williams, D. Chadeayne, U. Contreras, L. Dailey, N. Joe, E. Mylroie, K. Mouzakis, *Fort Lewis Col.*

**B86 651.2** Exploring the Significance of the Human T-Cell Lymphotropic Virus Type-I *Pro-Pol* Frameshift Site Pseudoknot. M.A. C. Williams, A. Cooper-Sansone, D. Chadeayne, E. Mylroie, U. Contreras, N. Joe, K. Mouzakis, *Fort Lewis Col.*

**B87 651.21** Mechanistic Interrogation of the Entry- and Exit-Channel Arms of Eif3. C.E. Aitken, P. Beznoskova, J. Dong, P. Yourik, L. Valasek, A.G. Hinnebusch, J.R. Lorsch, *Vassar Col., Inst. of Microbiology, Academy of Sciences of the Czech Republic, Czech Republic, Eunice Kennedy Shriver Nat'l. Inst. of Child Health and Human Development and Nat'l. Inst.s*

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**B89 652.2** The Iron Metabolism Receptors, Tfr1 and Tfr2, Bind and Stabilize Transferrin Through Non-Conserved Interactions. M.D. Kleven, C. Enns, *Oregon Health & Science Univ.*

**B90 652.3** Effect of Osmotic Stress on Folate Pathway Enzyme. D.K. Nambiar, T. Berhane, O. Sharma, M. Duff, E. Howell, *Univ. of Tennessee and Knoxville*

**B91 652.4** Interactome Mapping of the Pathogen *Helicobacter Pylori* Using All-vs-All Sequencing (Ava-Seq). S. Ramadan, S. Andrews, N. Al-Thani, I. Ahmed, J. Malek, *Weill Cornell Med.-Qatar, Qatar*

**B92 652.5** Impact of Beta-Dystroglycan Deficiency on Emerin Functions. , *CINVESTAV, Mexico*

**B93 652.6** Exploring the Entry Route of Palmitic Acid and Palmitoylcarnitine into Myoglobin. S.V. Chintapalli, A. Anishkin, S.H. Adams, *Arkansas Children's Nutrition Ctr., Univ. of Arkansas for Med. Sciences and Univ. of Maryland*

**B94 652.7** Calsequestrin, a New Modulator of Unfolded Protein Response in Skeletal and Cardiac Muscle. , *Univ. of Alberta, Canada, Vanderbilt Univ. Sch. of Med. and Univ. of Calgary, Canada*

**B95 652.8** Characterization of the Binding Interactions of AT Hook Motif Variants. K.R. Dobbins, K.L. Buchmueller, *Furman Univ.*

**B96 652.9** Structure and Interaction Analysis of Human R7-RGS/G $\beta$ 5/R7BP Complexes. P.R. Adikaram, J. Zhang, M. Pandey, C. Kittock, W.F. Simonds, *Nat'l. Inst.s of Health*

**B97 652.1** A Biophysical Analysis of Malate Dehydrogenase and Citrate Synthase Protein-Protein Interaction. D. Ghebregziabher, J. Provost, *Univ. of San Diego*

**B98 652.11** Identification and Functional Testing of Six Interactors of the Transmembrane Sensor Mtlp in the Budding Yeast *Saccharomyces Cerevisia* DNA Binding Kinetics of CTC *Fin Vitro*. N. Martinez-Matias, J. Rodriguez-Medina, *Univ. of Puerto Rico and Med. Sciences Campus*

**B99 652.12** E-Cadherin Interact with AJUBA-LIM During Drosophila Larval Brain Development. T. Tadros, A. Viera, T. Underwood, S. Fung, *Vanguard Univ.*

**B100 652.13** Bending and Wrapping of Upstream Promoter DNA on *e. Coli* RNA Polymerase Facilitates Open Complex Formation in Transcription Initiation; a Fluorescence (FRET, PIFE) Study. C.L. McEnerney, K. Callies, C.K. Cimperman, P. Chittur, R. Sreenivasan, M. Chhabra, M.T. Record, Jr., *Univ. of Wisconsin-Madison*

**B101 652.14** The Assessment of Interaction Between eNOS and Alpha Hemoglobin by Bio-Layer Interferometry. D. Ma, H. Ackerman, *Nat'l. Inst. of Allergy and Infectious Diseases and Nat'l. Inst.s of Health*

**B102 652.15** Lrp1 Requires the I3 Domain of Hdlg for Interaction with the Motor Protein Kif13b. J.E. Mills, T. Hanada, L. Liscum, A. Chishti, *Sackler Sch. of Graduate BioMed. Sciences, Tufts Univ. and Tufts Univ. Sch. of Med.*

**B103 652.16** Determination of the Pip<sub>2</sub> Binding Sites on ENaC. C.R. Archer, Y. Chen, A.M. Stockand, J.D. Stockand, *The Univ. of Texas HSC at San Antonio and Case Western Reserve Univ.*

**B104 652.17** Characterization of Dog, Cat, Guinea Pig, and Human IAPPToxicity in Hela Cells. L.I. Ledesma, *Mount Saint Mary's Univ. and Los Angeles*

**B105 652.18** Expression of Alpha I Subunit in the Haptoglobin 2-1 Phenotype and Its Association with Clinical Course in Aneurysmal Subarachnoid Hemorrhage. B. J. Kim, J. P. Jeon, Y. Kim, *Hallym Univ., Republic of Korea*

**B106 652.19** Pabp and Eif4b Effects Binding Affinity and Kinetic Rates of Genome Linked Viral Protein (VPg) with Eukaryotic Initiation Factor 4F. M.A. Khan, D.J. Goss, *Alfaisal Univ., Saudi Arabia, Chemistry and Biochemistry Programs, Graduate Ctr. and City Univ. of New York and Hunter Col.*

**B107 652.2** New Structural Features Reveal How Bacteria Stick to Host Surfaces. J.J. Paxman, A. Lo, S. Panjikar, M. Kuiper, C.-H. Luan, M. Schembri, B. Heras, *La Trobe Inst. for Molecular Science, La Trobe Univ., Australia, Australian Infectious Diseases Res. Centre, Australia, Australian Synchrotron, Australia, Commonwealth Scientific and Industrial Res. Organisation, Australia and Northwestern Univ.*

**B108 652.21** Kinetics and Binding Studies of the (NRPS)-Independent Siderophore (NIS) Synthetase DesD. K. Lathan, K. Hoffmann, *California Lutheran Univ.*

**B109 652.22** Characterization of a Protein-Protein Interaction Between Nii-16 and Hdac3. L.A. Dailey, K.D. Baugh, S.D. Fenster, *Fort Lewis Col.*

**B110 652.23** Protein E6 in High Risk Human Papillomaviruses. R. Mahesh, D. Langat, D. Langat, E. Barbara, A. Cheng, *Olathe North High Sch.*

**B111 652.24** Atypical Binding Behavior of Epsin-Like Clathrin Adaptor 1 to Diacylglycerol Pyrophosphate. P. Putta, E.E. Kooijman, *Kent State Univ.*

**B112 652.25** The Role of Fusion Protein F in the Virus Entry and Cell-to-Cell Spread for Nipah Virus. T. Link, M. Ul-Islam, T. Arpornsuksant, J. Fisher, C. Lee, A. Rajput, Z. Saberi, A. Singh, *Walton High Sch.*

**B113 652.26** Fluorescence Kinetic Studies of DNA Unwrapping in Transcription Initiation with NTP Addition and in Open Complex Dissociation by High Salt. K. Callies, C. McNerney, C.K. Cimperman, A. Xue, H. Kan, R. Sreenivasan, M. Chhabra, T. Record, *Univ. of Wisconsin-Madison*

**B114 652.27** Characterization of the 3<sup>rd</sup> and 4<sup>th</sup> EF-Hand Motifs of NADPH Oxidase 5 by Spectroscopy and Calorimetry. C.-C. Wei, E. Fabry, *Southern Illinois Univ. Edwardsville*

**B115 652.28** Identification of Notch Binding Proteins and Localization of Notch to Focal Adhesions. S.L. Havel, T.R. Gazdik, T.L. Wood, B. LaFoya, A. Albig, *Boise State Univ.*

**B116 652.29** Deciphering the 'Fuzzy' Interaction of FG Nucleoporins and Transport Factors Using SANS. S. Sparks, D. Cowburn, *Albert Einstein Col. of Med.*

**B117 652.3** Biochemical Characterization of Marr and Tetr Proteins from *Clostridium Difficile*. R. Takahashi, B. Panchal, D. E. Kim, S. Wilkinson, *California Polytechnic State Univ.*

**B118 652.31** Dynamic Multi-Site Phosphorylation by Fyn and Abl Drives the Interaction Between Crkl and the Novel Scaffolding Receptors DcblD1 and DcblD2. A. Schmoker, J. Weinert, K. Kellett, H. Johnson, R. Joy, M. Weir, A. Ebert, B. Ballif, *Univ. of Vermont*

**B119 652.32** Phosphorylation of Pea-15 Allosterically Induces Conformational Change Suited for Fadd Binding and Negatively Regulates Apoptosis. S. Hassan, S. Crespo, Y. Wei, *New Jersey City Univ.*

**B120 652.33** Resolving Protein Interactions in Live Bacterial Cells Through 3D Single-Molecule Localization Microscopy. C.J. Richardson, J. Rocha, A. Gahlmann, *Univ. of Virginia*

**B121 652.34** Mapping the Interface of Alpha Globin and eNOS: Implications for Increasing Endogenous NO Therapeutically. T. C.S. Keller IV, N.K. Swope, L. Columbus, B.E. Isakson, *Univ. of Virginia*

**B122 652.35** Ligand Binding and Phosphorylation of Anabaena Sensory Rhodopsin Transducer Towards Putative Signaling State in Sensory Rhodopsin Mediated Protein-Protein Cross Talk. A. Gautam, T.S. Jones, V.D. Trivedi, *Bethune-Cookman Univ.*

**B123 652.36** Analyzing Protein Kinase C Interactions with Rho4 and Bud3 in the Filamentous Fungus *Aspergillus nidulans*. B. Betton, J. Hobson, E. Olsen, T.W. Hill, L. Jackson-Hayes, *Rhodes Col. and Lane Col.*

**B124 652.37** Investigating the Cia1:Cia2 Sub-Complex of the Cytosolic Fe-S Cluster Assembly Pathway. S. Esonwune, A. Vo, M. Marquez, D. Perlstein, *Boston Univ.*

**B125 652.38** Preferential Interaction of Beryllium Ion with Carboxylate-Rich Peptides. B. De Silva, R.K. Gary, *Univ. of Nevada and Las Vegas*

**B126 652.39** A Biochemical and Structural Look into the Functional Role of Transferrin in *d. Melanogaster*. J. Weber, L. Brummett, B. Geisbrecht, M. Kanost, M. Gorman, *Kansas State Univ.*

**B127 652.4** Evaluating the Nuclease Activity of *Pseudomonas* Exotoxin A. N. Patel, N. Jackson, J. Weldon, *Towson Univ.*

**B128 652.41** DNA Binding Properties of the Transcription Factor Optix. J.M. Rodriguez, *Univ. of Puerto Rico, Puerto Rico*

**B129 652.42** Metal Binding Specificity in a Putative Nickel Solute Binding Protein. M. Amato, E. Yuki, *New Mexico State Univ.*

**B130 652.43** Exploration of Membrane Binding of  $\alpha$ -Synuclein Through Site Based Spin Labeling. J. Vrabel, *Westminster Col.*

**B131 652.44** Parameters That Define Suppressor of Ikk Epsilon (Sike): Cytoskeletal Protein Interactions Revealed Through Determination of Binding Affinities and Sike's Dimer Interface. H.A. Sonnenschein, J.E. Bell, J.K. Bell, *Univ. of San Diego*

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**B134 653.3** Dysregulation of Human Mitochondrial Clpp Protease Activity by Acyldeipeptides Analogs Leads to Apoptotic Cell Death. W.A. Houry, *Univ. of Toronto, Canada*

**B135 653.4** Modulation of the Hsp70 Protein Quality Control System by Phosphorylation of Chaperones and Co-Chaperones. R. Page, *Miami Univ.*

**B136 653.5** Autophagic Clearance of Proteasomes in Yeast Requires the Conserved Sorting Nexin Snx4. L.A. Howell, A.A. Nemecek, M.A. Murray, R.J. Tomko, Jr., *Florida State Univ. Col. of Med.*

**B137 653.6** A Novel Method for Studying Zinc Deficiency in Vitro and Its Application. C.E. Richardson, L.S. Cunden, V.L. Butty, E.M. Nolan, S.J. Lippard, M.D. Shoulders, *Massachusetts Inst. of Technology*

**B138 653.7** Defining Chaperone Mediated Autophagy in Ischemic and Proteotoxic Models of Cardiac Pathology. R. Ghosh, J.S. Pattison, *Univ. of South Dakota*

**B139 653.8** Numerous Cellular Pathways Modulate Non-Imported Mitochondrial Protein Abundance. V.P.S. Shakyia, W. Barbeau, C. Knutson, A.L. Hughes, *Univ. of Utah Sch. of Med.*

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**B142 654.2** Understanding the Internalization Dynamics of N-Acetylglucosamine Transporter (Ngt1) in *Candida Albicans*. K.H. Rao, S. Ghosh, *Nat'l. Inst. of Plant Genome Res., India and Univ. of Kalyani, India*

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**B146 654.6** Characterizing the Spatial Variance of Autophagic Cargo Receptor, Optn. S.S. Najera, J.-M. Heo, W. Harper, *San Diego State Univ. and Harvard Med. Sch.*

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**B151 654.11** Regulation of Mitophagy by the Parkin Ubiquitin Ligase and Pink1 Ubiquitin Kinase. K. Gehring, *McGill Univ., Canada*

**B152 654.12** Arkadia (Ring Finger Protein 111) Mediates Sumoylation? Dependent Stabilization of Nrf2 Through K48-Linked Ubiquitylation. J. Davis, D. McIntosh, T. Walters, I. Arinze, *Meharry Med. Col.*

**B153 654.13** Identifying the Substrate Proteins of E3 Ubiquitin Ligase by Orthogonal Ubiquitin Transfer (OUT). J. Yin, Y. Wang, K. Bhuripanyo, G. Chen, L. Zhou, R. Liu, H. Zhou, *Georgia State Univ.*

**B156 655.3** Investigating Amino Acid Residues in the Active Site of Dibenzoanthropene Monooxygenase (Dszc). K. Johnson, G. Mendez, L. Gonzalez- Osorio, S. Jirde, B. Paley, J. Vey, *California State Univ., Northridge and Univ. of Michigan*

**B157 655.4** Structural Determination of Inteins from Halophilic Organisms. D.A. Reidy, *Col. of the Holy Cross*

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**B159 655.6** Expression and Characterization of the Receptor Tyrosine Kinase Tie2. M.A. Kennedy, Y. Wu, A. Grunseith, C.D. Sohl, *San Diego State Univ.*

**B160 655.7** Homing Endonuclease and Protein Splicing Activity of Inteins from Extreme Thermophiles. H.Y. Comeau, A.V. Gomez, K.V. Mills, *Col. of the Holy Cross*

**B161 655.8** Purification of Acid Phosphatase from *Lupinus Albus* for Characterization. S.R. Phillips, E.J. Fogle, *California Polytechnic State Univ.*

**B162 655.9** Comparing *e. Coli* Expression and Enzyme Kinetics of Wildtype and Codon Optimized 2-(2'-Hydroxyphenyl)benzenesulfinate Desulfinate (Dszb) from *Nocardia Asteroides* a3h1 and *Rhodococcus Erythropolis* igs8. M.L. St. George, K. Idrizi, L.M. Watkins, *James Madison Univ.*

**B163 655.1** Characterization of Bacterial Arginine Kinases in Species from the Order *Myxococcales*. L. Fannin, M. Aryal, K. Stock, M. Snider, D. Fraga, *Col. of Wooster*

**B164 655.11** Kinetic Analysis of PRMT1 Reveals Multifactorial Processivity and a Sequential Ordered Mechanism. J.I. Brown, T. Koopmans, J. van Strien, N.I. Martin, A. Frankel, *Univ. of British Columbia, Canada, Univ. of Utrecht, Netherlands and Leiden Inst. for Chemistry, Netherlands*

**B165 655.12** Control of the Rate Limiting Step by Active Site Compactness: Reaction of UDP-Galactopyranose Mutase with UDP-Arabinopyranose. P. Sobrado, G. Pierdominici-Sottile, J.J. Tanner, *Virginia Polytechnic Inst. and State Univ., Universidad de Nacional Quilmes, Argentina and Univ. of Missouri*

**B166 655.13** Investigating Putative Key Catalytic Residues and Uncoupled Hydroperoxyflavin Formation in the Mechanism of 6-Hydroxynicotinate-3-Monooxygenase, a Decarboxylative-Hydroxylase in Bacterial Nicotinate Catabolism. S.W. Perkins, M.J. Snider, *Col. of Wooster*

**B167 655.14** Determining the Mechanism of 6-Hydroxynicotinate 3-Monooxygenase (NicC), an Enzyme Involved in Nicotinate Degradation. K. Nakamoto, S. Gerislioglu, M.J. Snider, *The Col. of Wooster and Univ. of Akron*

**B168 655.15** The Relationship of Structural Stability to Temperature-Dependent Activity in a Family of Thermophilic Inteins. P.M. Exconde, *Col. of the Holy Cross*

**B169 655.16** Salt-Dependent Protein Splicing: *in Vitro* Enzymology and *in Vivo* Physiological Relevance. C.J. Janton, A.V. Gomez, A.M. Makkay, R.T. Papke, K.V. Mills, *Col. of the Holy Cross and Univ. of Connecticut*

**B170 655.17** *In Vitro* Biochemical Studies of the Decarboxylase Domain of Arna from *Pseudomonas Aeruginosa*. R. de Miranda, L. Miller Conrad, *San Jose State Univ.*

**B171 655.18** Differential Protein Splicing of Salt-Dependent Inteins from *Haloquadratum Walsbyi*. A.K. Lynch, S. Amunya, A. Gomez, J. Reitter, K. Mills, *Col. of the Holy Cross*

**B172 655.19** Biochemical Characterization of Dszd, the Flavin Reductase Involved in Bacterial Biodesulfurization. G. Mendez, *California State Univ., Northridge*

**B173 655.2** Endonuclease and Splicing Activity of a *Haloferax Volcanii* Intein. A. Cawood, *Col. of the Holy Cross*

**B174 655.21** Characterization of Mutant Sunflower Acetoacetyl CoA Thiolase. J. Dyer, *Montclair State Univ.*

**B175 655.22** The Variable Salt Dependence of Mini-Inteins from *Haloquadratum Walsbyi*. O.R. Conroy, A.V. Gomez, K.V. Mills, *Col. of the Holy Cross*

**B176 655.23** Structural and Biochemical Analyses of Bifunctional Alcohol Dehydrogenase Enzymes from *Entamoeba* Spp. M. Gabrielle, A. Espinosa, *Roger Williams Univ.*

**B177 655.24** The Cationic Residue Coordinated to the N1<sup>2</sup>-o-Position of Fmn in the Nitroreductase Family Is Highly Conserved Yet Not Central to Catalysis. J.M. Musila, S.E. Rokita, *Johns Hopkins Univ.*

**B178 655.25** A Bacterial Flavin-Dependent Oxidoreductase That Captures Carbon Dioxide into Biomass. J. Mattice, B. Streit, G. Prussia, J. Peters, J. DuBois, *Montana State Univ. and Washington State Univ.*

**B179 655.26** Electrostatic Interactions in Natural Enzymes: What Can We Learn for Enzyme Design?. M. J. Ondrechen, T.A. Coulther, L. Ngu, P.J. Beuning, *Northeastern Univ.*

**B180 655.27** Kinetic Characterization of *Staphylococcus Aureus* speG Polyamine N-acetyltransferase. P. Boeck, R. Renolo, J. Forwood, M.L. Kuhn, *San Francisco State Univ. and Charles Sturt Univ., Australia*

**B181 655.28** Fsla Biochemical Characterization as a Baseline for Future Inhibitor Analysis. D.G. Miles, K.M. Hoffmann, *California Lutheran Univ.*

**B182 655.29** Binding Association and Kinetic Characterization of Desd Reveals High Substrate Specificity and Cooperative Behavior. L. Tran, K.M. Hoffmann, *California Lutheran Univ.*

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**B155 655.2** Investigating the Kinetics, Mechanism, and Reaction Pathway of a Biodesulfurizing Enzyme from *Rhodococcus Erythropolis*, Dibenzoanthropene Monooxygenase. S.A. Jirde, G. Mendez, L. Gonzalez-Osorio, K.J. E. Johnson, B. Paley, J. Vey, *California State Univ., Northridge and Univ. of Michigan*

**B183 655.3** Determining the Active Site Base and Order of Substrate Addition Within  $F_{420}$ -Dependent Glucose-6-Phosphate Using Steady-State and Pre Steady-State Kinetics and Isotope Effects Methods. K. Johnson-Winters, M. Oyugi, L. Davis, G. Bashiri, E.N. Baker, *The Univ. of Texas at Arlington and Univ. of Auckland, New Zealand*

**B184 655.31** Resolving the Mechanism of Glycine Oxidation by Goxa Using X-Ray Crystallography. D.M. Avalos, K. Mamounis, V.L. Davidson, E.T. Yukl, *New Mexico State Univ. and Univ. of Central Florida*

**B185 655.32** Exploring New Ligand Architecture Derived from Purple-Acid Phosphatase Type and Their Interactions with Oximes: Towards Useful Catalyst for Dephosphorylating Pesticides. N.T. Le, M.M. Allard, *La Sierra Univ.*

**B186 655.33** Effects of Hydrogen Bond Donors on Reactivity of Sulfite Oxidase. S. Bali, *New Mexico State Univ.*

**B187 655.34** Mutational Analysis of the Clu2593c Homing Endonuclease Reveals Specific Residues Required for DNA Binding and Cleavage. L. Davis, B. Takushi, B.K. Kaiser, *Seattle Univ.*

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**B190 656.3** Sufex Based Click Chemistry for Peptide Stapling. J. Han, J. Celaje, J. Thomas, V. Fokin, *Univ. of Southern California*

**B191 656.4** The Role of Autophagy and Mitophagy in Synthetic Lethality of Kras Mutant Human Colorectal Cancer Cells by Phytochemical Formosanin C. C.-L. Su, C. Ni, *Nat'l. Taiwan Normal Univ., Taiwan*

**B192 656.5** Assessment of *Humulus Lupulus*' Essential Oil Profile and Its Effect on Fungal Infection. S.D. Walden, C.W. Anderson, E. Lowry, M.J. Wolyniak, *Hampden-Sydney Col.*

**B193 656.6** Cell-Based Screening Platforms for Identification of Modifiers of Odor-Triggered Mosquito Behaviors Acting Through Binding to the Orco Subunit of Odorant Receptor Heteromers. K. Iatrou, P. Tsitoura, N. Sdralia, M. Konstantopoulou, *Nat'l. Centre for Scientific Res. "Demokritos", Greece*

**B194 656.7** A Synergistic Combination of Huperzine A, *Convolvulus Pluricaulis* and *Celastrus Paniculatus* Promote Cognitive Function and Health. I. Ahmad, A. Swaroop, D. Bagchi, *Cepharm Life Sciences, Inc. and Cepharm Res. Ctr.*

**B195 656.8** *Euphorbia Bicolor* (Euphorbiaceae) Latex Extract Induces Antinociception and Analgesia in a Rat Inflammatory Pain Model. P. Basu, T. Harris, S. Tongkhuya, A. Riley, J. Wojtaszek, J. Granger, D.L. Averitt, C. Maier, *Texas Woman's Univ., U.S. Army Inst. of Surgical Res., AIT Laboratories and A HealthTrackRx Company*

**B196 656.9** A Small Molecule Virulence Factor Suppresses Plant Immune Response. B. Li, E.M. O'Neill, T. Mucyn, J.B. Patteson, J. Baccile, F.C. Schroeder, E. Massolo, J. Dangel, *Univ. of North Carolina at Chapel Hill and Cornell Univ.*

**B197 656.1** Antitumor Activity of *Simarouba Tulae* Extracts in a Panel of Cancer Cell Lines. I. Conde Del Moral, J. Reyes, P. Vivas-Mejia, C. Ospina, *Universidad de Puerto Rico, Rio Piedras Campus, Puerto Rico, Univ. of Puerto Rico, Med. Sciences Campus, Puerto Rico, Univ. of Puerto Rico and Cayey Campus, Puerto Rico*

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**B199 656.12** Design and Synthesis of a Triazole-Based Small Molecule Library for the Inhibition of Bacterial Quorum Sensing. C.E. Kruszynski, K. Hinspeter, A.M. Danowitz, *Mercyhurst Univ.*

**B200 656.13** Investigations of Essential Oils as Quorum Sensing Inhibitors of *Vibrio Fischeri*. K. Hinspeter, A.M. Danowitz, *Mercyhurst Univ.*

**B201 656.14** Antioxidant and Ameliorative Potential of Aqueous Seed Extracts of *Delonix Regia* on High Fat Diet and Streptozotocin Induced Diabetes in Female Wistar Rats. B.M. Onyegeme-Okerenta, P.O. Ogbeye, C.C. Monago-Ighorodje, I.N. Monago, *Univ. of Port Harcourt, Nigeria and Federal Polytechnic Oke, Nigeria*

**B202 656.15** Towards a Pan-Group Activator of the Quorum Sensing System in the Common Pathogen *Staphylococcus Epidermidis*. W. Shen, Y. Tian, H.E. Blackwell, *Univ. of Wisconsin-Madison*

**B203 656.16** Identifying the Target Protein of an Antipyocyanin Compound in *Pseudomonas Aeruginosa* Using Photoaffinity Labeling. R. Moore, K. Aboulhosn, L.M. Conrad, *San Jose State Univ.*

**B204 656.17** *In Vitro* Microbiological Evaluation of Some Metal Complexes of 4-Hydroxy-2-oxo-2H-Chromene-3-Carbonitrile. S. Govori Odai, H. Ibrahim, M. Daci, A. Haziri, *Univ. of Prishtina, Kosovo*

**B205 656.18** Carnosol Increases Skeletal Muscle Cell Glucose Uptake via AMPK-Dependent GLUT 4 Glucose Transporter Translocation. D.C. Baron, F. Vlachoski, I. Vlachogiannis, E. Tsiani, *Brock Univ., Canada*

**B206 656.19**  $4\beta$ -Hydroxywithanolide E Inhibits Tumor Necrosis Factor  $\alpha$ -Induced Tissue Factor Expression and Tumor-Associated Coagulation in Non-Small Cell Lung Cancers. K.-Y. Hsieh, Y.-H. Lin, F.-R. Chang, C.-C. Wu, *Kaohsiung Med. Univ., Taiwan*

**B207 656.2** Design and Characterization of an NQO1-Activated Spiroisindolinone Derivative for Glioma Treatment. S.R. Punganuru, H.R. Madala, K. Srivenugopal, *Texas Tech Univ. Health Sciences Ctr.*

**B208 656.21** Accessing New Chemical Diversity from Ancient Non-Actinobacterial Strains. S.M. Terrell, Y. Wu, J.G. Klein, L.K. Charkoudian, *Haverford Col.*

**B209 656.22** Natural Products as a Source to Discover Novel Drug Targets in *p. falciparum*. J. Butler, *Univ. of Georgia*

**B210 656.23** Anticancer Effect of Silibinin B on Colorectal Cancer Cell Line. M.A. Horita, U. Ezekiel, *Saint Louis Univ.*

**B211 656.24** Aerobiotics: Toward the Discovery of New Antibiotics from Airborne Actinomycetes. Z. Hudgens, A. Wickard, C. Nealon, C. Sweet, *United States Naval Academy*

**B212 656.25** Biosynthesis of Non-Ribosomal Peptide Beta-Lactones by Plant-Associated *Pseudomonas Fluorescens*. J. Schaffer, T. Wenciewicz, *Washington Univ. in St. Louis*

**B213 656.26** Safety and Efficacy of a Novel *Curculigo Orchioideis* Extract in Boosting Testosterone Levels in Male Rats. A. Swaroop, H.G. Preuss, M. Bagchi, D. Bagchi, *Cepharm Res. Ctr., Georgetown Univ. Med. Ctr. and Dr. Herbs LLC*

**B214 656.27** International Research Infrastructures—New Research Opportunities for Biochemists and Molecular Biologists. B. Stechmann, *EU-OPENSCREEN / FMP Leibniz Inst. for Molecular Pharmacology, Germany*

**B215 656.28** Anticancer Effect of Cucurbitacin B on Head and Neck Cancer. A.K. Ganapathy, M.A. Horita, V.A. Selvamani, T. Subramanian, G.A. Chinnadurai, U. Ezekiel, *Saint Louis Univ.*

**B216 656.29** Genome-Mining in *Pseudomonas* Identifies a New Class of Small Molecules. A. Kretsch, G. Morgan, K. Santa Maria, J. Tyrrell, I. Vallet-Gely, B. Li, *Univ. of North Carolina at Chapel Hill and Institut de Biologie Intégrative de la Cellule, France*

**B217 656.3** Montmorency Tart Cherry Anthocyanins: Dose-Dependent Antioxidant Activity Against Cholesterol Oxidation. I.G. Medina Meza, M.D. Schweiss, C. Barnaba, *Michigan State Univ. and Univ. of Michigan*

**B218 656.31** Synthesis of Fluorescein-Linked, Zinc-Based Metal Organic Frameworks as Carriers of Targeted Treatments for Retinopathies. Z. Fralish, D. Bromfield-Lee, J. Eubank, S. Shelby, *Florida Southern Univ. Col.*

**B219 656.32** The Role of Fruits on the Cancer Incidence in Cusco Peru. J. Jones, C. Munoz, L. Ledesma, V. Faustino, L.A. Nogaj, L. Roberts, S. Deprele, *Mount Saint Mary's Univ.*

**B220 656.33** Protective Effects of a Red Maple (*Acer Rubrum*) Leaves Extract on Human Keratinocytes Against H<sub>2</sub>O<sub>2</sub>-Induced Oxidative Stress. H. Ma, H. Guo, C. Liu, Y. Wan, N.P. Seeram, *Wuyi Univ., People's Republic of China, No.1 Hosp. of China Med. Univ., People's Republic of China, Univ. of Rhode Island and Providence Col.*

**B221 656.34** Decorating with Amino Acids: Biosynthetic Investigation of a Unique Polyphenol Antibiotic. A. Whiteley, N. Shah, C. Horta, V. Petukhova, L. Sanchez, K.R. Watts, *California Polytechnic State Univ. and Univ. of Illinois at Chicago*

**B222 656.35** Pomegranate Phenolics Inhibit Type I Collagen Cross-Linking Induced by Glycative Stress. A. Cai, W. Liu, H. Ma, G.W. Dombi, J.A. Dain, N.P. Seeram, *Univ. of Rhode Island*

**B223 656.36** Inhibition of Pentameric Ligand-Gated Ion Channels by Lophotoxin, a Diterpenoid from Coral *Lophogorgia Chilensis*. G.A. Camacho-Hernandez, L. Huber, W. Fenical, P. Taylor, *UCSD*

**B224 656.37** Fenugreek Saponin Improves Insulin Sensitivity in Obese Subjects—A Randomized, Placebo Controlled, Pilot Study. S. Nair, S.L. Barnes, D.T. Smith, A.S. Nair, *Univ. of Wyoming and Nutriwyo LLC*

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**B225 657.1** Fluorescent Peptide Biosensor for Probing Cdk5 Kinase Activity in Glioblastoma and Its Applications for Diagnostics and Drug Discovery in Vitro and by Fluorescence Imaging. M.C. Morris, M. Peyressatre, I. Soussi, H. Boukhaddaoui, *Institut des Biomolécules Max Mousseron, France*

**B226 657.2** Diphtheria Toxin Resistance Selective Marker for *In vivo* Selection. T.R. Gomez, J.M. Gutierrez, D.J. Bacich, D.S. O'Keefe, *Univ. of the Incarnate Word and The Univ. of Texas HSC at San Antonio*

**B227 657.3** Dimethylmaleimide: A New Reagent for Protein Bioconjugation. R. Dyer, M. Richardson, J. Garcia, A. Chu, S. Majumdar, G.A. Weiss, *Univ. of California and Irvine*

**B228 657.4** Characterizing Binding Interactions and Elucidating Structure of Aptamer-Based Biosensors. L.T. Armstrong, A.J. Bonham, *Metropolitan State Univ. of Denver*

**B229 657.5** Development of Novel Biosensors for Non-Invasive and Rapid Diagnosis of Celiac Disease. A. Nguyen, A.J. Bonham, *Metropolitan State Univ. of Denver*

**B230 657.6** A New Membrane Potential ( $\delta\psi$ )-Independent Iron Indicator Selectively Detects Mitochondrial Chelatable Iron but Not Calcium in Living Cells. J. Hu, A.-L. Nieminen, A. Kholmukhamedov, C.C. Lindsey, C.C. Beeson, J.J. Lemasters, *Med. Univ. of South Carolina*

**B231 657.7** Troubleshooting the Process of Creating an Electrochemically Active Elastin-Like Polymer. A.F. Mack, M. Morales, E.R. M. Balog, J.M. Halpern, *Univ. of New Hampshire and Univ. of New England*

**B232 657.8** A Novel Suite of Genetically Encoded Fluorescent Biosensors for Dynamic and Sensitive Enzyme Activity Measurements *in Vivo*. S. Mehta, A. Mo, J. Zhang, J. Zhang, *UCSD*

**B233 657.9** Towards the Development of a Real-Time Insulin Biosensor. S. Sen, E.M. Crawley, K.N. Gabriel, M.H. Fletcher, G. Speciale, B. Vincents, J.H. Mo, K. Safronyuk, C.A. Totoiu, S. Majumdar, E.L. Botvinick, G.A. Weiss, *Univ. of California, Irvine, Flinders Univ., Australia and Novozymes, Denmark*

**B234 657.1** Investigation of New Chemical Probes for Detection of Citrulline Using Small Molecule Model Systems. B. Delaney, B. Laufenberg, D.V. Kadnikov, *Univ. of Wisconsin—Stout*

**B235 657.11** Identification and Characterization of Modified DNA Aptamers Targeting Enox2. L. Fetter, A.J. Bonham, *Metropolitan State Univ. of Denver*

**B236 657.12** Ovarian Cancer Targeting Phage Clones for *in Vivo* Near-Infrared Optical Imaging. M. Asar, J. Newton-Northup, S. Deutscher, M. Soendergaard, *Western Illinois Univ. and Univ. of Missouri*

**B237 657.13** Imaging Agent for Redox-Active Molecules. M. Bongay, D. Sin, L.M. Sigua, M. Halim, *California State Univ. and East Bay*

**B238 657.14** Fluorescence Lifetime Imaging of Compartmental pH Dynamics Using Red Fluorescent Protein Sensors in Live Cells. E. Haynes, M. Rajendran, A. Lyon, N. Noinaj, R. Day, M. Tantama, *Purdue Univ. and Indiana Univ. Sch. of Med.*

**B239 657.15** Utilizing Design Principles of Electrochemical DNA Aptamer Biosensors in Multiple Optical Assay Methodologies. A.J. Bonham, *Metropolitan State Univ. of Denver*

**B240 657.16** Development of Ligand-Based Inhibitors for Protein N-Terminal Methyltransferase. R. Huang, *Purdue Univ.*

**B241 657.17** Urinary Platelet-Activating Factor as an Indicator of Interstitial Cystitis/Bladder Pain Syndrome. J. McHowat, T.S. Isbell, E.C. Campian, *Saint Louis Univ.*

**B242 657.18** Expanding the Toolbox of Chemoenzymatically Synthesized Peptidoglycan Probes and Investigating Their Interaction with Nucleotide Sugar Transporters. Z.S. Jones, K.E. DeMeester, H. Liang, M. Jensen, E. D'Ambrosio, C. Leimkuhler Grimes, *Univ. of Delaware*

**B243 657.19** Adoption of DNA Aptamer-Based Biosensors into Nanoparticle-Based Complexes for Raman Detection. D. Clark, A.J. Bonham, *Metropolitan State Univ. of Denver*

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**B246 658.2** Phospholipids as Indicators of Castration Resistant Prostate Cancer. L.M. Ingram, M. Manusoura, S. Pati, B. Cummings, *Univ. of Georgia*

**B247 658.3** Defects in Tm6sf2 Impairs Lipidation of Nascent Vldl and Leads to Accumulation of Liver Fat. S.A. Martin, E. Smagris, J.C. Cohen, H.H. Hobbs, *Howard Hughes Med. Inst. and The Univ. of Texas Southwestern Med. Ctr.*

**B248 658.4** Advancement in Atopic Dermatitis Research Through the Use of a Novel Skin Tape Strip Mass Spectrometry Based Processing Protocol. E. Berdyshev, E. Goleva, I. Bronova, M.A. Seibold, J. Jung, D.Y. M. Leung, *Nat'l. Jewish Health*

**B249 658.5** Comparative Lipidomic Profiling of Parasite-Infected and Non-Infected Northern Saw-Whet Owls. C.S. Peros, T.A. Garrett, *Vassar Col.*

**B250 658.6** Urine Odor Profiling for Diagnosis of Interstitial Cystitis. R.J. Park, M. Shahid, A. Yeon, J. Kim, *Cedars-Sinai Med. Ctr.*

**B251 658.7** Lipid Abnormalities and Hepatic Dysfunction Associated with *Yersinia Pestis* Infection in Non-Human Primate Model. A. Gautam, S. Muhie, N. Chakraborty, A. Hoke, D. Donohue, S.A. Miller, R. Hammamieh, M. Jett, *U.S. Army Ctr. for Environmental Health Res.*

**B252 658.8** Metabolomic Profiling Associated with Deployment-Related Stressors in Army Personnel. A. Gautam, D. Donohue, D. Abu-Amara, A. Hoke, A. Genfi, E. Blessing, R. Hammamieh, C. Marmar, M. Jett, *U.S. Army Ctr. for Environmental Health Res. and Steven and Alexandra Cohen Veterans Ctr. for the Study of Posttraumatic Stress and Traumatic Brain*

**B253 658.9** Metabolic Markers of Hyperhomocysteinemia in Healthy Adults Population. M.I. Waly, A. Ali, S. Padmanabhan, Y. Al-Farsi, *Sultan Qaboos Univ., Oman*

**B254 658.1** Metabolomic Analysis of Her2-Positive Breast Cancer Cells. J.A. Bush, M.K. Sahni, R.K. Ravindran, I.H. Khan, V.V. Krishnan, *California State Univ., Fresno, UC, Davis*

**B255 658.11** Metabolite Concentrations Are Unstable During Cell Sorting. E.M. Llufrío, L. Wang, F. Naser, G.J. Patti, *Washington Univ. in St. Louis*

**B256 658.12** Aqueous Extract of *Aspilia Africana* C.d.Adams Leaves Ameliorates Cadmium-Induced Testicular Perturbations in Male Wistar Rats. B.A. Ayo-Lawal, T.M. Yakubu, *Univ. of Ilorin, Nigeria*

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**B257 659.1** Interleukin-Like Emt Inducer *ILE1* Mediates Breast Cancer Stem Cell Formation and Tumorigenesis Through LIF Receptor Signaling. A. Woosley, A. Dalton, P. Howe, *Med. Univ. of South Carolina*

**B258 659.2** Leptin Alleviates the Saturated Fatty Acid-Induced Increase in Bace1 Expression and Amyloid- $\beta$  Production—Relevance to Alzheimer's Disease Pathogenesis. G. Marwarha, O. Ghribi, *Univ. of North Dakota Sch. of Med. and Health Sciences*

**B259 659.3** The cholesterol metabolite 27-hydroxycholesterol decreases BDNF expression through GPR17 activation in human SH-SY5Y neuroblastoma cells. G. Marwarha, O. Ghribi, *Univ. of North Dakota Sch. of Med. & Health Sciences*

**B260 659.4** Aqueous Extract of Lavender Demonstrates Immunomodulatory Effects Through Activation of Nfkb. A.G. Butala, S. Byrd, K. McLain, *Fort Lewis Col.*

**B261 659.5** Comparing the Solution Conformation and Activin-Binding of Follistatin Isoforms. L.S. S. Bhenderu, K. Murray, N. Stepurko, X. Wang, M. Hyvönen, S. D'Arcy, *The Univ. of Texas at Dallas and Univ. of Cambridge, United Kingdom*

**B262 659.6** Comparison of Polyvinyl Alcohol (PVA) vs. Collagen Sponges to Assess Macrophage Activation Patterns in Rats. K. Alkhatib, A. Ozkizilcik, J.M. Durdik, J.A. Stenken, *Univ. of Arkansas*

**B263 659.7** Understanding the Regulation of Tgf- $\beta$  I Signaling Pathway in Human Bronchial Epithelial Cells: The Role of Pp1 and Lmtk2. D.F. Cruz, K.M. Cihil, M. Köhn, C.M. Farinha, A. Swiatecka-Urban, *Children's Hosp. of Pittsburgh, Univ. of Freiburg, Germany and Univ. of Lisbon, Portugal*

**B264 659.8** Deletion of Tumor-Derived Il-6 Maintains Muscle Mass and Attenuates Lipolysis with Evidence for Soluble Il-6 $\alpha$  as a Driver of Pancreatic Cancer Cachexia. J. Rupert, T. Zimmers, *Indiana Univ. Sch. of Med.*

**B265 659.9** Distinct Transcriptional Profile Activated by Scyl Through Jak-Mediated Stat3 in Partially Activated Macrophages. D. Lee, M. Schwarz, *Indiana Univ. Sch. of Med.*

**B266 659.1** P-Cadherin Overexpression Enhances Survival Signaling in Dysplastic Oral Epithelia via the Epidermal Growth Factor Receptor. C. Neal, A. Mody, A. Parker, E. Cameron, S. Plager, K. Lawson, *Midwestern Univ.*

**B267 659.11** Iqgap1 Binds the Axl Receptor Tyrosine Kinase and Inhibits Its Signaling. L. Gorisse, Z. Li, A.C. Hedman, D.B. Sacks, *Nat'l. Insts. of Health*

**B268 659.12** Insulin Modulates Hippo Signaling by Impairing Yap Function. A. Hedman, S. Sayedyahosseini, D. Sacks, *Nat'l. Insts. of Health*

**B269 659.13** Quantification of the Release of Ngf from Osteoblasts and Osteocytes in Response to Mechanical Load. M.S. Kim, R.L. Duncan, M. Boggs, *Univ. of Delaware*

**B270 659.14** Planar Enteroids Reveal an Autonomous Wnt and Bmp Circuit Controlling Intestinal Epithelial Growth and Organization. C.A. Thorne, I.W. Chen, L.E. Sanman, M.H. Cobb, L.F. Wu, S.J. Altschuler, *Univ. of Arizona, Univ. of California, San Francisco and The Univ. of Texas Southwestern Med. Ctr.*

**B271 659.15** Determination of the Three-Dimensional Structure of Full-Length Human Epidermal Growth Factor Receptor by Cryo-Electron Tomography. E.R. Purba, R.R. Akhouri, L-g. Ofverstedt, U. Skoglund, I. Maruyama, *Okinawa Inst. of Science and Technology, Japan*

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**B272 660.1** Notch Heterodimer Ncd Complexes Have Divergent Functions Compared to Ncd Homodimer Complexes. J.J. Crow, A. Albright, *Boise State Univ.*

**B273 660.2** Investigating the Role of Flo1 in the Lack of Flocculation of Yeast Brewing Strain Thirsty Pagan Local. A.E. Rieffer, Z. Via, *The Col. of St. Scholastica*

**B274 660.3** Increases in Transmembrane Glycoprotein NMB (GPNMB), Phospho-Erk1/2, and Matrix Metalloproteinase (MMP)-9 Follow Decline in Arylsulfatase B in Cystic Fibrosis. J.K. Tobacman, S. Bhat-tacharya, L. Feferman, G. Sharma, *Univ. of Illinois at Chicago and Rush Univ. Med. Ctr.*

**B275 660.4** Phosphoproteomic Analysis Identifies Dynamic Regulation of Caveolin-1 Phosphorylation and Caveolae Formation by mTorc2 in Bladder Cancer Cells. A. Hau, S. Gupta, M. Leivo, W. Zhou, A. Hodge, J. Wulfschlegel, B. Conkright, K. Bhuvaneshwar, S. Rao, S. Madhavan, K. Nakashima, E. Petricoin III, *UCSD, George Mason Univ. and Georgetown Univ.*

**B276 660.5** Soluble Activin Type IIB Receptor Decoy Changes Gene Expression Profiles of Bone Cells in the *Oim* and Not the *G610C* Mouse Model of Osteogenesis Imperfecta. C.L. Omosule, Y. Jeong, C. Phillips, F. Pfeiffer, *Univ. of Missouri*

**B277 660.6** Cross-Talk Between Mapk Inhibitors and Tgf- $\beta$  Signaling Results in Variable Activation of Human Dermal Fibroblasts. D.M. Dolivo, S.A. Larson, T. Dominko, *Worcester Polytechnic Inst.*

**B278 660.7** Artesunate Antagonizes Myofibroblast Markers and Fibrosis-Associated Extracellular Matrix Protein Expression in Human Dermal Fibroblasts. S.A. Larson, D. Dolivo, T. Dominko, *Worcester Polytechnic Inst.*

**B279 660.8** The Impact of the Physical Micro-Environment on Notch Signaling. M.A. Detweiler, *Boise State Univ.*

**B280 660.9** Alternative Splicing of Magp2 Generates a Non-Glycosylated Variant Still Capable of Localizing to Extracellular Microfibrils. A.R. Miyamoto, *California State Univ. and Fullerton*

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## G proteins and Small GTPases

**B281 661.1** Phosphorylation of G Protein  $\gamma$  Subunit Ste18 and the Ste5 Scaffold Form a Braking System that Governs Pathway Activation Kinetics and Switch-Like Signaling in Yeast. M. Torres, S. Choudhury, P. Baradaran-mashinchi, *Georgia Inst. of Technology*

**B282 661.2** Atypical G Protein  $\beta 5$  Promotes Cardiac Oxidative Stress and Fibrotic Remodeling in Response to Multiple Cancer Chemotherapeutics. S. Chakraborti, A. Pramanick, B. Maity, *Centre of BioMed. Res., India*

**B283 661.3** Effects of Differential Acylation on Aberrant Growth Signaling by Overexpressed G $\alpha 13$ . N.F. White, G.R. McDiarmid, A.C. Tagliatela, T.E. Meigs, *Univ. of North Carolina at Asheville*

**B284 661.4** A Divergent C-Terminal Region of G $\alpha 12$  and G $\alpha 13$  Provides Unique Effector Binding and Growth Signaling Mechanisms. C.R. Quick, R.C. Stecky, M.L. Mull, E.N. Dover, T.E. Meigs, *Univ. of North Carolina at Asheville*

**B285 661.5** Beta-Cell-Specific Loss of the Inhibitory G Protein, G $\alpha_{i2}$ , Prevents Development of Type I Diabetes in Nod Mice. R. Fenske, H. Wienkes, D. Peter, M. Kimple, *Univ. of Wisconsin—Madison*

**B286 661.6** Understanding  $G_{\alpha_{11}}$  Localization and Trafficking in Uveal Melanoma. C. Randolph, P. Wedegaertner, *Thomas Jefferson Univ.*

**B287 661.7** Comparison Between the Structure-Function Relationships in Oncogenic and Wild-Type  $G_{\alpha}$  Subunits. J. Goossens, B. Levenson, D. Freitas, *Loyola Univ. Chicago*

**B288 661.8** New Insights into the Role of SmgGds as a Major Integrator of Signaling by Ras and Rho Family Members in Cancer. C. Williams, P. Gonyo, A. Brandt, O. Koehn, E. Lorimer, B. Unger, S-W. Tsaih, Y. Sun, M. McNally, H. Rui, M. Flister, C. Bergom, *Med. Col. of Wisconsin*

**B289 661.9** Loss of the Unique Inhibitory G-Protein,  $G_{\alpha_{12}}$ , in the Pancreatic  $\beta$ -Cell Protects Against Diet-Induced Glucose Intolerance by Enhancing Insulin Secretion, but Is Not  $\alpha$ -Cell Autonomous. A. Reuter, M. Schaid, E. Laundre, J. Harrington, H. Wienes, C. Mullenberg, M. Kimple, *Univ. of Wisconsin-Madison*

**B290 661.1** TCL/RhoJ Vesicular Localization Is Regulated by GDP-Loading of Its Core GTPase Domain. B.R. Tader, M.J. Hamann, *Bernidji State Univ.*

**B291 661.11** Investigating a Role for TCL/RhoJ in Endocytic Pathways Using Live Cell Imaging. B.N. Simons, C.E. Baumgartner, M.J. Hamann, *Bernidji State Univ.*

**B292 661.12** Detection of Novel Rho GAP/GTPase Selectivities Using *in Vitro* Split-Luciferase Assays. B.A. Wilander, M.J. Hamann, *Bernidji State Univ.*

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### Protein Kinases

**B293 662.1** Atypical Protein Kinase C-Specific Activity Reporter Reveals Novel Activation Mechanism of Atypical Protein Kinase C by Sphingosine 1-Phosphate. T. Kajimoto, A.D. Caliman, I.S. Tobias, T. Okada, J.A. McCammon, S-I. Nakamura, A.C. Newton, *UCSD and Kobe Univ., Japan*

**B294 662.2** Mapping Domain Interaction Networks in Protein Kinases with Optical Tweezers. R. Maillard, *Georgetown Univ.*

**B295 662.3** A Subtle Amino Acid Change Impacts Kinase Function in Dramatically Distinct Ways. M.T. Kunkel, A.M. Hudson, J. Brognard, A.C. Newton, *UCSD, Univ. of Manchester, United Kingdom, Nat'l. Cancer Inst. and Nat'l. Insts. of Health*

**B296 662.4** Analyzing Protein Kinase C Domain Interactions with the Formin Sepa. E. Olsen, B. Betton, Z. Atiq, A. Singh, L. Campbell, P.C. Parish, T. Hill, L. Jackson-Hayes, *Rhodes Col.*

**B297 662.5** O-GlcNAcylation of the Human Kinome. X. Liu, G. Han, S. Renuse, A. Pandey, H. Zhu, G. Hart, *Johns Hopkins Univ.*

**B298 662.6** Deciphering Key Cancer and Inflammation Signaling Pathways with a Novel Homogeneous Bioluminescent Cell Based Kinase Activity Assays. B. Hwang, N. Nath, S. Goueli, H. Zegzouti, *Promega Corporation*

**B299 662.7** Protein Kinase C $\alpha$  (PKC $\alpha$ ) Gain-of-Function Variant in Alzheimer's Disease Displays Enhanced Catalysis by a Mechanism That Evades Down-Regulation. J. Callender, Y. Yang, N. Stephenson, A. Jones, J. Brognard, A. Newton, *UCSD, Cancer Res. UK Manchester Inst., United Kingdom, Nat'l. Cancer Inst. at Frederick and Nat'l. Insts. of Health*

**B300 662.8** Rare Alzheimer's Disease-Associated Protein Kinase C Variant Displays Altered Pharmacological Profile in a Cellular Environment. Y. Yang, J. Callender, A. Newton, *UCSD*

**B301 662.9** Trans-Phosphorylation Activates the Yeast Protein Kinase Kin2, an Ortholog of Human Microtubule Affinity Regulating Kinase. C. Ghosh, L. Sathe, M. Dey, *Univ. of Wisconsin-Milwaukee*

**B302 662.1** A Mechanism for Signal-Dependent IKK $\beta$  Activation Driven by Molecular Interactions with Poly-Ubiquitin-Bound Nemo. S. Cohen, K. Shumate, T. Huxford, G. Ghosh, *San Diego State Univ., UCSD*

**B303 662.11** Identification of Novel Fibroblast Growth Factor Receptor Signaling Components. E.J. Eichelberger, *Ithaca Col.*

**B304 662.12** A Luminal Kinase Regulates Sarco-plasmic Reticulum Calcium Cycling and Heart Disease. A. Pollak, S. Wiley, J. Dixon, *UCSD*

**B305 662.13** Phosphorylation of GPCR Kinase 2 in Intact Cells: A Proteomic Approach. R. Sterne-Marr, J. Vijay, J. Keyeskey, A. Shareef, *Siena Col.*

**B306 662.14** Elucidating Structure-Function Relationships of the Human Protein Kinase Mek1. R.T. Lee, L.M. Ravatt, C.E. Runco, J.P. Oza, *California Polytechnic State Univ.*

**B307 662.15** Molecular Mechanism of Apoptosis Signal-Regulating Kinase I Oligomerization and Auto-Activation. A. Rahman, X. Zhan, *Tennessee Tech. Univ.*

**B308 662.16** The Pkc Inhibitor Bimi Functions as a Bi-Topic Ligand That Toggles a Conserved Allosteric Switch to Drive Potent Kinase Inhibition. N. Ma, S. Lee, T. Devamani, M. Sandhu, R. Sommesse, S. Sivaramakrishnan, N. Vaidehi, *City of Hope Beckman Res. Inst. and Univ. of Minnesota Twin Cities*

**B309 662.17** Ca<sup>2+</sup>/Calmodulin-Dependent Protein Kinase Kinase  $\beta$  Negatively Regulates Progesterone Mediated Pgrmc1 Signaling and the Warburg Effect. M.G. Sabbir, P. Fernyhough, *St. Boniface Hosp. Albrechtsen Res. Centre, Canada and Univ. of Manitoba, Canada*

**B310 662.18** Intracellular Zinc as a Phosphorylation Modulator of Protein Kinase C Delta. K. Slepchenko, J. Holub, Y.V. Li, *Ohio Univ.*

**B311 662.19** Proline-Rich Tyrosine Kinase Phosphorylation's Effect on the Na<sup>2+</sup>/h<sup>+</sup> Exchanger Isoform 1. K.P. Bagnell, J.J. Provost, M. Wallert, *Bernidji State Univ. and Univ. of San Diego*

**B312 662.2** Identification of Proteins Interacting with Fyn Kinase at Fertilization in *Patiria Miniata*. L.S. Bates, D. Carroll, *Florida Inst. of Technology*

**B313 662.21** Mk5 and Erk3 Play Overlapping but Distinct Roles in Regulating Cardiac Fibroblast Function. P. Sahadevan, S.A. Nawaito, A. Calderone, M. Gaestel, B.G. Allen, *Montreal Heart Inst., Canada and Hannover Med. Sch., Germany*

**B314 662.22** Deciphering Dyrk1a Signaling Using Proteomics and Transcriptomics. Z. Poss, C. Ebmeier, H. Simpson, M. Pagratis, T. McClure-Begley, W. Old, *Univ. of Colorado*

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### Active Learning in the Molecular Life Sciences

**B315 663.1** When Active Learning Fails: How Faculty Beliefs Inform Their Teaching and Influence Student Outcomes. S.M. Lo, *UCSD*

**B316 663.2** The Role of ANKDR49 in Evaluating the Prognosis of Glioma. H. Duan, C. Hao, S. Wang, H. Wang, L. Gao, X. Zheng, S. Duan, W. Gao, C. Zhang, *The First Clinical Col. of Shanxi Med. Univ., People's Republic of China, The Public Health Col. of Shanxi Med. Univ., People's Republic of China and Shanxi Med. Univ., People's Republic of China*

**B317 663.3** Effects of a Data Analysis Intensive Course on Student Critical Thinking Skills, Confidence, and Post-Graduation Success. K.K. Resendes, *Westminster Col.*

**B318 663.4** Understanding Curriculum Effectiveness and the Student Experience in a Modular Undergraduate Laboratory Experience Integrating Research and MALDI-TOF MS. J.E. Grant, C. Lutz, D. Huffman, *Univ. of Wisconsin-Stout, Anoka-Ramsey Community Col. and Univ. of Kansas*

**B319 663.5** Addressing Enzyme-Substrate Interaction Misconceptions with 3D Physical Models in an Undergraduate Biochemistry Course. T.L. Ekstrom, C.R. Terrell, *Univ. of Minnesota*

**B320 663.6** A Toxic Collaboration: Using Spions and Shrimp to Bridge Courses in Chemistry and Biology for Undergraduate Engineering Students. R.P. Rogers, L.E. Grove, *Wentworth Inst. of Technology*

**B321 663.7** Introducing Students to Biochemistry Through an Inquiry-Based Curriculum Documented Using Electronic Notebooks on Scinote. S. C. Daubner, V. Gutierrez, M. Rodriguez, *St. Mary's Univ.*

**B322 663.8** Sustained Teaching Mentoring Works and Benefits Mentors as Well as Those Mentored: The Promoting Active Learning and Mentoring (Palm) Network. M.J. Wolyniak, S. Wick, A.J. Prunuske, M. Peifer, Hampden-Sydney Col., Univ. of Minnesota Twin Cities, Med. Col. of Wisconsin and Univ. of North Carolina at Chapel Hill

**B323 663.9** Increasing Active Learning in the Biochemistry Classroom: Using Group Quizzes to Stimulate Discussion. L.J. Moore, Monmouth Col.

**B324 663.1** Enhancing Scientific Communication About and Ethical Reasoning Surrounding Gene Modifications Through a Collaborative Learning Experience. A.M. Danowitz, V.M. Ehret, Mercyhurst Univ.

**B325 663.11** The Intersection of Learning Progressions and Concept Inventories: Assessment of Student Understanding of Acid/base Concepts. A.J. Wolfson, C.R. Reed, A.M. Mercer, S. Sutheimer, J.E. Lewis, Wellesley Col., Univ. of South Florida and Green Mountain Col.

**B326 663.12** Blended Instruction in Introduction to Biochemistry Class. T. Nicholas, N. Reddy, R. Srinivasan, Case Western Reserve Univ.

**B327 663.13** Use of a Research-Based Framework to Guide Instructional Design and Assessment Related to Noncovalent Interactions in a Biochemical Context. J. Loertscher, S. Feola, P. Lemons, J. Lewis, A. Mercer, V. Minderhout, Seattle Univ., Univ. of South Florida and Univ. of Georgia

**B328 663.14** Development of a Computational-Based Medicinal Chemistry Course at a Small, Primarily Undergraduate Institution. B.L. Hall, Grand View Univ.

**B329 663.15** Teaching the Use of Automated Pipettes to Undergrads Through Direct Visualization of Data: A Quantitative Chemical Analysis Lab Focusing on Technique, Skill, and Accuracy in Solution Chemistry. A.G. Sostarecz, B.E. Sturgeon, S.P. Distin, Monmouth Col.

**B330 663.16** Assessment of Visual Literacy Skill Gains in Graduate Biochemistry. K. Procko, D.M. Dean, Univ. of Saint Joseph

**B331 663.17** Using an Innovative Approach to Teach Students How to Communicate About Scientific Topics to Non-Scientists. M.A. Rowland-Goldsmith, M. Bisoffi, Chapman Univ.

**B332 663.18** Deep Reading of the Literature and the Biosynthesis of Nucleotides. E. Anderson, Univ. of Saint Joseph

**B333 663.19** Scaffolding Soft-Skill Development Into a Two-Semester Undergraduate Laboratory Course. D.P. Grille, T.M. Weaver, Univ. of Wisconsin-La Crosse

**B334 663.2** Evaluation of Real-Time PCR Primer Sets for the Diagnosis of Huanlongbing (HLB) in Citrus Root Tissue. C.J. Avila, J.-W. Park, M. Kunta, South Texas Col., Texas A&M Univ. and Kingsville Citrus Ctr.

**B335 663.21** Implementing the Cure: Combining Wet-Lab Protein Biochemistry with Computational Analysis to Provide Gains in Student Learning in the Biochemistry Teaching Lab. M. Pikaart, Hope Col.

**B336 663.22** Cell-Free Protein Synthesis: A Platform Technology for Education. W.Y. Kao, N.E. Gregorio, J.P. Oza, California Polytechnic State Univ.

**B337 663.23** Developing a Physical Model of O-GlcNAc Transferase (Ogt) in Complex with Tab I. V. Perez Hernandez, S. Nguyen, A. Chhabra, E.F. Schmitt Lavin, Nova Southeastern Univ.

**B338 663.24** Are You a Scientist? Exploring Science Identity in a Structural Biology Outreach Program. B.N. Wyatt, M. Schram, M. St. Maurice, Marquette Univ.

**B339 663.25** Visualizing Biochemistry: The Implementation of Biomolecular Visualization and Structure-Function Conceptual Game-Based Card Sorting Activities. A. Bates, C.R. Terrell, Univ. of Minnesota

**B340 663.26** Authentic Research in the Teaching Laboratory at a Large University: Comparative Studies of Malate Dehydrogenase Isoforms in Trypanosomes. A. Springer, Univ. of Massachusetts Amherst

**B341 663.27** Improving Student/Faculty Engagement: Impact of End of Lecture Classroom Surveys on Student Evaluations and Motivation. K.R. Miller, Univ. of Mount Union

**B342 663.28** Design and Construction of a Structural Model of the Bifunctional Glmu Protein in Complex with N-Acetyl-D-Glucosamine-1-Phosphate and Uridine-Diphosphate-N-Acetylglucosamine. M.R. Tollar, T.D. Edwards, N. Nguyen, W.R. P. Novak, Wabash Col.

**B343 663.29** Measurement of Enterococci and Other Water Quality Parameters as an Active Learning Module in Introductory Life Science Courses. C.D. Spence, A. Leri, Marymount Manhattan Col.

**B344 663.3** Moving a Biochem Majors Lab Course into Discovery Based Research. C.K. Park, Univ. of Arizona

**B345 663.31** Using a Laboratory Teaching Module to Train Undergraduate Students in Cell Culture Based Research. J.L. Furnari, A. Aguanno, Marymount Manhattan Col.

**B346 663.32** 3D Model of Human O-N-Acetylglucosamine Hydrolase. D.C. Hawkins, I. Tasie, A. Gayle, R. Billings, A. Harris, C. Jones, M. Van Stry, Lane Col.

**B347 663.33** Are Lab Courses Worth the Investment: Factors That Affect Student Success in a Biochemistry Lab Course. O.M. Hart, Purdue Univ.

**B348 663.34** Developing Professionalism in Research Through Journals Clubs. G. Mendez, F. Prokopczuk, California State Univ. and Northridge

**B349 663.35** Functional Characterization of 2qrq Based on Structural and Enzymatic Analysis. A. Pyne, S. Sheikh, M.E. D'Ausilio, The Pingry Sch.

**B350 663.36** Measuring Cognitive Load and Impact of Modeling Activities in Undergraduate Biochemistry. C.R. Terrell, L. Aleuy, J. Calvert, A. Hampton-Ashford, X. Prat-Resina, A. Randolph, K. Cortes, Univ. of Minnesota and Kennesaw State Univ.

**B351 663.37** O-GlcNAcylase (Oga): A Sugar Cleaver. C. Gallen, A. Rios-Rosales, I.G. Jacus, A. Cobb, Z. Nashman, R. Grant, A.C. Shor, Saint Leo Univ.

**B352 663.38** Use of a Synchronous Collaborative Learning Environment in a Face-to-Face Molecular Biology Classroom. C. Clauson-Kozina, G. Kunzweiler, Saint Leo Univ.

**B353 663.39** Falcon Biomanufacturing: Teaching the Core Concepts of Biochemistry and Molecular Biology Through the Model of a Biotechnology Company. M. Koci, R. Ali, B. Boller, North Carolina State Univ. and Bertie Early Col. High Sch.

**B354 663.4** In Silico Research as an Active Learning Platform in a Molecular Biology Course. E. Beaulieu, Univ. of Ottawa, Canada

**B355 663.41** Teaching Biochemistry Based Research Driven Course Through Active Learning to Accelerate Student's Adaptation to College Study and Promote Freshman Research. S. Ray, J. Fresquez, R. Esper, J. Clark, G. Corral, C. Xiao, The Univ. of Texas at El Paso

**B356 663.42** Three Web Tools to Aid Genetics Instruction Developed by Students in a Unique Undergraduate Bioinformatics Projects Course. R. Rutherford, N. Garcia, R. Charczenko, S. Levy, J. Bjelajac, Seattle Univ.

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## Apoptosis and Cell Death

**B357 664.1** Zylamend Induces Apoptosis in Pancreatic Cancer Cells via Modulation of Endoplasmic Reticulum Stress and Autophagy. D. Puckett, D. Alani, S. Chahed, V. Frankel, J. Whelan, A. Bettaieb, Univ. of Tennessee and Knoxville

**B358 664.2** Induction of Immunogenic Cell Death of Cancer Cell by Using Chemical Detergent Treatment and Its Activation of Immune System. T. Kimura, N. Nakamura, Y. Hashimoto, A. Kishida, Tokyo Med. and Dental Univ., Japan and Shibaura Inst. of Technology, Japan

**B359 664.3** Perturbation of Homocysteine Homeostasis Leads to Cellular Epigenetic Modification and Endothelial Injury in Acute Myocardial Infarction. C. Chang, T.-C. Yang, S.-C. Lu, M.-S. Lee, P.-Y. Chang, Taipei American Sch., Taiwan and Nat'l. Taiwan Univ. Col. of Med., Taiwan

**B360 664.4** Induction of Cancer Stem Cell Sphere Explosion by Uv Irradiation/Cold Shock or Therapeutic Chemicals: Detection of Autofluorescence Using Visible Wavelength. N-S. Chang, K.T. Chang, P-C. Ho, *Nat'l. Cheng Kung Univ. Col. of Med., Taiwan*

**B361 664.5** Primary Acute Lymphoblastic Leukemia Cells Strictly Require Interphase Microtubules for Survival During G1 Phase Advance. M. Delgado, T.C. Chambers, *Univ. of Arkansas for Med. Sciences*

**B362 664.6** Curcumin Induces Apoptosis via the Caspase-8 Activated Extrinsic Pathway in MDA-MB-231 Breast Cancer Cells. M. Ali, R. Smiley, *William Beaumont Army Med. Ctr.*

**B363 664.7** Apoptotic Effect of Methylglyoxal in Pancreatic RINm5F Cells; Reversal by InGaP-P. K. Gonzales, J. Su, S. Mungre, *Northeastern Illinois Univ.*

**B364 664.8** Curcumin Reverses Methylglyoxal Induced Apoptosis in RINm5F Cells and PC12 Cells in Hyperglycemic Conditions. S.F. Patangia, S. Mungre, *Northeastern Illinois Univ.*

**B365 664.9** Follicular Fluid Promotes Anoikis Resistance in tp53 Mutated Fallopian Tube Epithelial Cells in Ovarian Cancer. W.R. Flanagan, A. Fleszar, P. Kreeger, *Univ. of Wisconsin-Madison*

**B366 664.1** Epigallocatechin-3-Gallate Suppressed Methylglyoxal-Induced Apoptosis in SH-SY5Y Cells. A-C. Cheng, M-F. Lee, T-L. Huang, Y-S. Liou, M-H. Pan, *Chang Jung Christian Univ., Taiwan and Nat'l. Taiwan Univ., Taiwan*

**B367 664.11** Use of Cellular and Molecular Based Assays to Evaluate the Toxicity of Manganese (II) to RTgill-W1 Cell Cultures. T.J. Whitlow, M. Armstead, *Marshall Univ.*

**B368 664.12** Gene Regulatory Pathways That Modulate Response to Dexamethasone and Daunorubicin in Breast Cancer Cell Lines. A.R. Macias, R. Medh, *California State Univ., Northridge*

**B369 664.13** Effects of Paclitaxel on Glucocorticoid-Induced Apoptosis of Human Leukemic CEM Cells. I. Aranas, R. Medh, *California State Univ., Northridge*

**B370 664.14** Mutant Huntingtin Affects P53 Function in a Context-Dependent Manner in a Cell Model of Huntington's Disease. G.A. Ellison, L.S. Garcia, J.C. Cornett, *Lee Univ.*

**B371 664.15** Kaposi's Sarcoma-Associated Herpesvirus (KSHV) Role in Preventing Apoptosis: The vBcl-2 and Human Bik Association. C. Yeager, J. Canfield, *Simmons Col.*

**B372 664.16** Investigation of the Role of *abl-1* in the Apoptosis Pathways in *c. Elegans*. M.R. Vos, R.L. Bennett, *Juniata Col.*

**B373 664.17** Determination of Apoptotic Stage of Hcc827 Lung Adenocarcinoma Cell Line, Following Calcium Sulfide Nanoclusters Treatment. V.J. Rodriguez Irizarry, G. Trossi Torres, K. Muñoz Forti, A. Ruiz Rivera, M.E. Castro, E.B. Suarez Martínez, *Univ. of Puerto Rico, Puerto Rico, Pontifical Catholic Univ. of Puerto Rico, Puerto Rico and Ponce Health Sciences Univ. Res. Inst., Puerto Rico*

**B374 664.18** Exploration of the Mechanistic Role of Cyclophilin D in the Mitochondria. O.S. Adegbite, Y.I. Adegbite, C. David, L-Y. Lian, *Univ. of Liverpool, United Kingdom*

**B375 664.19** Posttranslational Arginylation Enzyme Ate1 Regulates Cell Death Through a Mitochondrial-Dependent Pathway. F. Zhang, A. Kumar, M. Birnbaum, B. Moorthy, *Univ. of Miami*

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### Cell Stress and Xenobiotics

**B376 665.1** Modulation of Phosphatidylinositol Homolog (Pten) in Cancer Cells and Lipid Peroxides in Peripheral Blood Mononuclear Cells (Pbmcs) Following Exposure to Flavonoids. A.S. Garcia, E. Myles, W.Y. Boadi, *Tennessee State Univ.*

**B377 665.2** Evaluation of Triclosan Exposures on Interleukin 6 and Interleukin 1 Beta Secretion from Human Immune Cells. W.J. Wilburn, D. Brooks, M. Whalen, *Tennessee State Univ.*

**B378 665.3** Investigating the Role of Trehalose Metabolism in Resistance to Abiotic Stress in the Filamentous Fungus *Fusarium Verticillioides*. N.R. Oberlie, S.D. McMillan, D.W. Brown, K.L. McQuade, *Bradley Univ., United States Dept. of Agriculture, Agricultural Res. Service and Nat'l. Ctr. for Agricult.*

**B379 665.4** Thermal Manipulation During Broiler Chicken Embryogenesis Increases the Basal mRNA Levels of Antioxidant Factors and Alters Their Production Dynamics During Thermal Stress. M.B. Al-Zghoul, *Jordan Univ. of Science and Technology, Jordan*

**B380 665.5** Inductively Coupled Plasma Optical Emission Spectrometry (Icp-Oes) Analysis of Lead Bioaccumulation in *Chlamydomonas Reinhardtii* and the Role of Cia7 Gene. E.U. Vazquez Cano, V. Reyes, R.A. Ynalvez, *Texas A&M InterNat'l. Univ.*

**B381 665.6** Functional Characterization of the Novel Gene Cia7 from *Chlamydomonas Reinhardtii*. H.G. Gonzalez Cantu, R.A. Ynalvez, *Texas A&M InterNat'l. Univ.*

**B382 665.7** Hepatotoxicity of Ochratoxin A, Benzo [A] Pyrene and Acrylamide, Alone and in Combination with Hepg2 Cell Through Phase I and Phase II Pathway. H.S. Shin, M.C. Pyo, H-S. Bae, J.M. Bae, K-W. Lee, *Korea Univ., Republic of Korea and Korean Nat'l. Food Cluster FOODPOLIS, Republic of Korea*

**B383 665.8** Effects of Individual and Combined Toxicity of Ochratoxin A, Acrylamide on Oxidative Stress in Human Proximal Tubule Hk-2 Cells. M. C. Pyo, H. S. Shin, H-S. Lee, J. M. Bae, K-W. Lee, *Korea Univ., Republic of Korea and Korean Nat'l. Food Cluster FOODPOLIS, Republic of Korea*

**B384 665.9** The Brominated Flame Retardant Tetrabromobisphenol-A Increases DNA Methylation at the Thy1 (Cd90) Locus to Promote Adipogenesis. E. Flores, *Univ. of Rochester*

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### Signaling Integration and Cross-regulation

**B385 666.1** Limd2 Is an Intracellular Activator of Integrin Linked Kinase (Ilk) Activity and Gsk-3/akt/ $\beta$ -Catenin Signaling. S. Dedhar, S. Awrey, *Univ. of British Columbia, Canada and BC Cancer Res. Centre, Canada*

**B386 666.2** Regulation of Notch Signaling by Src Kinase. B. LaFoya, J.A. Munroe, A.R. Albig, *Boise State Univ.*

**B387 666.3** Opening the Doors for Nuclear GLN3 Entry in *Saccharomyces Cerevisiae*. J.J. Tate, R. Rai, T.G. Cooper, *Univ. of Tennessee HSC*

**B388 666.4** I4-3-3 Protein-Dependent GATA Transcription Factor Control in *Saccharomyces Cerevisiae*. J.J. Tate, R. Rai, D. Buford, T.G. Cooper, *Univ. of Tennessee HSC*

**B389 666.5** Intersection of Cell Death Machinery: Akt Meets Vrk2 at the Lysosome to Control Induction of Autophagy. M. Noguchi, F. Suizu, N. Hirata, *Inst. for Genetic Med. and Hokkaido Univ., Japan*

**B390 666.6** Exploring the Structural Basis of the Cross-Talk Between GlcNAcylation and Phosphorylation Using Physical Models. S. Shania, M. Schwabe, N. M. Garcia, H. Sonnenschein, E. Bell, *Univ. of San Diego*

**B391 666.7** Determining the Role, Expression and Interactions of Fap-1 in *S. Cerevisiae*, Cultivated in a Nitrogen-Limited Media. A.C. Rodriguez Velez, E. Pares Matos, *Univ. of Puerto Rico at Mayaguez*

**B392 666.8** Exploration of Novel Markers of Posterior Capsular Opacification. E. Jackson, M. Shihan, Y. Wang, M. Duncan, *Univ. of Delaware*

**B393 666.9** Coordinated Cross-Talk Between Calcium and Camp in Regulating Pulsatile Insulin Secretion: A Novel Role for the Unique Inhibitory G-Protein,  $G_{\alpha z}$ , in Regulating  $\beta$ -Cell Function. M. Schaid, J. Harington, H. Wienkes, M. Merrins, M. Kimple, *Univ. of Wisconsin-Madison*

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## Cell Motility and Migration

**B394 667.1** Effects of Resveratrol in Cell Migration and Invasion by Studying the Cxcr4-Cxcl12 Axis in Breast Cancer Cell Lines. G.A. Arroyo-Martinez, M. Figueroa, K. Muñoz-Forti, G. Trossi, J. Robles, A.A. Maldonado, E. Suarez, A. Ruiz, *Univ. of Puerto Rico at Ponce, Pontifical Catholic Univ. of Puerto Rico and Univ. of Puerto Rico at Mayagüez*

**B395 667.2** Hct116 Colorectal Cancer Cells Secrete Chemokines Which Induce the Chemotaxis and Intracellular Calcium Mobilization of Nk92 Cells. Influence of Dimethyl Fumarate and Monomethyl Fumarate. A. Maghazachi, N. Elemam, Z. Al-Jaderi, *Col. of Med. and Univ. of Sharjah, United Arab Emirates*

**B396 667.3** The Biological Impact of the Golgi Membrane Protein Tmem165 for Breast Cancer. P. Murali, *Univ. of Arkansas for Med. Sciences and Emory Univ.*

**B397 667.4** Defining the Role of Protein Interactions at VRAMP Structures in Directional Migration. S. Miller, B. Murillo, M.K. Connacher, N. Ahn, *Univ. of Colorado Boulder*

**B398 667.5** Erlotinib Inhibits Epithelial Mesenchymal Transition of Cigarette Smoke-Exposed Human Retinal Pigment Epithelial Cells Through Regulation of the FAK-Syk/Src Pathway. G-B. Park, D. Kim, *Kosin Univ. Col. of Med., Republic of Korea and Inje Univ. Col. of Med., Republic of Korea*

**B399 667.6** The Non-Canonical Wnt/Calcium Pathway Regulates the Migration and Function of Primary Mesenchyme Cells. A. George, T. McCann, J. Song, *Univ. of Delaware*

**B400 667.7** Ky Hemp-Induced Modulation of Ovarian Cancer Cell Metastasis. S. Biela, A. Wang, W.K. Sumanasekera, *Sullivan Univ. Col. of Pharmacy*

**B401 667.8** Glioblastoma Cells Respond Directionally to L1cam Protein Ectodomain. A.I. Stubbolo, K. Plusch, C. Bernheimer, D.S. Galileo, *Univ. of Delaware*

**B402 667.9** Crosstalk Between Tetraspanin-Interacting Protein Igsf3 and Sphingolipid Metabolism. K. Schweitzer, K. Ni, I. Petrache, *Nat'l. Jewish Health*

**B403 667.1** Resveratrol and Cxcr4 Mediated Migration of Breast Cancer Cell Lines. K. Cruz, L. Padilla, G. Trossi, K. Muñoz, J. Robles, G. Arroyo, E. Suarez, A. Ruiz, *Univ. of Puerto Rico at Ponce, Pontifical Catholic Univ. of Puerto Rico and Univ. of Puerto Rico at Mayagüez*

**B404 667.11** Microtubule Involvement with the VRAMP Structure, a Mechanism for Rear Membrane Retraction in Mammalian Cells. B. Murillo, S. Miller, M.K. Connacher, N. Ahn, *Univ. of Colorado Boulder*

**B405 667.12** Sike Affects Processes Involving Cytoskeletal Rearrangement. R. McCool, C.A. Quintero, J.E. Bell, J.K. Bell, *Univ. of San Diego*

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## Tumor Suppressors and Tumor Drivers

**B406 668.1** Astrocyte-Derived Ccl20 Reinforces Hif-1-Mediated Hypoxic Responses in Glioblastoma by Stimulating the Ccr6-Nf-Kb Signaling Pathway. P. Jin, J.-W. Park, *Col. of Med. and Seoul Nat'l. Univ., Republic of Korea*

**B407 668.2** Validation of *arid1a* as a Mammary Tumor Driver in Mice. M. Winters, N. Kartha, J. Schimenti, *Cornell Univ.*

**B408 668.3** Investigation of Pkhd11's Localization and Potential Function as a Tumor Suppressor. X. Shi, L. Yoo, *Denison Univ.*

**B409 668.4** Med28 Modulates Transcription Factor FOXM1-Associated Migration and Invasion in Human Non-Small Cell Lung Cancer (NSCLC) Cells. N.-T. Hsieh, C.-Y. Huang, C.-C. Li, I.-C. Wang, M.-F. Lee, *China Med. Univ., Taiwan, Nat'l. Tsing Hua Univ., Taiwan and Chang Jung Christian Univ., Taiwan*

**B410 668.5** Ese-1 Represses Formation of Tumor in Vivo and Growth, Invasion and Migration of Human Nsclc Cells in Vitro. Z. Lou, B.-S. Lee, T. Ha, Y. Xu, H.-J. Kim, C.-H. Kim, S.-H. Lee, *Univ. of Maryland and Ajou Univ., Republic of Korea*

**B411 668.6** Dysregulation of the Tumor Suppressor Tip60 and Atm Signaling Paradigm by the HIV Transactivator of Transcription. A. Simenauer, A. Cota-Gomez, *Univ. of Colorado Anschutz Med. Campus*

**B412 668.7** Cloning the P53 DNA Binding Domain. J. Jones, V. Faustino, L.A. Nogaj, *Mount Saint Mary's Univ.*

**B413 668.8** Prostate Specific Membrane Antigen Promotes Prostate Tumor Progression and Survival by Conferring Resistance to Hypoxic Stress. A. Ponce, A. Lewis, D. Anukam, S. Abdulsalam, L. Shapiro, L. Caromile, *The Univ. of Texas at El Paso, Univ. of Connecticut Health Ctr. and Univ. of Saint Joseph*

**B414 668.9** Ww Domain-Containing Oxidoreductase Induces Cellular Senescence in Response to Replication Stress. H.-C. Cheng, L.-J. Hsu, *Nat'l. Cheng Kung Univ., Taiwan*

**B415 668.1** Egcg Promotes Cell Growth Inhibition and Reprograms Mesenchymal-Epithelial Transition by Restoring Ccn5/Wisp2 in Triple Negative Breast Cancer Cells in Vitro and in Vivo. A. Ghosh, A. Das, S. Banerjee, M. Baltezer, L. Zeng, S.K. Banerjee, *Kansas City VA Med. Ctr., Univ. of Kansas and South West Univ., People's Republic of China*

**B416 668.11** Converting the Tumor Suppressor Function of Wwox to Tumor Promoting by Serine 14 Phosphorylation. P.-C. Ho, H.-L. Kuo, N.-S. Chang, *Nat'l. Cheng Kung Univ., Taiwan*

**B417 668.12** Tcea3 Impairs Cancer Growth and Functions as a Tumor Suppressor. N. Kazim, J. Davie, *Southern Illinois Univ. Sch. of Med.*

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## Microbe-Host Interactions

**B418 669.1** Clinical Case Report of Suspected Fulminating Leptospirosis in a 4-Months Old Caucasian Dog and Molecular Detection of Pathogenic *Leptospira* in Canine in Northwestern Nigeria: Public Health Significance and Ramifications. N.N. Pilau, M. Matthias, Y. Sani, A. DanMaigoro, *Usman Danfodiyo Univ., Sokoto, Nigeria, UCSD*

**B419 669.2** Modeling Phage Survival in Limiting Bacterial Growth. N. Tomassi, *San Diego State Univ.*

**B420 669.3** An Integrated System Approach Identified the Human Proteasome as a Conserved Critical Machinery for Zikv and Denv Replication. G. Song, E. Lee, J. Pan, M. Xu, H.-S. Rho, Y. Cheng, N. Whitt, S. Yang, J. Kouznetsova, C. Klumpp-Thomas, S.G. Michael, A. Simeonov, W. Huang, M. Xia, R. Huang, M. Lal-Nag, H. Zhu, H. Tang, W. Zheng, J. Qian, H. Song, *John Hopkins Univ. Sch. of Med., Florida State Univ. and Nat'l. Inst. of Health*

**B421 669.4** High-Throughput Screening Assays to Identify Inhibitors of the Enterohemorrhagic *E. Coli* NleB1 Virulence Factor. P. Hardwidge, *Kansas State Univ.*

**B422 669.5** Investigating Impact of Mycobacterial Physiology on Mycobacteriophage Life Cycles by Mass Spectrometry. Y. Li, K.L. Clase, *Purdue Univ.*

**B423 669.6** 25-Hydroxycholesterol Inhibits Viral Infection in a Liver X Receptor Dependent Manner. Z. Wei, *Nankai Univ., People's Republic of China*

**B424 669.7** HIV-1 Infected NSG-BLT Humanized Mice as a Model for HIV-Associated Lung Complications. J.L. Geohring, A. Cota-Gomez, *Univ. of Colorado Anschutz Med. Campus*

**B425 669.8** Bacteria, Brains, and Behavior: Gut Microbes and Their Effects on Regulation of Gene Expression in the Brain. C. Horstman, L. Devries, M. Sonnenburg, C. Carlson, *Trinity Christian Col.*

**B426 669.9** Novel Use of a Cell-Penetrating Peptide-Adaptor System to Investigate Activity of Type III Secretion Effector Proteins in Mammalian Cells. S.M. Young, R.L. Dickson, J.L. McMurtry, *Kennesaw State Univ.*

**B427 669.1** Identification and Characterization of Protein Changes in the *Drosophila* Brain Upon *Wolbachia* Infection. A. Lucas, H. Adams, N. Winegardner, W. Sullivan, J.S. Minden, *Carnegie Mellon Univ., Univ. of California, Santa Cruz*

**B428 669.11** Serotonin Promotes Enterohemorrhagic *Escherichia Coli* Pathogenesis Through Altered Ai-2 Production by Gut Microbiota. R. Menon, S. Jani, R. Riordan, A. Jayaraman, *Texas A&M Univ.*

## Diabetes, Obesity and Metabolic Syndrome

**B429 669.12** *C. Elegans* Avoids Toxin-Producing *Streptomyces*. L.C. Miller Conrad, A. Tran, A. Tang, C.T. O'Loughlin, A. Balistreri, E. Chang, D. Coto Villa, J. Li, A. Varshney, S. Matthews, M. Bremmer, M.K. VanHoven, San Jose State Univ., Univ. of California, San Francisco

**B430 669.13** Structural Basis of Heme Acquisition from Human Hemoglobin by the Gram-Positive Pathogen *Streptococcus Pyogenes*. R. Macdonald, M. Phillips, D. Cascio, M. Collazo, R.T. Clubb, Univ. of California, Los Angeles

**B431 669.14** Correlation of Oyster Disease with *Vibrio Parahaemolyticus* Accumulation in Oyster Tissue. K. Jackson, A. Scro, R. Smolowitz, Roger Williams Univ.

**B432 669.15** Characterizing Nucleic Acid Association with Bacterial Membrane Vesicles and Their Transfer to Host Cells. B.V. Rodriguez, M.J. Kuehn, Duke Univ.

**B433 669.16** The Surreptitious Survival of the Opportunistic Pathogen *Staphylococcus Lugdunensis* Within Macrophages as an Immune Evasion Strategy. D. Heinrichs, R. Flannagan, D. Watson, Univ. of Western Ontario, Canada

**B434 669.17** *Pasteurella Multocida* PfhB2 Toxin Displays a Novel Unconventional Cysteine Protease Fold. S. Mattoo, S. Kumar, Purdue Univ.

**B435 669.18** Recombinant Ms2 L Is Biologically Functional. A.L. Hoffer, K.J. Streff, A.J. Piefer, Hartwick Col.

**B436 669.19** Variation in Predation Phenotype Among Predatory Bacteria *Bdellovibrio*. K. Martinez, M. Oser, L.E. Williams, Providence Col.

**B437 669.2** Phenotypic Variation and Genomics of *Bdellovibrio* Predatory Bacteria from the Built Environment. L. Zappia, J. Mangiamela, L.E. Williams, Providence Col.

**B438 669.21** Ni(II) Uptake by Yersiniabactin, a Metallophore Produced by Uropathogenic *e. Coli*. A.E. Robinson, J.E. Lowe, E-I. Koh, J.P. Henderson, Washington Univ. Sch. of Med. in St. Louis

**B439 669.22** *Legionella* Effector Ravd Binds Host Phosphoinositide-3-Phosphate and Contributes to Lysosomal Avoidance. R. Neunuebel, Univ. of Delaware

**B440 669.23** Metabolic Reprogramming of Macrophages Exposed to *Pseudomonas Aeruginosa* Biofilm. M. C.B. Ammons, A. Fuchs, V. Copie, Idaho Veterans Res. and Education Foundation and Montana State Univ.

**B441 670.1** Loss of Gα13 Exercise-Mimetically Reprograms Skeletal Muscle Through Rock2. S. G. Kim, J. H. Koo, Seoul Nat'l. Univ., Republic of Korea

**B442 670.2** Effects of Capsicoside G on Lipolysis and Fatty Acid Oxidation in 3T3-L1 Adipocytes. J. Lee, Y. Kim, J. Sung, Chungbuk Nat'l. Univ., Republic of Korea, Kyung Sung Univ., Republic of Korea and Univ. of Florida

**B443 670.3** Activator Protein 1 and Caspase 8 Mediate Palmitate-Induced Cardiomyocyte Apoptosis. C. Oh, J. Lee, K. D'Souza, R. Migrino, K. Thornburg, P. Reaven, Phoenix VA Health Care System, Carl T. Hayden Med. Res. Foundation and Oregon Health & Science Univ.

**B444 670.4** Great, Green, Glowing Worms: The Insulin/igf-I Signaling Pathway Regulates *C. Elegans* Feeding Behavior. N. Gousy, P. Quadros-Mennella, Bay Path Univ.

**B445 670.5** Selenium and Exendin-4 Combination Is a Promising Therapeutic Approach for Diabetes Mellitus. M.E. Moustafa, L. Abou Assi, S. Abou Najem, M. Merii, R. Hasan, G. Barakat, H.R. Dhaini, M. El-Sabban, Alexandria Univ., Egypt, Beirut Arab Univ., Lebanon and American Univ. of Beirut, Lebanon

**B446 670.6** Fibroblast Growth Factor 21 Promotes Glucose Uptake in Adult Skeletal Muscle Fibers from Mice. G. Rosales-Soto, A. Díaz-Vegas, P. Llanos, E. Jaimovich, A. Contreras-Ferrat, Ctr. for Molecular Studies of the Cell, Facultad de Medicina, Universidad de Chile, Chile, Inst. for Res. in Dental Science, Facultad de Odontología, Universidad de Chile, Chile, Inst. of BioMed. Sciences Facultad de Medicina, Universidad de Chile, Chile, Exercise Physiology Lab., Facultad de Medicina and Universidad Finis Terrae, Chile

**B447 670.7** Role of Oxidative Stress and Inflammatory Cytokines in Type 2 Diabetes Mellitus Patients with and Without Small Intestinal Bacterial Overgrowth. S. Rana, A. Malik, R.K. Morya, S.K. Sharma, S.K. Bhadada, Post Graduate Inst. of Med. Education and Res., India

**B448 670.8** Link Between Food Intake and the Expression of O-Linked N-Acetylglucosamine Transferase (Ogt) in Channel Catfish. O. Abernathy, M. Dougherty, D. Kostner, E. Nevarez, A. Schmidtberger, R. Spainhour, Y. Kobayashi, Fort Hays State Univ.

**B449 670.9** Serum Leptin Is Associated with Fasting Plasma Glucose and Serum Insulin Levels Independent of BMI in Haitian Americans with Type 2 Diabetes. J. Antwi, W. Proulx, S. Sullivan, R. Lavin, M. Bellavia, State Univ. of New York Col. at Oneonta

**B450 670.1** Differential Roles of Cide Proteins in Promoting Lipid Droplet Fusion and Growth in Subpopulations of Hepatocytes. L. Zhou, Tsing Hua Univ., People's Republic of China

**B451 670.11** Cd8<sup>+</sup> T Cells Regulate Liver Injury in Obesity-Related Nonalcoholic Fatty Liver Disease. A. Kennedy, C. Pacheco, M.K. Washington, A. Hasty, Vanderbilt Univ., Seattle Children's Hosp. and Vanderbilt Univ. Med. Ctr.

**B452 670.12** Impact of Short- and Long-Term Weight Loss on the Inflammatory Profile of Metabolically Healthy and Unhealthy Obese Patients. M. Clark, F. Barrenäs, M. Rajan, M. Sotak, V. Wallenius, E. Borgeson, Inst. of Med., Univ. of Gothenburg, Sweden, Dept. of Cell and Molecular Biology, Uppsala Univ., Sweden, Inst. of Clinical Sciences and Univ. of Gothenburg, Sweden

**B453 670.13** Reverse Correlation Between Body Mass Index and Post-Transplant Hypertension by a New Diagnostic Criteria. E. Tantisattamo, P. Vutthikraivit, P. Ratanasrimetha, Univ. of California, Irvine Sch. of Med., Phramongkutklo Col. of Med., Mahidol Univ., Thailand and Texas Tech Univ. Health Sciences Ctr.

**B454 670.14** Janus-Faced Role of Atp1b4 Gene Co-Option in Mammalian Evolution. N. Modyanov, Univ. of Toledo Col. of Med. and Life Sciences

**B455 670.15** HUNK, a Serine/threonine Protein Kinase, Regulates Insulin Secretion from Pancreatic Islets. A. Lakshmanan, M. Rabaglia, R. Das, K. Schueler, D. Stapleton, S. Simonett, M. Keller, A. Attie, Univ. of Wisconsin-Madison

**B456 670.16** Attenuation of FFA-Induced Skeletal Muscle Insulin Resistance by Rosemary Extract. F. Vlavecski, E. Tsiani, Brock Univ., Canada

**B457 670.17** SIRT3 Activation Inhibits Development of Diabetic Kidney Disease. K. Myakala, X. Wang, P. Lewien, D. Wang, Y. Luo, M. Herman-Edelstein, A.Z. Rosenberg, M. Levi, Georgetown Univ., Univ. of Colorado, Tel Aviv Univ., Israel and Johns Hopkins Univ.

**B458 670.18** Inhibitory Effect of Diosmetin on Lipolysis and Inflammation in Adipocyte-Macrophage Co-Culture Model. H. Lee, J. Sung, J. Lee, Chungbuk Nat'l. Univ., Republic of Korea and Univ. of Florida

**B459 670.19** Protective Effects of Perilla Seed Meal on tert-Butyl Hydroperoxide Induced Oxidative Damage in HepG2 Cells. U. Sim, I-H. Kim, J. Lee, Chungbuk Nat'l. Univ., Republic of Korea and Korea Univ., Republic of Korea

**B460 670.2** Physiological Regulation of Brown Adipose Tissue with Obesity by Mild-Cold Exposure, a β3-Agonist and Exercise Training at Thermoneutrality. P. Aldiss, J. Lewis, F. Ebling, H. Budge, M. Symonds, The Univ. of Nottingham, United Kingdom

**B461 670.21** Dendropanax Improve Kidney Function by Inhibiting Oxidative Stress via Upregulating SIRT-1 in Streptozotocin-induced Diabetic Rats. R. Sachan, Sungkyun Kwan Univ., Korea and Democratic People's Republic of China

**B462 670.22** The Expression Differences of Cyclin Dependent Kinase Inhibitors in Aged and Young Pancreatic Beta Cells. T.J. Aitken, S.G. Grover, P.L. Booren, J.S. Tessem, *Brigham Young Univ.*

**B463 670.23** Sirtuin 4 Controls Leucine Metabolism and Insulin Secretion by Reversing Effects of Reactive Metabolites. F.K. Huynh, K.A. Anderson, J.D. Stuart, Z. Lin, M.D. Hirschey, *Duke Univ. Med. Ctr.*

**B464 670.24** Assessing Glucocorticoid Receptor Polymorphisms in Obese Populations. C-L. Bonnet, A. Dowdy, B.D. Cohen, *Union Col.*

**B465 670.25** Fecal Fermentation Products of Common Bean-Derived Fiber Inhibit C/EBP $\alpha$  and PPAR $\gamma$  Expression and Lipid Accumulation but Stimulate PPAR $\delta$  and UCP2 Expression in the Adipogenesis of 3T3-L1 Cells. H-Y. Lu, W-H. Cheng, *Mississippi State Univ.*

**B466 670.26** Hepatocyte Specific Shp1 Deletion and Low Dose Rosiglitazone Treatment Act in Concert to Improve Liver Glucose Homeostasis in Diet-Induced Obese Mice. J. G. Bernardo Leandro, M-P. Forest, M-H. Lavallée-Bourget, L. Gomez, R. Moreira, V. Houde, M. Schwab, K. Bellmann, Y. Deshaies, M. Sola-Penna, A. Marette, *Universidade Federal do Rio de Janeiro, Brazil and Laval Univ., Canada*

**B467 670.27** Distinct Roles of Dietary Fat and Sugar in the Development of Obesity, Insulin Resistance, Atherosclerosis and Cardiac Dysfunction in Ldl Receptor Knockout Mice. L.R. Perazza, N. Daniel, M. J. Dubois, G. Pilon, P. Mitchell, K. Le Quang, D. Lachance, E. Plante, T. Varin, R. Bouchareb, P. Mathieu, Y. Pouliot, S. Gauthier, D. Roy, C. Asselin, M. Blais, M. Lessard, A. Marette, *Laval Univ., Canada and Sherbrooke Univ., Canada*

**B468 670.28** Central Adiposity Is a Strong Predictor of Non-Alcoholic Fatty Liver Disease (Nafld) in South Asian Women. K. Albracht-Schulte, S. Rosairo, L. Ramalingam, S. Wijetunge, R. M. C. J. Ratnayake, H. M. S. R. Kotakadeniya, J.A. Dawson, N. Kalupahana, N. Moustaid-Moussa, *Texas Tech Univ. and Univ. of Peradeniya, Sri Lanka*

**B469 670.29** Antioxidant Effect of *Justicia Spicigera* in Liver from Diabetic Rats. M. Murillo-Villicaña, J.A. Martínez-Mora, R. Noriega-Cisneros, S. Manzo-Avalos, R. Salgado-Garciglia, C. Cortés-Rojas, R. Montoya-Pérez, A. Saavedra-Molina, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico*

**B470 670.3** Restoration of Hepatic Tdg51 Expression Improves Insulin Signaling and Reduces Weight Gain in Mouse Models of Non-Alcoholic Fatty Liver Disease. T.R. Yousof, C. Bouchard, M. Alb, E. Lynn, S. Lhoták, H. Jiang, H. Li, K.N. Maclean, N. Cherrington, J. Krepinsky, G. Steinberg, R.C. Austin, *McMaster Univ., Canada, St. Joseph's Health Care, Canada, Univ. of Colorado and Univ. of Arizona*

**B471 670.31** Antioxidant and Hypoglycemic Effects of *Justicia Spicigera* in Kidney from Diabetic Rats. J.A. Martínez-Mora, M. Murillo-Villicaña, J.A. Mejía-Barajas, R. Salgado-Garciglia, D.J. Peña-Montes, R. Montoya-Pérez, R. Noriega-Cisneros, A. Saavedra-Molina, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico*

**B472 670.32** Examination of Piccolo Splice Variants in Regulated Insulin Secretion from Pancreatic  $\beta$ -Cells. V.G. Quintana, R. Salamon, S.D. Fenster, *Fort Lewis Col.*

**B473 670.33** Synergistic Anti-Adipogenic Effect of 3,3'-Diindolylmethane and Capsaicin in 3T3-L1 Adipocytes. J. Lee, S-H. Lee, *Univ. of Maryland*

**B474 670.34** Tissue-Specific Genetic Targeting of iNOS Reveals an Unexpected Role of Adipocyte iNOS in the Development of Insulin Resistance, Dyslipidemia and Altered Energy Metabolism in Diet-Induced Obese Mice. V. Rodrigues Vilela, G. Lachance, R.T. Nachbar, C. Centano-Baez, K. Bellmann, A. Marette, *Laval Univ., Canada*

**B475 670.35** How Do You Measure Up? BMI Versus Waist to Height Ratio. K. Smolinski, T. Ward, B. Hall, S.E. Hurst, *Univ. of Arizona, Lincoln Memorial Univ. and Boston Univ.*

**B476 670.36** Anti-Photoaging Activity of Sinapic Acid in Uvb-Irradiated Human Skin Fibroblasts Through Increasing the Expression of PPAR $\delta$ . D. Yeon, Y. Kim, J. Lee, *Chungbuk Nat'l. Univ., Republic of Korea and Kyungung Univ., Republic of Korea*

**B477 670.37** Idh2 Deficiency Aggravates Fructose-Induced Nafld by Activating Inflammatory Signaling in Female Mice. K.E. Beane, A.M. Montalbano, J. H. Pan, B.C. Kong, J. K. Kim, *Univ. of Arkansas*

**B478 670.38** Enhancement of Biological Activity Through Conversion of Rutin to Quercetin Using Acid Treatment. J. Yang, J. Lee, *Chungbuk Nat'l. Univ., Republic of Korea*

**B479 670.39** Betulinic Acid Alleviates Body Fat Accumulation and Dyslipidemia by Inhibiting *de Novo* Lipogenesis and Stimulating Lipolysis *in Vivo*. H. Kim, Y. Ryu, G-W. Go, *Kookmin Univ., Republic of Korea*

**B480 670.4** Antihyperglycemic, Nephroprotective and Antioxidative Effects of White and Yellow *Discorea Domentorum* Yam Based-Diet in Alloxan-Induced Diabetic Rats. O.B. Ajayi, *Ekiti State Univ., Nigeria*

**B481 670.41** *In Vivo* Effects of Adipose-Specific Deletion of Jagged 1 in Mice Administered a High Fat Diet. A. Langlais, *Univ. of New England*

**B482 670.42** Anti-Adipogenic and Anti-Diabetic Activities of Patchouli Alcohol. J. Lee, S-H. Lee, *Univ. of Maryland*

**B483 670.43** Targeting and Tracing Cardiac Myocytes with *fgf1* Expression in F1a-Creer<sup>2</sup> Transgenic Mice. I-M. Chiu, Y-F. Chung, M-S. Chen, S-T. Jiang, Y-C. Hsu, *Nat'l. Health Res. Inst.s, Taiwan, Nat'l. Applied Res. Lab., Taiwan and Mackay Med. Col., Taiwan*

**B484 670.44** Enhanced Mitochondrial DNA Repair Confers Protection Against Obesity and Metabolic Syndrome by Altering White Adipose Tissue Energetics. S.S.B. Komakula, J. Tumova, H. Ye, V. Vartanian, R.S. Lloyd, T. Akal, H. Sampath, *Rutgers Univ. and Oregon Health & Science Univ.*

**B485 670.45** Regulation of Hepatic Glucose and Lipid Metabolism by the Acetyl-CoA Hydrolase Acyl-CoA Thioesterase 12 (Acot12). M. Acuna-Aravena, D.E. Cohen, *Weill Cornell Med. and Cornell Univ.*

**B486 670.46** Intestinal Sodium Glucose Transporter 3 (Sgt3) Is Downregulated in Experimental Models of Obesity and in Morbidly Obese Patients. M. Sotak, A. Casselbrant, M. Strömstedt, E. Rath, D. Adingupu, D. Karlsson, M. Fritsch Fredin, P. Ergang, T. Zietek, J. Pácha, E. Börgeson, P.B. L. Hansen, A. Ericsson, A. Björnson Granqvist, V. Wallenius, L. Fändriks, R.J. Unwin, *AstraZeneca, Sweden, Univ. of Gothenburg, Sweden, Technische Universität München, Germany, Inst. of Physiology and Czech Academy of Sciences, Czech Republic*

**B487 670.47** Identifying New Regulators of Insulin-Stimulated Glut4 Exocytosis. L. Crisman, D. Gulbranson, J. Miller, H. Yu, J. Shen, *Univ. of Colorado Boulder*

**B488 670.48** Obesity-Related Stressors Repress Gonadotropin-Releasing Hormone Gene Expression via the Transcription Factor C-Fos. W. Moseman, A. Bertsch, H.E. Walsh, *Wabash Col.*

**B489 670.49** Changes in Spexin Levels Are Influenced by the Presence or Absence of Gestational Diabetes in Pregnant Subjects. N. Aldaghri, *King Saud Univ., Saudi Arabia*

**B490 670.5** The Effects of Renin-Angiotensin System on Endoplasmic Reticulum Stress in Pancreatic Beta Cells. B. Sopontammarak, K. Menikdiwela, L. Ramalingam, N. Moustaid-Moussa, *Texas Tech Univ.*

**B491 670.51** Syntaxin 4 (Stx4)- More Than Just a Snare Protein: Elevating Stx4 Content in Skeletal Muscle to Prevent Insulin Resistance/Pre-Diabetes. K.E. Merz, E. Olson, J. Zhang, R. Veluthakal, E. Oh, A. Hamilton, J. Huss, D.C. Thurmond, *City of Hope*

**B492 670.52** Regulation of Insulin Sensitivity by Skeletal Muscle Specific Modulation of P21-Activated Kinase 1 (Pak1). V.A. Salunkhe, R. Tunduguru, M. Ahn, E.M. Olson, R. Veluthakal, J. Zhang, A. Aslamy, D.C. Thurmond, *City of Hope*

**B493 670.53** Mechanisms Linking the Adipocyte Renin Angiotensin System, Inflammation and Endoplasmic Reticulum (Er) Stress. K.R. Menikdiwela, L. Ramalingam, N.S. Kalupahana, S. Scoggin, N. Moustaid-Moussa, *Texas Tech Univ. and Univ. of Peradeniya, Sri Lanka*

**B494 670.54** Regulation of Hif1 Alpha in Hyperoxia and Hyperglycaemia. B.U. Iwuagwu, *Robert Gordon Univ., United Kingdom*

**B495 670.55** The Protein Phosphatase Phlpp1 Suppresses Insulin Signaling and Inflammation in Mouse Model. G. Lorden, S. Skovso, M. Riopel, K. Cohen-Katsenelson, J.D. Johnson, A.C. Newton, UCSD and Univ. of British Columbia, Canada

**B496 670.56** Hepatocyte Early Growth Response 1 (Egr1) Regulates Lipid Metabolism in Nonalcoholic Fatty Liver Disease. N.S. Magee, Y. Zhang, Univ. of Kansas Med. Ctr.

**B497 670.57** Molecular Characterisation of Small Molecule Agonists and Internalisation of Glp-Ir. V. Kanamarlapudi, Swansea Univ., United Kingdom

**B498 670.58** Perturbation of Foxo1 Expression Levels in 3t3-L1 Pre-Adipocytes Using Cinnamon Extract. A. Dingess, K. Bova, A. Aulthouse, A. Stockert, Ohio Northern Univ.

**B499 670.59** Does This Gene Make Me Look Fat? Atp10a Expression in Targeted Human Populations. S.E. Hurst, T. Ward, B. Hall, K. Smolinski, Univ. of Arizona, Lincoln Memorial Univ. and Boston Univ.

**B500 670.6** Comparison of Antioxidant and Anti-Inflammatory Activity of Quercetin, Isoquercitrin and Rutin Against Alcohol-Induced Liver Injury in Hepg2 Cells. J. Song, Y. Kim, J. Lee, Chungbuk Nat'l. Univ., Republic of Korea and Kyung Sung Univ., Republic of Korea

**B501 670.61** The Effects of Physical Activity and Omega 3 Fatty Acids on Glucose Levels and Neuropathy Symptoms in Hispanic Diabetics in the "En BalancéPlus" Study. D. Patel, Loma Linda Univ.

**B502 670.62** Analyses of Body Adiposity Index, Waist to Size Ratio, Waist to Hip Ratio, and Heart Score as a Better Clinical Evaluation in Postmenopause. G. Lugo-Martinez, C.A. Jiménez-Zamarripa, M.E. Ocharan-Hernández, C.C. Calzada-Mendoza, Instituto Politécnico Nacional-Escuela Superior de Medicina, Mexico and Instituto Politécnico Nacional, Mexico

**B503 670.63** Understanding the Role of Pancreatic  $\beta$ -Cell Cd36 in the Development of Type 2 Diabetes. E.A. Kolar, E. Gajrawala, J. Deeney, J. Hamilton, Boston Univ. Sch. of Med. and Mary Baldwin Univ.

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### Lipids and Membranes

**B504 671.1** Sphingomyelin-Cholesterol Complexes in Plasma Membranes. S. Endapally, D. Frias, D. Tomchick, A. Radhakrishnan, The Univ. of Texas Southwestern Med. Ctr.

**B505 671.2** Regulating the Activity of Akt by Inhibiting the Pleckstrin Homology Domain-Ptdins(3,4,5)<sub>P</sub>3 Interaction Using Flavonoids. Y. Kang, W. Lee, Y. Yoon, Konkuk Univ., Republic of Korea

**B506 671.3** A Quercetin Derivative as a Selective Inhibitor of 12-Lipoxygenase Activity in Human Platelets. L.H. Boudreau, M.S. Doucet, J.-L. Jougleux, S.J. Poirier, M. Cormier, J.L. Léger, M.E. Surette, N. Pichaud, M. Touaibia, Université de Moncton, Canada

**B507 671.4** Probing the Two Orientations of Pal in Vesiculating e. Coli. M. Vacca, Rochester Inst. of Technology

**B508 671.5** Bacterial-Triggered Triglyceride Synthesis in *Coccomyxa Subellipsoidea* Coincident with Bioremediation of EPA-Regulated Municipal Wastewater. T. Nicodemus, P. Black, Univ. of Nebraska-Lincoln

**B509 671.6** Crystallographic and Enzyme Kinetic Analyses of the Human Inositol Polyphosphate Multikinase (IPMK). R. Blind, Vanderbilt Univ.

**B510 671.7** A New Model for Understanding the Egg Cell Surface at Fertilization. E. Wiseman, D. Carroll, Florida Inst. of Technology

**B511 671.8** Designing a Model Skin Cell Membrane to Investigate the Extent of Nanoparticle Absorption. B. Yoder, A.G. Sostarecz, Monmouth Col.

**B512 671.9** Repurposing Fendiline as a Novel Anti-Viral Therapeutic. M.L. Husby, R. Stahelin, Purdue Univ.

**B513 671.1** Investigating the Elongated Cell Phenotype of *Escherichia Coli* Overexpressing the Lysophospholipase Pldb. G.S. Georgiou, T.A. Garrett, Vassar Col.

**B514 671.11** Mechanism of Membrane Biogenesis. A.R. Naik, E.R. Kuhn, K.T. Lewis, K.M. Kokotovich, K. Maddipati, X. Chen, H. Horber, D.J. Taatjes, J.J. Potoff, B.P. Jena, Wayne State Univ., Univ. of Bristol, United Kingdom and Univ. of Vermont

## 672

### Lipid Metabolizing Enzymes

**B515 672.1** Convenient and Sensitive Assay for the Screening of Lysosomal Storage Disorders. E. Stokes, City Col. of New York

**B516 672.2** Novel Crystal Structure of Calcium Independent Phospholipase Ipla2 $\beta$ : Mechanism of Activity Regulation and Membrane Localization. S. Korolev, O. Koroleva, K. Malley, Saint Louis Univ. Sch. of Med.

**B517 672.3** The Lipid A 1-Phosphatase, Lpxe Play Multiple Roles in Bacteria Envelope Biogenesis. J. An, J. Zhao, D. Hwang, R.A. Gillespie, E. G. Yang, P. Zhou, H. S. Chung, Korea Inst. of Science and Technology, Republic of Korea and Duke Univ. Med. Ctr.

**B518 672.4** Polyunsaturated Fatty Acid Desaturase-Mediated Nad<sup>+</sup> Recycling Permits Ongoing Glycolysis and Cell Proliferation. W. Kim, A. Deik, J.C. Florez, S.B.R. Jacobs, C.B. Clish, E.P. Rhee, Massachusetts General Hosp. and Broad Inst. of Harvard and MIT

**B519 672.5** Thioesterase Superfamily Member 2 (Them2) Regulates Fatty Acid Partitioning Between Oxidative and Secretory Pathways in the Liver. M. Alves-Bezerra, Y. Li, D.E. Cohen, Weill Cornell Med. and Cornell Univ.

**B520 672.6** Structure and Function of Lipins: Key Enzymes in Triglyceride Metabolism. M. Airola, Stony Brook Univ.

**B521 672.7** Human CoQ10a and CoQ10b Are Distinct Putative Start Domain Proteins That Restore Q Biosynthesis and Function in Yeast. H.S. Tsui, N.V. Pham, L. Fernández-Del-Río, B.R. Amer, M.C. Bradley, R.T. Clubb, C.F. Clarke, Univ. of California, Los Angeles

**B522 672.8** Identification of the Major Diacylglycerol Acyltransferase mRNA in Eukaryotic Cells. H. Cao, United States Dept. of Agriculture and Agricultural Res. Service

**B523 672.9** Identifying Genes Required for the Use of *p*-Coumarate in Coenzyme Q Biosynthesis in *Saccharomyces Cerevisiae*. A. Nag, Y. Li, G. Basset, O. Kwon, C. Clarke, Univ. of California, Los Angeles and Univ. of Florida

**B524 672.1** The Glycerophosphocholine Acyltransferase, Gpc1, Impacts PC Remodeling and Stationary Phase Cell Viability in *Saccharomyces Cerevisiae*. S.P. Anaokar, R. Kodali, B. Jonik, A. Nikiforov, I. Lager, S. Stymne, A. ( de Kroon, J. Patton-Vogt, Duquesne Univ., Swedish Univ. of Agricultural Sciences, Sweden and Univ. of Utrecht, Netherlands

## 673

### Glycans and Glycobiology (II)

**B525 673.1** Patient-Specific Mechanisms of Lafora Disease Mutations in the Human Glycogen Phosphatase. M. Gentry, M.K. Brewer, M. Raththagala, J. Wayne, C. Vander Kooi, Univ. of Kentucky Col. of Med. and Skidmore Col.

**B526 673.2** Expanded Exploration of Fut8 Substrate Specificity Towards a Variety of Its Less Preferred Substrates. R. Zhang, Q. Yang, L.-X. Wang, Univ. of Maryland Col. Park

**B527 673.3** Rapid Evolution of Bacterial Exotoxin B Subunits Independent of a Subunits: Sialic Acid Binding Preferences Correlate with Host Range and Intrinsic Toxicity. N. Khan, A. Verhagen, Z. Khedri, S. Diaz, N. Varki, A. Paton, T. Beddoe, J. Paton, A. Varki, UCSD, Univ. of Adelaide, Australia and La Trobe Univ., Australia

**B528 673.4** Beyond ERAD: N-Glycanase Will Bring You to Tears. M. Tambe, B. Ng, H. Freeze, Sanford Burnham Prebys Med. Discovery Inst.

**B529 673.5** The Heparan Sulfate Degrading Enzyme Heparanase Is Up-Regulated by the EWS-FLI1 Fusion Protein in Ewing Sarcoma. S. Gaskin, La Trobe Inst. for Molecular Science and La Trobe Univ., Australia

**B530 673.6** Anti-Oxidative Activity of Db Mice Treated with Glycosaminoglycan of Cricket, *Gryllus bimaculatus*. M. Y. Ahn, J. S. Hwang, *Nat'l. Academy of Agricultural Science and RDA, Republic of Korea*

**B531 673.7** Anti-Aging Effect and Gene Expression Profiling of Bumblebee (*Bombus Terrestris*) Queen Glycosaminoglycan in Aged Rats. M. Y. Ahn, H. J. Yun, J. S. Hwang, *Nat'l. Academy of Agricultural Science and RDA, Republic of Korea*

**B532 673.8** Mapping Specific Cellular Sialoglycans Using Glycosyltransferases. Z.L. Wu, A.D. Person, B. Burroughs, R. Singh, T. Tatge, T. Manning, G. Wu, R. Sackstein, V. Kalabokis, *Bio-Techne and Brigham & Women's Hosp. and Harvard Med. Sch.*

**B533 673.9** Elevated O-GlcnaC Exacerbates Pro-Inflammatory Cytokine Secretion from Cd4<sup>+</sup> T Cells. M. Machacek, J. Li, T. Li, T. Lydic, C. Slawson, P. Fields, *Univ. of Kansas Med. Ctr. and Michigan State Univ.*

**B534 673.1** Foxp3 O-GlcnaCylation Controls Regulatory T Cell Homeostasis and Suppressive Function. B. Liu, O.S. Barrero, C. Sahu, L.E. Ball, K.A. Hogquist, H-B. Ruan, *Univ. of Minnesota and Med. Univ. of South Carolina*

**B535 673.11** System Metaglycomes: Mapping Dynamic Cell Surface N-Glycome, O-Glycome and Glycolipidome by Mass Spectrometry. M. Barboza, M. Wong, J. Luke, Z. Cheng, G. Xu, M. Gareau, H. Raybould, C.B. Lebrilla, *UC, Davis*

**B536 673.12** Polymorphic Pseudogenization of Siglec12 in Humans: Relationship to Late Stage Cancer Progression. S.S. Siddiqui, R. Do, W. Zhang, H-J. Lenz, T. Johnson-Pais, R. Leach, G. Fraser, C. Wang, N. Varki, A. Varki, *UCSD, Univ. of Southern California, The Univ. of Texas HSC and Loma Linda Univ.*

**B537 673.13** Mucus-Inspired Low-Fouling Barriers Based on Self-Assembled Glycopeptide Nanofibers. G. Hudalla, A. Restuccia, *Univ. of Florida*

**B538 673.14** Roles of Glycosaminoglycans in the Ang/Tie Signaling Axis. M.E. Griffin, G.M. Miller, A.W. Sorum, L.C. Hsieh-Wilson, *California Inst. of Technology*

**B539 673.15** Lysozyme Over-Expression During Nerve Injury Excites Aδ and C Fibres in a Fibre Specific Manner to Incite Neuropathic Pain. A. Surolia, S. Yadav, *Indian Inst. of Science, India*

**B540 673.16** Harnessing Glycocalyx Interactions to Modulate Differentiation and Development. M.L. Huang, A.L. Michalak, E.M. Tota, R.A. Smith, G.W. Triege, K. Godula, *UCSD*

**B541 673.17** Glycomics Studies on Nematodes Elucidate Conserved Functional Epitopes and Biosynthetic Pathways. S. Yan, J. Vanbeselaere, C. Jin, A. Joachim, K. Paschinger, I.B. H. Wilson, *Inst. of Parasitology, Univ. of Veterinary Med. Vienna, Austria, Dept. für Chemie, Universität für Bodenkultur Wien, Austria, Institutionen für Biomedizin und Göteborgs universitet, Sweden*

**B542 673.18** Isolation, Characterization and Biochemical Effects of the Different Polysaccharides from *Trametes Versicolor*. S.L. Badshah, A. Muhammad, *Islamia Col. and Peshawar, Pakistan*

**B543 673.19** High-Level Expression System for Production of Recombinant HIV-1 Gp120 with Elevated Content of High-Mannose Glycans. B. Knoppova, Q. Wei, A. Hargett, K. Regal, R. Brown, S. Hall, Z. Moldoveanu, J. Yother, R. Patel, M. Raska, M. Renfrow, J. Novak, *Univ. of Alabama at Birmingham*

**B544 673.2** Sustained O-GlcnaCylation Amplifies Erk Signaling. G.K. Cork, E. P. Tan, J. Thompson, S. McGreal, M. Machecek, J. Kelsh, K. Peterson, U. Apte, C. Slawson, *Washburn Univ., Sanford Burnham Inst. and Univ. of Kansas Med. Sch.*

**B545 673.21** Engineering Synthetic Glycan Co-Receptors Into the Glycocalyx of Muscle Cells to Control Early Stages of Neuromuscular Junction Development. K. Godula, *UCSD*

**B546 673.22** Encoding and Estimating the Remarkable Diversity of Possible Sialyltrisaccharides in Nature. A. Sasmal, Z. Khedri, S. Diaz, N. Lewis, A. Varki, *UCSD*

**B547 673.23** Combining Mass Spectrometry and Glycan Array Data to Explore Invertebrate Glycomes. I. Wilson, B. Eckmair, A. Hykollari, S. Yan, J. Vanbeselaere, K. Paschinger, *Universität für Bodenkultur Wien, Austria*

**B548 673.24** Design of Novel Lectins by Computer-Guided Directed Evolution. P. Sharma, I.C. Kazan, S.B. Ozkan, G. Ghirlanda, *Arizona State Univ.*

**B549 673.25** Comprehensive High Throughput One-Pot Analysis of Glycoproteins Through Tool for Rapid Analysis of Glycopeptide by Permethyl-ation (Trap) Method. A. Shajahan, N.T. Supekar, C. Heiss, P. Azadi, *The Univ. of Georgia*

**B550 673.26** Analyzing the Stabilizing Effects of O-Fucose Glycans on Thrombospondin Type I Repeats. S.J. Berardinelli, R.S. Haltiwanger, *Univ. of Georgia*

**B551 673.27** Probing the Role of Peptidoglycan Metabolism in *Helicobacter Pylori*'s Helical Shape. J.A. Taylor, B.P. Bratton, K.E. DeMeester, H. Liang, H.M. Jacobs, E. Kuru, Y.V. Brun, M.S. VanNieuwenhze, W. Vollmer, J.W. Shaevitz, C.L. Grimes, N.R. Salama, *Univ. of Washington, Princeton Univ., Univ. of Delaware, Indiana Univ., Newcastle Univ., United Kingdom and Fred Hutchinson Cancer Res. Ctr.*

**B552 673.28** The Development and Characterization of Antibodies to Site-Specific O-GlcnaC Modified Histones for Epigenetic Research. R. Orlando, M. Popov, G. Gutierrez-Sanchez, *GlycoScientific*

**B553 673.29** Understanding Heparin/Heparan Sulfate Biosynthetic Pathway in the Generation of Antithrombin Binding Motif Using Combinatorial Virtual Library Screening (Cvls). Y. Bi, N.V. Sankaranarayanan, B. Kuberan, U.R. Desai, *Univ. of Utah and Virginia Commonwealth Univ.*

**B554 673.3** Use of Bioorthogonal N<sup>2</sup>acetyllysine (SNAC) Analogues and Peptidoglycan O<sup>2</sup>acetyltransferase B (PatB) to Label Peptidoglycan. K.M. Lazor, Y. Wang, K.E. DeMeester, H. Liang, T.K. Heiss, C.L. Grimes, *Univ. of Delaware*

**B555 673.31** Fractones: Proteoglycan Matrix for Growth Factor Activity in Health and Disease. H. Davis, F. Mercier, *Univ. of Hawaii*

**B556 673.32** Structural and Functional Characterization of Ulvan Degrading Polysaccharide Lyase Enzymes. T. Ulaganathan, W. Helbert, E. Banin, M. Cygler, *Univ. of Saskatchewan, Canada, Recherches sur les Macromolécules Végétales, France and Bar-Ilan Univ., Israel*

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## Society for Experimental Biology and Medicine (SEBM) Interdisciplinary Research

**B557 674.1** The Effect of Hyperuricemia on Cardiac Function, Nuclear Factor-κB in Myocardial Tissue, Mn Superoxide Dismutase Activity in Mitochondria of Rats. C. Hao, H. Duan, J. Zhang, S. Wang, X. Liu, S. Cao, X. Zheng, L. Gao, L. Pan, C. Liu, *The First Clinical Col. of Shanxi Med. Univ., People's Republic of China and The Public Health Col. of Shanxi Med. Univ., People's Republic of China*

**B558 674.2** Stainless Imaging to Identify the Biochemical Changes During Bleomycin-Induced Pulmonary Fibrosis by Fourier Transform Infrared Technique. V. Suryadevara, S.S. Nazeer, H. Sreedhar, V. Natarajan, M. Walsh, *Univ. of Illinois at Chicago*

**B559 674.3** RCSB Protein Data Bank: Sustaining a Living Digital Data Resource That Enables Break-throughs in Scientific Research and Biomedical Education. S.K. Burley, H.M. Berman, C. Christie, J.M. Duarte, Z. Feng, J. Westbrook, J. Young, C. Zardecki, *RCSB Protein Data Bank*

**B560 674.4** Quantification of Total HIV-1 DNA in Seminal and Blood Samples in Men Under Cart. R.J. Torres-Strubbe, L.J. Godoy-Muñoz, L.J. Figueroa, M.J. Hill, *Univ. of Puerto Rico at Ponce, Puerto Rico and Ponce Health Sciences Univ., Puerto Rico*

**B561 674.5** The Impact of the Affordable Care Act on Rural Healthcare. T.L. Boyd-Seng, G.P. Einstein, O.L. Tulp, *Univ. of Science, Arts and Technology Montserrat, Montserrat and Einstein Med. Inst.*

**B562 674.6** Epigenetic and Transcriptomic Signatures of Human Slow- and Fast-Twitch Muscle Fibers Across the Lifespan. G. Begue, U. Raue, B. Jemio, K. Minchev, T. Trappe, S. Trappe, *Ball State Univ.*

**B563 674.7** Physical Resilience as a Determinant of Healthy Aging. A.K. Brown, D.L. Mazula, B. Zhang, C.M. Roos, T.A. White, R.A. Miller, J.D. Miller, N.K. LeBrasseur, *Mayo Clinic and Univ. of Michigan*

**B564 674.8** A High-Throughput Targeted Bisulfite Sequencing-Based Analysis for Epigenetic Age Quantification and Monitoring. Y. C. Chew, W. Guo, X. Yang, M. Jin, K. Booher, S. Horvath, X. Y. Jia, Zymo Res. Corporation, Univ. of California and Los Angeles

**B565 674.9** Trappc6a $\delta$ , Tiaf1 and Sh3glb2 Are Initiators for Amyloid Beta Plaque Formation and Tau Aggregation in Vivo. N.-S. Chang, J.-Y. Chang, Y.-V. Yap, C.-I. Sze, Nat'l. Cheng Kung Univ. Col. of Med., Taiwan

**B566 674.1** The Effects of the Senescent Preadipocyte Secretome on Skeletal Muscle Cells. T.A. White, D. Mazula, M. Schafer, N. Giorgadze, Z. Aversa, J.L. Kirkland, N.K. LeBrasseur, Mayo Clinic

**B567 674.11** Activation of Sirt1 and Namp1 Preserves Late-in-Life Fertility of Female *Nothobranchius Guentheri*. K. Petersen Shay, N.O. Thomas, Y. Lee, A.C. Drake, L.G. Ferguson, P. Chappell, Oregon State Univ.

**B568 674.12** The Role of Sphingomyelin Synthase on the Healthspan of Organisms via Modulating Neurotransmission. S.S.H. Chuh, C. Wentz, J. Chan, D. Dries, Juniata Col.

**B569 674.13** Protective Effect of Curcumin Against Nitrosamine-Induced Gastric Cancer in Rats. M.I. Waly, S. Al-Hinai, I. Al-Bulushi, M.S. Rahman, Sultan Qaboos Univ., Oman

**B570 674.14** An Investigation into the Antibacterial Properties of Citrus and Plant Essential Oils. A. Axup, A.G. Sostarecz, Monmouth Col.

**B571 674.15** Autoimmune Nature of Type I Diabetes Mellitus. D.L. Janvier, O.L. Tulp, G.P. Einstein, Univ. of Science, Arts and Technology Montserrat, Montserrat and Einstein Med. Inst.

**B572 674.16** Using *m. Marinum* T6pp as a Model for *m. Tuberculosis* Inhibitor Design. G.M. Ferri, C.M. Harvey, D. Globisch, K. Janda, K.N. Allen, Boston Univ., The Skaggs Inst. for Chemical Biology, The Worm Inst. of Res. and Med. and Scripps Res.

**B573 674.17** Cold Active  $\beta$ -1,3-Glucanase from Antarctic Yeast, *Glaciozyma Antarctica* Pi12. S. Mohammadi, N. M. Mahadi, A. M. Abdul Murad, Nat'l. Univ. of Malaysia, Malaysia and Malaysia Genome Inst., Malaysia

**B574 674.18** Crystallization and Study of Dihydrofolate Reductases (DHFR) in *Wuchereria Bancrofti* and *Brugia Malayi*. K.R. Lange, C. Janson, N. Goodey, Montclair State Univ.

**B575 674.19** Investigation of the Structure and Function of Phosphoserine Phosphatases. M.C. Brousseau, L.C. Ray, K.N. Allen, Boston Univ. and Boston Univ. Sch. of Med.

**B576 674.2** Resolving the Structure of Metallo-chaperone Aztd. S. Fullam, D. Neupane, E. Yuki, New Mexico State Univ.

**B577 674.21** Structure/Function Analysis of a Novel Myeloperoxidase Inhibitor from *Staphylococcus Delphini*. N.T. Ploscariu, N. de Jong, J. van Strijp, B.V. Geisbrecht, Kansas State Univ. and Univ. Med. Ctr. Utrecht, Netherlands

**B578 674.22** Dissecting Difference in Heterologous Protein Secretion Titer by Type III Secretion System Between Strains of *Salmonella Enterica*. H. T. Wong, D. Tullman-Ercek, Univ. of California, Berkeley and Northwestern Univ.

**B579 674.23** Engineering Riboswitch-Based Whole Cell Biosensors in *Escherichia Coli*. M. Zhao, K. Page, J. Liu, Pomona Col.

**B580 674.24** Mechanogenetics for the Remote and Non-Invasive Control of Cancer Immunotherapy. Y. Pan, S. Yoon, J. Sun, Z. Huang, C. Lee, M. Allen, Y. Wu, Y.-J. Chang, M. Sadelain, K.K. Shung, S. Chien, Y. Wang, UCSD, Univ. of Southern California and Memorial Sloan Kettering Cancer Ctr.

**B581 674.25** Hybrid Biosensing Cellulose-Based Scaffolds for Imaging-Assisted Tissue Engineering. N. O'Donnell, I.A. Okkelman, S.A. Ruane, P. Timashev, T.I. Gromovkykh, R.I. Dmitriev, Univ. Col. Cork, Ireland and I.M. Sechenov First Moscow State Univ., Russian Federation

**B582 674.26** Gene Expression in a Synthetic Eukaryotic Cell-Mimic. H. Niederholtmeyer, N. Devaraj, UCSD

**B583 674.27** Preclinical Evaluation of a New Ros1 Inhibitor to Overcome Resistance to Egfr Therapy in Glioblastoma. H.M. Aljohani, E. M. Bahassi, Univ. of Cincinnati Med. Ctr.

# TUESDAY APRIL 24

## ASBMB Poster Sessions

### EXHIBIT HALL

Poster set up by: 9:00 AM Poster display: 9:00 AM–4:00 PM Poster removal: 4:00–6:00 PM

#### Author at boards:

# ending in 0, 3 or 6: 12:15–1:00 PM # ending in 1, 4, 7 or 9: 12:45–1:30 PM # ending in 2, 5, or 8: 1:30–2:15 PM

BOARD NUMBER	SESSION TITLE	BOARD NUMBER	SESSION TITLE
1 – 17	DNA Repair	276 – 288	Nanotechnology
18 – 41	Epigenetic Modifications of DNA and RNA	289 – 304	Proteomics
42 – 53	Transcriptomics	305 – 314	Systems Biology and Regulatory Networks
54 – 61	RNA: Processing, Transport, and Regulatory Mechanisms	315 – 376	Cancer Signaling and Therapeutics
62 – 74	RNA Binding Proteins	377 – 405	Neurobiology and Neuronal Signaling
75 – 96	Protein Modifications	406 – 418	Immunity
97 – 155	Protein Structure and Biophysics	419 – 431	Targeted Therapies and New Targets for Drug Discovery
156 – 167	Protein Misfolding and Aggregation	394 – 441	Parasite-Host Interactions
168 – 181	Intrinsically Disordered Proteins and Amyloids	442 – 455	Antibiotic Resistance
182 – 217	Enzyme Chemistry and Catalysis	456 – 472	Antibacterial Targets and Drug Discovery
118 – 230	Enzyme Inhibitors and Drug Design	473 – 492	Metabolism and Cancer
231 – 254	Protein Engineering and Design	493 – 538	Metabolism and Nutrition
255 – 262	Protein-Small Molecule Interactions	539 – 546	Lipids, Inflammation and Eicosanoids
263 – 275	Bioanalytical and Biophysical Methods	547 – 557	Lipid Storage and Trafficking
		558 – 572	Membrane Proteins and Lipid Interactions

## DNA Repair

**B1 786.1** A New Pathway of Transcription-Coupled Repair. K. Myka, R. Washburn, K. Kusters, M. Gottesman, *Columbia Univ., Dept. of Microbiology and Immunology and Columbia Univ.*

**B2 786.2** Regulation of Brca1 by Sirt2. E. Minten, H. Zhang, C. Li, P. Head, D. Yu, *Emory Univ.*

**B3 786.3** Investigating the Link Between Mutations in Muts DNA Repair Protein and Lynch Cancer Syndrome. E. Kessler, J. Liu, H. Awad, M. Hingorani, *Wesleyan Univ.*

**B4 786.4** Generating and Characterizing Resistance to Ionizing Radiation in Experimentally Evolved Populations of *Escherichia Coli*. J.D. Trimarco, S.T. Bruckbauer, M.M. Cox, *Univ. of Wisconsin–Madison*

**B5 786.5** Mass Spectrometry-Based Proteomics Reveals a Regulatory Role for Dyrk1a in DNA Damage Repair. S.E. Guard, Z. Poss, C. Ebmeier, W. Old, *Univ. of Colorado Boulder*

**B6 786.6** The Effect of Hobo Transposon Excision on DNA Repair in *Drosophila Melanogaster*. A. Miller, K. Saville, *Albion Col.*

**B7 786.7** Role of Spontaneous DNA Damage and Single-Stranded DNA in Generation of Enlarged G<sub>2</sub> Phase Cells in Rad52 Mutants of *Saccharomyces Cerevisiae*. C.J. England, M.F. Weis, L.K. Lewis, *Texas State Univ.*

**B8 786.8** *Escherichia Coli* Rara Commits Cells to Post-Replication Repair Pathways by Facilitating Replisome Skipping. K. Gopal, T. Stanage, M.M. Cox, *Univ. of Wisconsin–Madison*

**B9 786.9** Structural and Cellular Mechanisms of DNA Replication Restart in *Escherichia Coli*. A. McKenzie, S. Wessel, J. Keck, *Univ. of Wisconsin–Madison*

**B10 786.1** Cdc48a Aaa-ATPase and Its Association with Ubiquitin-Like Samp1 and DNA Repair in Archaea. S. Dantuluri, S. Margulies, N. Hepowit, T. Allers, J. Maupin-Furlow, *Univ. of Florida and Univ. of Nottingham, United Kingdom*

**B11 786.11** Variations in Nuclear Localization Strategies Among Pol X Family Enzymes. T. Kirby, L.C. Pedersen, S.A. Gabel, N.R. Gassman, R.E. London, *Nat'l. Inst. of Environmental Health Sciences, Nat'l. Inst. of Health and Univ. of South Alabama Mitchell Cancer Inst.*

**B12 786.12** Defects in Base Excision Repair and Homologous Recombination, but Not Nucleotide Excision Repair, Lead to Altered Cell Cycle Phase Distributions in *Saccharomyces Cerevisiae*. A. Oviedo, S. Valencia, T.R. DeForge, O.R. Fitzgerald, L.K. Lewis, *Texas State Univ.*

**B13 786.13** The Uracil-DNA Glycosylase Homolog Udgx from *m. Smegmatis* as a Potential Platform for *in Vitro* Protein Evolution. S.A. Thomas, C. Noren, *Suffolk Univ. and New England BioLabs Inc.*

**B14 786.14** Heterochromatin Proteins Influence the Choice of DNA Repair in Euchromatin Domains. S. Forsburg, A. Jensen, C. Jones, T-T. Li, J-P. Yuan, *Univ. of Southern California*

**B15 786.15** Roles of Cell Cycle Phases and DNA End Structures in Determining Requirements for the Yku, Mrx and Ligase IV Complexes in Nonhomologous End-Joining Repair of Plasmid DNA. N.D. Rodriguez, L.K. Lewis, *Texas State Univ.*

**B16 786.16** Catalytic Functions of Recq1 Helicase Are Important in Defying Genomic Stress and Maintaining Cell Proliferation. S. Parvathaneni, X. Lu, S. Sharma, *Howard Univ.*

**B17 386.1** Rad5 Prevents the Accumulation of ssDNA Gaps at Stressed DNA Replication Forks. G.W. Brown, D.W. Gallo, S. Kim, Z. Zhang, D. Branzel, *Univ. of Toronto, Canada and Int'l Fnds. of Med., Italy*

## Epigenetic Modifications of DNA and RNA

**B18 787.1** An Epigenetic Switch on Arid1a Chromatin Remodeler by Alpha-Oxoglutarate Activates the Antiproliferative Axis in Interstitial Cystitis. J. Kim, M. Shahid, A. Yeon, R.J. Park, *Cedars-Sinai Med. Ctr.*

**B19 787.2** Dnmt3a Mutations in Aml Patients Cause Loss and Gain of Function and Differential Regulation by Protein Partners. J.E. Sandoval, *Univ. of California and Santa Barbara*

**B20 787.3** Role of RNA N6-Methyladenosine Methylation in Endothelial Response to Flow. C.S. Chien, H-Y. Song, S-H. Chiou, S. Chien, *Inst. of Engineering in Med. and Inst. of Basic Res., Taiwan*

**B21 787.4** DNA Methylation of Multiple Genes Involved in Bladder Cancer Among Saudi Population. A. Siddiqui, A. Yaqinuddin, F. A. Alshehri, *Col. of Med. and Alfaisal Univ., Saudi Arabia*

**B22 787.5** Epigenetic Modifications in the Rat Neonate Olfactory Bulb and Anterior Piriform Cortex Associated with Olfactory and Tactile Experiences. J. McAnulty, L. Webb, T. Doherty, T. Roth, *Univ. of Delaware*

**B23 787.6** M<sup>fa</sup> Facilitates Hippocampus-Dependent Learning and Memory Through Ythdf1. H. Shi, X. Zhang, Z. Lu, Y. Liu, Y-L. Weng, Z. Lu, J. Li, P. Hao, Y. Zhang, J. Delgado, M. Patel, X. Cao, X. Huang, Y. Su, G-L. Ming, X. Zhuang, H. Song, C. He, T. Zhou, *The Univ. of Chicago, ShanghaiTech Univ., People's Republic of China, Univ. of Pennsylvania and East China Normal Univ., People's Republic of China*

**B24 787.7** Global Profiling of the Oxidative Stress Induced Effects on RNA Modifications by Liquid Chromatography-Tandem Mass Spectrometry. M. Jora, C. Sun, P.A. Limbach, B. Addepalli, *Univ. of Cincinnati*

**B25 787.8** Structure and Mechanism of Dnmt3a-Mediated DNA Methylation. J. Song, Z-M. Zhang, R. Lu, G.G. Wang, *Univ. of California, Riverside and Univ. of North Carolina at Chapel Hill*

**B26 787.9** The Regulation of Curcumin on Cacinogenesis and Modulation Through Wnt/ $\beta$ -Catenin Signaling in Ovarian Cancer Cell Line. C. Liu, H. Yen, C. Tsao, C. Kuo, Y. Lin, *Fu Jen Catholic Univ., Taiwan, Tri-Service General Hosp., Taiwan, Tri-Service General Hosp., Songshan Branch, Taiwan and Nat'l. Defense Med. Centre, Taiwan*

**B27 787.1** Prevention of Colorectal Cancer in Oman Using Colonoscopy and Nutritional Assessment: Pilot Study and Validation of Research Tools. A.F. Alsumait, Y.M. Al-Farsi, M.I. Waly, I.M. Al-Qarshoubi, M.S. Al-Mounthri, *Sultan Qaboos Univ., Oman*

**B28 787.11** Association of Oxidative Stress with Polycystic Ovarian Syndrome in Oman: A Case-Control Study. M.A. H. Sulaiman, Y.M. Al-Farsi, M.M. Al-Khaduri, J.M. Saleh, M.I. Waly, *Sultan Qaboos Univ., Oman*

**B29 787.12** Epigenetic Regulation of Oncogenes in Leukemia by the Ikaros Tumor Suppressor. J.L. Payne, E. Dovat, C. Song, S. Dovat, *Loma Linda Univ. Sch. of Med. and Penn State Col. of Med.*

**B30 787.13** Bacteriophage DNA Thymidine Hypermodification Biosynthesis Is Identified via an Amino Acid-Modified Nucleobase Intermediate. Y-J. Lee, C. Guan, N. Dai, I. Correa, P. Weigele, *New England BioLabs Inc.*

**B31 787.14** Generation of Cell Lines for Detection of Transcriptional Changes Under Long-Term Exposure to Low pH Conditions Characteristic of Chronic Inflammation. Q.C. Vega, E. Petroff, M.T. Sitnick, V. Snitsarev, *Montclair State Univ.*

**B32 787.15** Reprogramming Cancer Cell Metabolism Through the Combinatorial Action of Pk11195 and 5-Azacytidine. D. Duran, M. Steinsaltz, S. Anstett, M. Custance, R. O'Donnell, *State Univ. of New York Col. at Geneseo*

**B33 787.16** The Role of the *Escherichia Coli* Dcm Gene in Stationary Phase Fitness and Catalase Activity. L. Finnerty-Haggerty, R. Knapp, O. Kambhampati, S. Stensland, J. Kaur, K.T. Militello, *State Univ. of New York Col. at Geneseo*

**B34 787.17** Effects of Hdac Inhibitor Vorinostat and Radiation on Htb4 and Mda-Mb-435 Cancer Cells. J.F. Wing, T. Maini, R.W. O'Donnell, *State Univ. of New York Col. at Geneseo*

**B35 787.18** Effects of Phototherapy on Gene Expression in the Treatment of Psoriasis. S.N. Abdo, O.L. Tulp, G.P. Einstein, *Univ. of Science, Arts and Technology Montserrat, Montserrat and Einstein Med. Inst.*

**B36 787.19** Fluoxetine and Citalopram Significantly Alter Gene Expression in the Midbrain of Neonate Mice Uncovering Possible Antidepressant-Mediated Epigenetic Programming Changes During Development. L.K. Henry, M.A. Rodriguez, M.D. Allen, M. Shetty, D. Perley, *Univ. of North Dakota Sch. of Med. and Health Sciences*

**B37 787.2** Ace and Agtr1 Are Differentially Methylated in a Hypertensive Versus Normotensive Cohort of Kenyans. D.A. Shelton, N.A. Rice, *Western Kentucky Univ.*

**B38 787.21** The Presence of N6-Methyladenine and 5-Methylcytosine in *Trypanosoma Brucei* RNA. A.J. Keplinger, J.M. Coffey, K.T. Militello, *State Univ. of New York Col. at Geneseo*

**B39 787.22** Assessing the Effects of Inorganic Arsenic on IL-1 $\beta$  and TNF $\alpha$  Secretion, Gene Expression, and DNA Methylation in Murine Macrophages to Gauge Immunotoxic Effects of Heavy Metals. L.N. DeLong, J. R. Barbosa, J. Nyland, *Salisbury Univ.*

**B40 787.23** Functional Somatic Noncoding ncRNA of Extracellular Vesicles (EV) for Vascular Epigenetics: A Genomic Crossword Puzzle in Adaptation of Cells Under Stress. J.H. Wissler, *ARCONS Inst. for Applied Res. and Didactics, Germany*

**B41 787.24** P73 Gene Promoter Methylation Patterns in Prostate Cancer Cell Lines. J.J. Schabert, N.E. Braganca, K.Y. Gandy, J.Y. Park, L.M. Carastro, *Univ. of Tampa and Moffitt Cancer Ctr.*

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**B42 788.1** Characterization of Hops (*h. Lupulus*) Mildew Infection Using Transcriptomics. D.M. Reinartz, M.J. Wolyniak, *Hampden-Sydney Col.*

**B43 788.2** A Role of Iron in the Pathogenesis of Idiopathic Pulmonary Fibrosis. C. Huang, D. Xu, L.K. Senavirathna, L. Liu, *Oklahoma State Univ.*

**B44 788.3** Screening and Identification of Four Serum miRNAs as Novel Potential Biomarkers for Cured Pulmonary Tuberculosis. C. Wang, S. Yang, C-M. Liu, T-T. Jiang, Z-L. Chen, H-H. Tu, J-C. Li, *Hangzhou Women's Hosp., People's Republic of China and Zhejiang Univ., People's Republic of China*

**B45 788.4** Novel Regulators of Melanogenesis Identified by Genome-Wide Transcriptome Analysis. S. Yadav, K. Kirty, M. Shukla, V. Natarajan, C. Gadgil, R. Gokhale, K. Natarajan, *Jawaharlal Nehru Univ., India, Nat'l. Chemical Lab., India, Inst. of Genomics and Integrative Biology, India and Nat'l. Inst. of Immunology, India*

**B46 788.5** Comparison of Transcriptional Signature of Three Staphylococcal Superantigenic Toxins in Human Epidermal Melanocytes. S. Srinivasan, N. Chakraborty, S-A. Miller, A. Gautam, R. Yang, A. Alkhalil, L.T. Moffatt, M. Jett, J.W. Shupp, R. Hammamieh, *U.S. Army Ctr. for Environmental Health Res. and MedStar Washington Hosp. Ctr.*

**B47 788.6** Description of Differentially Expressed Genes Between Healthy Non-Pregnant and Pregnant Women in an RNAseq Transcriptome Study. A.H. d. L. Hirata, L.A. d. J. Rocha, V.A. Silva, R.J. d. Almeida, A.G. Rodrigues, H. Delle, C. P. Camacho, *Universidade Nove de Julho, Brazil*

**B48 788.7** Differential Gene Expression Analysis of Brain Tissue RNA from Mucopolidosis IV Knockout Mice. J. Chacon, L. Rosas, M.P. Cuajungco, *California State Univ. and Fullerton*

**B49 788.8** The Effect of 1,4-Dimethylnaphthalene on the Expression of Pathogenesis-Related Protein 4 in Solanum Tuberosum. A. Aljahani, M. Campbell, *Penn State Behrend*

**B50 788.9** Using Bacterial Transcriptomics to Investigate Targets of Host-Bacterial Interactions in c. Elegans. H. T. Wong, J.P. Chan, J.T. Brumbaugh, A. Ardasheva, C.J. McLimans, J. Wright, R. Lamendella, *Juniata Col.*

**B51 788.1** Cross-Drug Gene Expression Overlaps Reveal Potential Targets for Pharmacogenetic Interventions in Drug Addiction. A.M. Padilla, A.M. Ghezzi, *Universidad de Puerto Rico and Rio Piedras Campus*

**B52 788.11** Monitoring Cytotoxic Effects in Non-Cancerous Cells via Docetaxel. I. Couvertier, E. Dhimolea, C. Mitsiades, *Suffolk Univ. and Dana-Farber Cancer Inst.*

**B53 788.12** Mitotic Inheritance of mRNAs Encoding Transcription Factors in Osteoblastic Cells. F. Khani, H. Takai, G. Stein, M. Galindo, A.J. van Wijnen, *Mayo Clinic, Nihon Univ. Sch. of Dentistry at Matsudo, Japan, Univ. of Vermont Med. Sch. and Univ. of Chile, Chile*

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**B54 789.1** Understanding the Role of Viral RNA Sequence in Host Shut-Off by Sars-Cov. A. Nag, P.K. Chockalingam, J.L. Adams, F.G. Gonzalez, F. Abrar, *Furman Univ.*

**B55 789.2** Membrane-Anchored E-Cadherin/Ago2 Complex Promote Non-Canonical miRNA Biogenesis of Mir-451a. J-N. Li, Y-L. Kuo, W-H. Ku, Y-J. Lu, M-Y. Wang, P-S. Chen, *The Inst. of Basic Med. Sciences of Nat'l. Cheng Kung Univ., Taiwan, Dept. of Surgery, Nat'l. Cheng Kung Univ. Hosp., Col. of Med., Nat'l. Cheng, Taiwan, Dept. of Med. Lab. Science and Biotechnology, Col. of Med., Nat'l. Cheng Kung, Taiwan, Dept. of Surgery and Nat'l. Taiwan Univ. Hosp., Taiwan*

**B56 789.3** Caloric Restriction Impacts Plasma Micrornas in Rhesus Monkeys. J. Clark, A. Schneider, J. Dhahbi, H. Atamna, R. Colman, R. Anderson, *Univ. of Wisconsin-Madison, Faculdade de Nutricao, Brazil and California Univ. of Science and Med.*

**B57 789.4** Connections Between the DNA Damage Response and mRNA Processing. F.I. Nazeer, M. Skidders, E. Dean, A. Hofer, C. Moore, *State Univ. of New York, Potsdam and Tufts Univ.*

**B58 789.5** Selenium Regulation of Selenoprotein Enzyme Activity and Transcripts in a Pilot Study with Founder Mouse Strains from the Collaborative Cross. R.A. Sunde, *Univ. of Wisconsin*

**B59 789.6** How Cell Stress and 3' End Alterations Control the Metabolism of a Cellular Non-Coding RNA. T. Rivas, J.F. Kugel, J. Goodrich, *Univ. of Colorado*

**B60 789.7** Delivery of DNA Encoding RNA Therapeutics to Alter the Expression of Oncogenic Transcripts in Glioblastoma. K.R. Gallagher, S.C. Falotico, N. Sivetz, K. Muralidharan, A. Khan, M.J. Hicks, *Monmouth Univ.*

**B61 789.8** Different Classes of RNA Require Distinct Mex67 Paralogs for Processing and Nucleocytoplasmic Export in Trypanosomes. S. Obado, B. Chait, M. Field, M. Rout, *The Rockefeller Univ. and Univ. of Dundee, United Kingdom*

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**B62 790.1** Structure and Mechanism of a Bacterial T6a Biosynthesis System. A. Luthra, W. Swinehart, S. Bayooz, P. Phan, B. Stec, D. Iwata-Reuyl, M. Swairjo, *San Diego State Univ. and Portland State Univ.*

**B63 790.2** Enzymatic Site-Specific Labeling of RNA for Affinity Isolation of RNA-Protein Complexes. K.N. Busby, N.K. Devaraj, *UCSD*

**B64 790.3** Identifying the Nova Mutations Responsible for the Splicing Failure of Z+ Agrin. J. Mirkovic, M. F. Hossain, A. Stolfi, R. Wang, H. Stitzel, L. Christiaen, M. Ruggiu, *St. John's Univ., Georgia Inst. of Technology and New York Univ.*

**B65 790.4** Limited Proteolysis Analysis of a Dead-Box Protein and Its Domain Truncated Variants. M. Arnold, I. Garcia, *Allegheny Col.*

**B66 790.5** Biophysical Characterization of Interactions Between a Uridylated Histone mRNA Degradation Intermediate and Slbp. S.E. Harris, M-R. Mihailescu, P. Lackey, *Westminster Col. and Duquesne Univ.*

**B67 790.6** Investigation of RNA Granules in Lens Development. B. Weatherbee, A.D. Siddam, S.A. Lachke, *Univ. of Delaware*

**B68 790.7** Exploring the Effect of Conserved Motifs on the Structure and Activity of the RNA-Binding Protein LARP6c from *Arabidopsis Thaliana*. J.S. Foster, C.L. Foster, C. Otte-Pettrill, F.C. Betancourt, K.A. Lewis, C. Antonelli, E. Billy, *Texas State Univ., Univ. of Perpignan, France and Institut de Biosciences et Biotechnologies de Grenoble, France*

**B69 790.8** Thermodynamic Analysis of Atp Dissociation in a Dead-Box Protein. L. Yoder, I. Garcia, J. Patterson, C. Bardine, *Allegheny Col.*

**B70 790.9** Role of RNA Binding Protein Rbm15 in M<sup>a</sup> RNA Methylation During Megakaryocytic Differentiation. N. Ayala-Lopez, R. Ross, S. Halene, P. Limbach, D.S. Krause, *Yale Univ. and Univ. of Cincinnati*

**B71 790.1** Identification of Major Boundaries for Structural Characterization of the Larp6 Proteins from Fish. E.L. Pena, H. Küllköylüoglu, J.M. Castro, X. Pu, L.R. Warner, K.A. Lewis, *Texas State Univ. and Boise State Univ.*

**B72 790.11** =A1543 Is a Potential Bridge Between Cellular Redox State and RNA Processing. P.E. Thomas, *Univ. of Colorado Boulder*

**B73 790.12** An in Vivo Method to Study Post-Transcriptional Regulation in Germ Stem Cells. J. Doenier, S.T. Aoki, J. Kimble, *Univ. of Wisconsin-Madison*

**B74 790.13** Understanding the Role of Post-Translational Modifications on the Splicing Activity of RNA Binding Proteins. N.M. Keppetipola, J. Pina, J. Reynaga, A. Truong, *California State Univ. and Fullerton*

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**B77 791.3** Regulating Nociceptive Channel Trafficking by Site-Directed Mutagenesis of a Calcineurin Interaction Motif. A. Chen, *Stanford Univ.*

**B78 791.4** Oxidative Susceptibility of Calmodulin Cardiac Arrhythmia Mutants. R.J. Moen, M. McCarthy, A. Hinde, D.D. Thomas, *Minnesota State Univ., Mankato and Univ. of Minnesota Twin Cities*

**B79 791.5** Understanding How Two Similar RNA Binding Domains of Paralogous Proteins Mediate Different Protein-Protein Interactions. C.M. Marshall, J. Pina, N.M. Keppetipola, *California State Univ. and Fullerton*

**B80 791.6** Protein Lysine Acetylation Is a Regulatory Mechanism for *Bacillus Subtilis* Multicellularity. A. Reverdy, Y. Chen, Y. Chai, *Northeastern Univ., Inst. of Biotechnology and Zhejiang Univ., People's Republic of China*

**B81 791.7** Palmitoylation Regulates the Functions of NHE1. E. Pitsch, M. Wallert, J. Provost, *Univ. of San Diego and Bemidji State Univ.*

**B82 791.8** FAS-Associated Factor 1 (FAF1) Binds to Mineralocorticoid Receptor (MR) Through Its Sumo-Interacting Motifs and Negatively Modulates MR Transcriptional Activity. D.-Y. Lin, *Nat'l. Cheng Kung Univ., Taiwan*

**B83 791.9** Towards Visualizing Citrullinated Proteins in Sds-Page Gels Using Phenylglyoxal-Based Chemistries. K.A. Thompson, J.E. Grant, *Univ. of Wisconsin-Stout*

**B84 791.1** Effect of Non-Active Site Amino Acid Residues on Inhibitor Selectivity. T. Eck, U. Gubler, N. Goodey, *Montclair State Univ.*

**B85 791.11** The Expression of Cancer Associated Protein-Cortactin in Chinese Hamster Ovarian Cells. B. Walenkiewicz, A. Bianchi, S. Pitzen, A. Kruchten, M. Talaga, *Col. of Saint Scholastica*

**B86 791.12** A Screen for Novel Targets Casts Polyphosphorylation of Lysine as a Common Post-Translational Modification. A. Bentley-DeSousa, H. Moteshareie, C. Holinier, Y.-C. Tseng, E. Bondy-Chorney, N. Davey, A. Golshani, M. Downey, *Univ. of Ottawa, Canada, Carleton Univ., Canada and Univ. Col. Dublin, Ireland*

**B87 791.13** Mass Spectrometry Analysis of Rbm20 Phosphorylation and Its Role in Titin Splicing. M. Sun, Y. Jin, C. Zhu, M. Rexiati, H. Cai, Z. Chen, Y. Ge, W. Guo, *Univ. of Wyoming and Univ. of Wisconsin-Madison*

**B88 791.14** Investigating Sema6a-PlxnA Signaling Mechanisms in Development: Identification of Key PlxnA Phosphorylation Sites and the Discovery of a Novel Naturally-Released Sema. R. St. Clair, S. Emerson, K. D'Elia, M. Weir, A. Schmoker, K. Williams, M. Goldstein, E. Stant, A. Ebert, B. Ballif, *Univ. of Vermont*

**B89 791.15** The Regulation of Cellular Proliferation by Vacm-1/cul5 Is Dependent on Its Post-Translational Modifications by Nedd8. S. E. Lee, S. Sundquist, M. Burnatowska-Hledin, *Hope Col.*

**B90 791.16** Studying Polyphosphorylation, a Novel Ptm, in Mammalian Cell Lines. C. Holinier, A. Bentley-DeSousa, E. Bondy-Chorney, N. Davey, M. Downey, *Univ. of Ottawa, Canada and Univ. Col. Dublin, Ireland*

**B91 791.17** Development and Characterization of a Model Post-Translationally Modified Protein Library. E.K. Major, R. Magnani, R.L. Houtz, L.H. Bradley, *Univ. of Kentucky Col. of Med. and Univ. of Kentucky*

**B92 791.18** Protein Methylation and Translation: Role of Lysine Modification on the Function of Yeast Elongation Factor 1 Alpha. J. White, N. Deramchi, T. Cato, J. Gabunilas, G. Chanfreau, S. Clarke, *Univ. of California and Los Angeles*

**B93 791.19** Posttranslational Arginylation Enzyme Ate1 Is a Mitochondrial-Derived Master Regulator That Coordinates Glycolysis and Respiration in the Warburg Effect. F. Zhang, C. Jiang, D. Patel, B. Moorthy, A. Kumar, M. Birnbaum, J. Huang, A. Barrientos, T. Lampidis, F. Fontanesi, *Univ. of Miami*

**B94 791.20** Monitoring Innate Immune Receptor Stability via Post-Translational Modification by Ogt. W.R. Drake, C.-W. Hou, N.E. Zachara, C.L. Grimes, *Univ. of Delaware and Johns Hopkins Univ. Sch. of Med.*

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**B98 792.2** Are Heme Proteins Major Targets for Homocysteine-Induced Modifications? G.S. Sharma, L.R. Singh, Dr. B.R. Ambedkar Centre for BioMed. Res. and *Univ. of Delhi, India*

**B99 792.3** The Influence of Metal Ions on the Conformation of the Sufu Iron-Sulfur Cluster Biosynthesis Protein from *Bacillus Subtilis*. H.H. Almutairi, J.H. Zeilstra-Ryalls, A.T. Torelli, *Bowling Green State Univ. and Ithaca Col.*

**B100 792.4** Structural Study of Arc and Its Interactions with Endocytic Binding Partners. M. Boldridge, L. Wang, *Hawaii Pacific Univ.*

**B101 792.5** A Herpesvirus Entry Mediator Mutein with Selective Agonist Action for the Inhibitory Receptor B and T Lymphocyte Attenuator. J. Sedy, M.O. Balmert, A. Re, A. Moshayedi, B. Ware, W. Smith, I. Nemcovicova, P.S. Norris, B.R. Miller, D. Aivazian, C. Ware, *Sanford Burnham Prebys Med. Discovery Inst., BioMed. Res. Ctr., Slovak Academy of Sciences, Slovakia, Ctr. for Therapeutic Innovation and Pfizer Inc.*

**B102 792.6** Snapshots of C-S Cleavage in Egt2 Reveals Substrate Specificity and Reaction Mechanism. S. Irani, N. Naowarajna, P. Liu, Y. Zhang, *Univ. of Texas at Austin and Boston Univ.*

**B103 792.7** Structure and Function of Ergothionease, an Ergothioneine Tma-Lyase from the Soil Bacteria *Burkholderia Sp. Hme13*. B.P. Medellin, S. Wang, P. Liu, Y. J. Zhang, *Univ. of Texas at Austin and Boston Univ.*

**B104 792.8** Studying Protein-Protein Interactions in Fatty Acid and Polyketide Biosynthetic Pathways via Site-Specific Vibrational Spectroscopy. V.T. Chioti, C.H. Londergan, L.K. Charkoudian, *Haverford Col.*

**B105 792.9** Identifying Residue-Residue Contacts via Deep Mutational Scanning. E.C. Hinds, P.A. Romero, *Univ. of Wisconsin-Madison*

**B106 792.1** Studying the Dimerization of the FNR Transcription Factor by Mutant Analysis at the 130 and 140 Residue Positions. S. Kazmouz, L.J. Moore, *Monmouth Col.*

**B107 792.11** Invariant BECN1 C-X-X-C Motifs Are Essential for Starvation-Induced Autophagy. S. Mukhopadhyay, Y. Li, S. Sinha, *North Dakota State Univ.*

**B108 792.12** Structural Comparison of the Arabidopsis Thaliana Family of  $\beta$ -Amylases. N. Chandrasekharan, J. Monroe, C. Berndsen, *James Madison Univ.*

**B109 792.13** Structural and Functional Effects of Altering the Nonpolar Core of Hemolysin A. G.M. Stutgen, T.M. Weaver, D.P. Grilley, *Univ. of Wisconsin-La Crosse*

**B110 792.14** Thermal Stability of Type II Polyketide Acyl Carrier Proteins. M. Rivas, V. Courouble, Z. Haverford College Biochemistry Superlab, A. Sisto, J. Beld, B. Kokona, L.K. Charkoudian, *Haverford Col. and Drexel Univ.*

**B111 792.15** Structural Transitions in Conserved, Ordered Beclin I Domains Essential to Regulating Autophagy. K. Glover, Y. Li, S. Mukhopadhyay, Z. Leuthner, S. Chakravarthy, C. Colbert, S. Sinha, *North Dakota State Univ., Bio-CAT, Sector I 8ID and Advanced Photon Source*

**B112 792.16** Non-Native Structure Present in the Unfolded Ensemble May Initiate Aggregation of Als Variants of Superoxide Dismutase (Sod1). N. Cohen, O. Bilsel, C.R. Matthews, *Univ. of Massachusetts Med. Sch.*

**B113 792.17** Site-Selective Alterations Within the Hemolysin A Non-Polar Core. J.D. Grosskopf, T.M. Weaver, D.P. Grilley, *Univ. of Wisconsin-La Crosse*

**B114 792.18** The Structure and Mechanism of a Viral Genome Packaging Motor. J.A. Hayes, B.J. Hilbert, N.P. Stone, C.M. Duffy, B. Sankaran, B.A. Kelch, *Univ. of Massachusetts Med. Sch. and Lawrence Berkeley Nat'l. Lab.*

**B115 792.19** Distinct Functions for the Flexible Loops of Zinc Specific Solute Binding Proteins from *Paracoccus Denitrificans*. D.P. Neupane, E.T. Yukl, *New Mexico State Univ.*

**B116 792.2** Probing the Effect of Distal Charges on the Reduction Potential of the [2Fe-2S] Cluster in the Rieske Protein from *Thermus Thermophilus*. J. Munoz, L. Hunsicker-Wang, *Trinity Univ.*

**B117 792.21** Interactions Between Divalent Cations and a Periplasmic Lipoprotein Involved in *Salmonella* Magnesium Homeostasis. R. Soens, J. May, *Univ. of Wisconsin-La Crosse*

**B118 792.22** How and Why Internal Cavities Destabilize Proteins. F.A.A. Mulder, M. Xue, Y. Yoshimura, R. Kitahara, *Aarhus Univ., Denmark and Ritsumeikan Univ., Japan*

**B119 792.23** Crystal Structure of the Archaeosine Synthase Quef-Like—Insights into Amidino Transfer and Trna Recognition by the Tunnel Fold. X. Mei, *San Diego State Univ.*

**B120 792.24** Analyzing the Three Dimensional Structure of Cortactin Protein. M. Gurumani, A. Kruchten, *The Col. of St. Scholastica*

**B121 792.25** Structural Analysis of Cortactin After Anion Exchange Chromatography. G. Graves, A. Kruchten, *The Col. of St. Scholastica*

**B122 792.26** Structural Studies of the Iterative Enzyme Desd: Cooperativity, Substrate Variability and Conformational Changes. Y. Mojab, K. Hoffmann, *California Lutheran Univ.*

**B123 792.27** A Comparative Study of Osmolyte Effects on the Thermal Stabilities of Tnf $\alpha$ . D. E. Kim, R. Takahashi, E. Lindahl, R. Younger, S. Baghdoyan, B. Panchal, S. Wilkinson, *California Polytechnic State Univ.*

**B124 792.28** Biophysical Analysis of Human Neuropeptide Y: Mutations in the Hairpin Core Reveal Unusual Thermal Stability Linked to Higher-Order Self-Association. M.M. Hopkins, D.L. Bain, *Univ. of Colorado Anschutz Med. Campus*

**B125 792.29** Analysis of Spin Probe Viability for Protein Structure Investigation Using Advanced Epr Techniques. L. Ebersol, A. Bokhari, A. Silakov, *Pennsylvania State Univ.*

**B126 792.3** Crossroad Control of Cell Proliferation and Apoptosis by Pea-15 Phosphorylation Homeostasis and Allosteric Regulation of Protein Conformations and Interactions. Y. Wei, S. Crespo, S. Hassan, *New Jersey City Univ.*

**B127 792.31** Structural Analysis of the Active Site and DNA Binding of Human Cytidine Deaminase Apobec3b. S. Hou, T.V. Silvas, F. Leidner, E. Nalivaika, N.K. Yilmaz, C.A. Schiffer, *Univ. of Massachusetts Med. Sch.*

**B128 792.32** N- $\pi^*$  and Other Atomic Level Interactions of Formamides with Nucleobases and Base Analogs in Water. R. Karim, X. Cheng, M.T. Record, *Univ. of Wisconsin-Madison*

**B129 792.33** FRET-Based Measurements of Protein Multimerization in Pyruvate Carboxylase. A.L. Koza, J. Hakala, M. St. Maurice, *Marquette Univ.*

**B130 792.34** Reconstitution of a Tail-Anchored Mitochondrial Membrane Protein. A.L. Bakum, B. Hill, *Med. Col. of Wisconsin*

**B131 792.35** Optimizing Protein Crystal Formation of a Heterocyclization Domain from Yersiniabactin Synthetase. M. Patterson, V. Dieu, M. MacRae, B. Henriquez, J. Soule, A. Gnann, D.P. Dowling, *Univ. of Massachusetts Boston*

**B132 792.36** Nmr Structural Studies of Membrane Proteins in Bilayer Environments. J. Radoicic, S. H. Park, S.J. Opella, *UCSD*

**B133 792.37** The Importance of Salt-Bridge Formation of Lysine 52 and 54 from Apolipoprotein III for Protein Structure and Function. A. Tran, K. Shah, P.M. M. Weers, *California State Univ., Long Beach*

**B134 792.38** Use of  $^{19}\text{F}$  Nmr to Probe Conformational Changes of Arrestin. R.M. Stout, X. Zhan, W. Carroll, *Tennessee Tech. Univ.*

**B135 792.39** Novel *in-Vitro* Tag-and-Modify Protein Sample Generation Methods for Multiplexed Single-Molecule FRET Screening. K.M. Hamadani, N. Hite, J.J. Howe, *California State Univ., San Marcos*

**B136 792.4** Zinc-Mediated Oligomerization of S100a12. S.M. Damo, V. Garcia, S. Little, D. Franklin, J.A. Gaddy, *Fisk Univ. and Vanderbilt Univ.*

**B137 792.41** Utilizing Homology of Wound Inducible Transcript 3.0 (Wit3) as a Stepping Stone to Investigate the Function of Suppressor of Ikkepsilon (Sike). M. Dawood, J.E. Bell, J.K. Bell, *Univ. of San Diego*

**B138 792.42** Biophysical Characterization of Suppressor of Ikkepsilon Structure, Stability, and Metal Binding Properties. F. Shikwana, J.E. Bell, J.K. Bell, *Univ. of San Diego*

**B139 793.1** Dual Function of the Trigger Factor Chaperone in Nascent Protein Folding. C. Kaiser, K. Liu, K. Maciuba, *Johns Hopkins Univ.*

**B140 793.2** Tuning Hsp70 Function: Investigating the Ability of Hsp40/hsp70 Extragenic Suppressors to Promote Prion Propagation in Yeast. E. Kamiya, B.A. Schilke, E.A. Craig, J.K. Hines, *Lafayette Col. and Univ. of Wisconsin-Madison*

**B141 793.3** Evolutionary Conservation of Variant-Dependent Prion-Promoting Hsp40 Functions in Plants. R.E. Brown, J.K. Hines, *Lafayette Col.*

**B142 793.4** Complex Effects of J-Protein Alterations on Hsp104-Mediated Curing of Prion  $\psi^+$ . S.E. Berger, E. Kamiya, M.T. Astor, J.K. Hines, *Lafayette Col.*

**B143 793.5** Determining Chaperone Requirements for the Propagation of Heterologous Poly-Glutamine Aggregates in *Saccharomyces Cerevisiae*. A.N. Killian, S.J. Cole, J.K. Hines, *Lafayette Col.*

**B144 793.6** Atf6 Ubiquitylation Is Required for Its Transcriptional Activity and Degradation. C. Aivati, D.J. Thuerauf, C.C. Glembofski, *San Diego State Univ. Heart Inst.*

**B145 793.7** Loss-of-Function PCSK9 Mutants Evade the Unfolded Protein Response Sensor, GRP78, and Fail to Induce Endoplasmic Reticulum Stress When Retained. P. Lebeau, K. Placko, A.A. Al-Hashimi, J. H. Byun, S. Lhotak, N. Holzapfel, G. Gyulay, S.A. Igdira, D.R. Cool, B. Trigatti, N.G. Seidah, R.C. Austin, *McMaster Univ., Canada, Wright State Univ. and Clinical Res. Inst. of Montreal, Canada*

**B146 793.8** Increasing Surface Expression of Pancreatic  $\beta$  Cell -K<sub>ATP</sub> Channels Attenuates Palmitic Acid-Induced Lipotoxicity *in Vivo* and *in Vitro*. P.-C. Chen, J.-S. Ruan, Y.-Y. Kuo, R.-Y. Chao, Y.-W. Chen, *Nat'l. Cheng Kung Univ., Taiwan*

**B147 793.9** An Engineered *e. Coli* Ribosome with Tunable Translation Rates Enhances Recombinant Protein Expression. J.P. Oza, B. Des Soye, M.C. Jewett, *California Polytechnic State Univ. and Northwestern Univ.*

**B148 793.1** Mortalin Caught in Action: Structures of the Nucleotide Binding Domain in the Apo, Adp-Bound and Amp+pp<sub>i</sub>-Bound States. M. Moseng, R. Page, *Miami Univ.*

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**B150 793.12** Tps Domain Folding Causes Activation of a Newly Defined Hemolytic Functional Domain. G.M. Wade, T.M. Weaver, D.P. Grilley, *Univ. of Wisconsin-La Crosse*

**B151 793.13** A Role for the N-Terminal Domain in Modulating the Activities of the Nucleotide Exchange Factor Sili. K.A. Pareja, C. Sevier, *Cornell Univ.*

**B152 793.14** Amyloid Oligomers Prevent Protein Folding. A. Mukherjee, M. Chacon, N. Mendez, M. Shah Nawaz, C. Soto, *Mitchell Ctr. for Alzheimer's Disease and Related Brain Disorders, McGovern Med. Sch. and Univ.*

**B153 793.15** Minichaperone-Mediated Folding of Malz Proceeds by Binding and Release of Native and Functional Intermediates. N. Chaudhuri, *Indian Inst. of Tech., India*

**B154 793.16** Molecular Chaperones Disperse PabI Hydrogel More Quickly Than Misfolded Aggregates. H. Yoo, E. Pilipenko, D.A. Drummond, *Univ. of Chicago*

**B155 793.17** Insertion of Human Mthsp70 (Mortalin) into Liposomes Resembling Mitochondrial Membrane. P.R. d. D. Silva, D.M. Cauvi, J.C. Borges, A.d. De Maio, *UCSD and Instituto de Química de São Carlos da Universidade de São Paulo, Brazil*

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**B158 794.3** Decoding the Prion-Chaperone Interaction Network in Yeast: Prion-Specific Chaperone Functions Promote Amyloid Diversity. J.K. Hines, *Lafayette Col.*

**B159 794.4** Insight Into Parkinson's Disease from Yeasts: Combined Impact of Covalent Modifications and Familial Mutations on  $\alpha$ -Synuclein. Y. P. Ganey, R. Thomas, A. Roman, C. Mwale, J. Mountain, A. Balam, M. Marshall, S. DebBurman, *Lake Forest Col.*

**B160 794.5** The Parkinson's Disease Protein  $\alpha$ -Synuclein Alters the Microenvironment of the Endoplasmic Reticulum in *Saccharomyces Cerevisiae*. V.M. Haak, T.J. McBride, M.J. Haverly, N. Austriaco, *Providence Col.*

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**B163 794.8** Prpc: The Normal Prion. C. Wright, A. Howard, S. Lim, P. Lakshman, C. Loo, *Olathe North High Sch.*

**B164 794.9** Investigating the Mechanism of Cis Amide Bond Stabilization in Phosphoserine-Proline Sequences. N.R. Raniszewski, H.K. Ganguly, N. Zondlo, *Univ. of Delaware*

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**B169 795.2** Discovery of Protein Phosphatase 2a Substrates. X. Wang, R. Page, P. Wolfgang, *Brown Univ. and Univ. of Arizona*

**B170 795.3** Investigating Effects and Determinants of Pap<sub>248-286</sub> Membrane Interactions: Membrane Leakage and Peptide/lipid Co-Aggregation. E. Vane, A. Nath, *Univ. of Washington*

**B171 795.4** Development of a Cell-Based Assay for Tau Strain Discrimination. L.M. Angeles-Perez, J. Vaquer-Alicea, V. Manon, M. Diamond, *Univ. of Puerto Rico and The Univ. of Texas Southwestern Med. Ctr.*

**B172 795.5** The Autophagy Inducers AR-12 and AR-14 Control Prion Infection. B. Abdulrahman, D. Abdelaziz, S. Thapa, L. Lu, S. Gilch, H. Schatzl, *Univ. of Calgary, Canada*

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**B175 795.8** The Intrinsically Disordered PsbO Subunit of Photosystem II: Structure and Role in Photosynthetic Water Oxidation. B.A. Barry, U. Brahmachari, C.E. Obi, J.N. He, *Georgia Inst. of Technology*

**B176 795.9** Using Ttr50-127 Fragments as Probes to Detect Amyloidogenic Seeding. L.T. Nelson, J. D. Schonhoft, J. Kelly, J. Duerr, *George Fox Univ. and Scripps Res. Inst.*

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**B178 795.11** The Amyloid- $\beta$  Peptide in Alzheimer's Disease: Molecular Interactions and Structure Conversions. A. Gräslund, *Stockholm Univ., Sweden*

**B179 795.12**  $\alpha$ -Synuclein Inhibits Snx3-Retromer-Mediated Retrograde Recycling of Iron Transporters in a *S. Cerevisiae* Model of Parkinson's Disease. S.N. Witt, S.N. Nagarajan, Z. Liu, W.O. Hemphill, R. Shi, V.N. Uversky, D. Patel, *Louisiana State Univ. Health Sciences Ctr., The Univ. of New Orleans and Univ. of South Florida*

**B180 795.13** Relating Collapse to Sequence and Behavior in Glutamine-Rich Domains. C.J. Garelli, A.S. Scott, J.P. Ellis, *Ithaca Col.*

**B181 795.14** The Disordered Landscape of the 20s Proteasome Substrates and the Mechanism of Their in Vitro and in Vivo Degradation. Y. Shaul, N. Myres, A. Biran, N. Reuven, *Weizmann Inst. of Science, Israel*

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**B183 796.2** Bioactive Fungal Screening to Find Efficient Biomass-Degrading Enzymes. U.A. Vazquez, D. Conrad, H. Ma, T. Woodard, S. Wu, *Hamline Univ., Rose Hulman Univ. and Univ. of Oklahoma*

**B184 796.3** Two Distinct Evolutionary Engineering Pathways of Human Kynureninase Confer Different Substrate Specificities and Rate-Limiting Steps. C.S. Karamitros, K. Murray, J. Blazeck, S. D'Arcy, K. Johnson, E. Stone, G. Georgiou, *The Univ. of Texas at Austin and The Univ. of Texas at Dallas*

**B185 796.4** Biosynthesis of Nonproteinogenic Amino Acids Oxyvinylglycines. B. Li, J.B. Patteson, Z.D. Dunn, *Univ. of North Carolina at Chapel Hill*

**B186 796.5** Effect of Immobilization on the Specificity and Stability of Choline Oxidase. A.H. Fischel, K. Holton, J.M. Schmitz, L.M. Watkins, *James Madison Univ.*

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**B188 796.7** A Novel Radical SAM Mechanism Mediated by the Interferon-Inducible Protein Viperin. A.B. Dumbrepail, P. Malec, S. Ghosh, A. Patel, R.T. Kennedy, E. N.G. Marsh, *Univ. of Michigan*

**B189 796.8** Expression and Functional Characterization of Active Nicotinic Acid Dehydrogenase from *Pseudomonas Fluorescens* Pf5. N.M. Brownstein, M.J. Snider, *The Col. of Wooster*

**B190 796.9** Structural Insights into Peptide Recognition and Modification by the Radical SAM Enzyme SuiB. K.M. Davis, *Princeton Univ.*

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**B195 796.14** Discovery of Novel Monomeric L-threonine 3-Dehydrogenase and Elucidation of Product Release Mechanism. T. Motoyana, S. Nakano, Y. Yamamoto, H. Tokiwa, Y. Asano, S. Ito, *Univ. of Shizuoka, Japan, Rikkyo Univ., Japan and Toyama Prefectural Univ., Japan*

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**B197 796.16** Functional Characterization of Nudix Hydrolases. J.L. Mills, K. Wilson, Z. Wetzel, A. DiCola, H. Strong, P.A. Craig, S.F. O'Handley, *Rochester Inst. of Technology*

**B198 796.17** Engineering of Enzymes to Improve Lignin Breakdown for Use in Fuel Ethanol Production. R.D. Greene, B.L. Hall, *Grand View Univ.*

**B199 796.18** Defining the Fumarate Water Binding Site. T.M. Weaver, *Univ. of Wisconsin-La Crosse*

**B200 796.19** Effectiveness of *in Silico* Engineering of the  $\beta$ -Glucosidase B Enzyme. K.R. Boulanger, B.L. Hall, *Grand View Univ.*

**B201 796.2** Tuberculosis Serine Hydrolase Variable Expression, Isolation, and Characterization Under Hypoxia Conditions. L.E. Severinac, R.J. Johnson, *Butler Univ.*

**B202 796.21** Kinetic Characterization and Chemotherapeutic Relevant Inhibition of Human Malate Dehydrogenase 1 and 2. S. Wardenfelt, T. Dwyer, *Stevenson Univ.*

**B203 796.22** Biophysical Characterization of *Aptenodytes Forsteri* Cytochrome P450 19 (Aromatase). F. Zarate-Perez, J.B. Velázquez-Fernández, G.K. Jennings, L.S. Shock, C.E. Lyons, J.C. Hackett, *Virginia Commonwealth Univ.*

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**B205 796.24** Exploring the Molecular Determinants of Heterocycle Formation in Hybrid Nonribosomal Peptides/Polyketides. D.P. Dowling, Y. Kung, A. Croft, K. Taghizadeh, W. Kelly, C.T. Walsh, C.L. Drennan, *Univ. of Massachusetts Med. Sch. Boston, Bryn Mawr Col., Univ. of Nottingham, United Kingdom, Massachusetts Inst. of Technology, Georgia Inst. of Technology and Stanford Univ.*

**B206 796.25** Biosynthesis of Oxetanocin: Are Two Cofactors Better Than One?. J. Bridwell-Rabb, H-W. Liu, A. Zhong, C. Drennan, *Univ. of Michigan, The Univ. of Texas and Massachusetts Inst. of Technology*

**B207 796.26** Synthetic Biology, Biosynthesis, Enzymology, (Meta)genomics, et al. Learning from Nature. V. Agarwal, *Georgia Inst. of Technology*

**B208 796.27** Improved Synthesis of N-Methyl Cadaverine. K.N. Anderson, S. Moaven, A. Cozzolino, J.C. D'Auria, *Texas Tech Univ.*

**B209 796.28** Biosynthesis and Production of Granatane Alkaloids in Hairy Root Cultures of *Punica Granatum*. K. Glockzin, J. D'Auria, *Texas Tech Univ.*

**B210 796.29** Engineer Alkane Hydroxylating Properties into Phenol Hydroxylase: A Look at the 2<sup>nd</sup> Coordination Sphere. E. Guillen, M. Sazinsky, *Pomona Col.*

**B211 796.3** Initial Characterization of DszA, a Monooxygenase from the *Rhodococcus* Biodesulfurization Pathway. S. Truong, M. Sanchez, *California State Univ. and Northridge*

**B212 796.31** Screening, Expression, and Characterization of Baeyer-Villiger Monooxygenase for the Biotransformation of Ricinoleic Acid. J. Yun, K-Y. Choi, *Ajou Univ., Republic of Korea*

**B213 796.32** The Molecular Mechanism of Intermolecular Signal Transduction in Cystathionine- $\beta$ -Synthase (CBS). S.S. Chandrasekaran, D.G. Ruiz, D.R. Kennedy, R.M. Esquerra, *San Francisco State Univ., Univ. of California and San Francisco*

**B214 796.33** Expression, Purification, and Characterization of Halophilic Pph\_pro1 Protease Isolated from *Pseudoalteromonas Phenolica*. K-Y. Choi, Y-G. Kim, Y-H. Yang, *Ajou Univ., Republic of Korea, Soongsil Univ., Republic of Korea and Konkuk Univ., Republic of Korea*

**B215 796.34** Sulfur Respiration in *a. Fulgidus*? Kinetics and Structure of an *a. Fulgidus* NAD-Dependent Poly/Persulfide Reductase. S. Shabdar, A. Castineiras, N. Desir, E. J. Crane III, M. Sazinsky, *Pomona Col.*

**B216 796.35** Snapshots of the Catalytic Cycle of an O<sub>2</sub> Pyridoxal Phosphate-Dependent Hydroxylase. J.B. Hedges, E. Kuatsjah, Y-L. Du, L.D. Eltis, K.S. Ryan, *Univ. of British Columbia, Canada and Zhejiang Univ., People's Republic of China*

**B217 796.36** Investigation of the Iterative Methylations by a Cobalamin-Dependent Radical Sam Methyltransferase. Y. Wang, T.P. Begley, *Texas A&M Univ.*

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**B219 797.2** Small Compounds Modulating Bi-Directional Allostery in Protein Kinases: A New Grip with an Old Trick. R.M. Biondi, J.O. Schulze, E. Süß, L. Pietsch, K. Busschots, G. Saladino, F.L. Gervasio, M. Raab, M. Sanhaji, K. Strebhardt, *IBioBA-CONICET-Partner Inst. of the Max Planck Society, Argentina, Frankfurt Univ. Hosp., Germany and Univ. Col. London, United Kingdom*

**B220 797.3** Synthesis of Mono-Substituted Anthraquinone Derivatives to Be Used in the Purification of Lactate Dehydrogenase. B.D. Retzlaff, J. Mueller, *Saint Mary's Univ. of Minnesota*

**B221 797.4** Understanding the Structure-Function Relationship of IDH1 R132 Mutants and the Effect of Allosteric Inhibitors. D. Avellaneda Matteo, G. Wells, A. Grunseith, J. Schiffer, C. Sohl, *San Diego State Univ., UCSD*

**B222 797.5** Dopamine- $\beta$ -Monooxygenase Inhibitors Obtained by Structure Based Methods Exhibited Anti-Hypertensive Effect in L-Name Induced Hypertensive Rats. S. K. Dey, P. Prabhakar, M. Saini, T. Joseph, B.K. Thelma, S.K. Maulik, S. Kundu, *Univ. of Delhi South Campus, India and All India Inst. of Med. Sciences, India*

**B223 797.6** IDH1 Mutation-Inspired  $\alpha$ -Ketoglutaric Acid Mimics for Oxidative Therapy of Higher Grade Gliomas Through  $\alpha$ -Ketoglutarate Dehydrogenase Inhibition. H. R. Madala, S. R. Punganuru, K. Srivenugopal, *Texas Tech Univ. Health Sciences Ctr.*

**B224 797.7** Examining Fmoc-Amino Acid Derivatives as Selective Inhibitors of Butyrylcholinesterase. J. Ramirez, J. Gonzalez, J. Schwans, *California State Univ. and Long Beach*

**B225 797.8** Structural Analysis of Darunavir Analogs Against Primary Resistance Mutations in HIV Protease. G.J. Lockbaum, F. Leidner, L. Rusere, E. Nalivaika, A. Ali, N. Kurt-Yilmaz, C. Schiffer, *Univ. of Massachusetts Med. Sch.*

**B226 797.9** Synthesis of 1,4-Diaminoanthraquinones for the Purification of Lactate Dehydrogenase. M.E. Campbell, J. Mueller, *Saint Mary's Univ. of Minnesota*

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**B228 797.11** Targeting Dxp Synthase Using Tpp Mimics. A. Alsalahi, P. Girardi, K. Callahan, A. Sridhar, *St. John Fisher Col. and Wegmans Sch. of Pharmacy at St. John Fisher Col.*

**B229 797.12** Targeting Aspartate Transcarbamoylase in *Staphylococcus Aureus*: A Novel Therapeutic Approach for Sepsis. C. Patel, A. Vaishnav, J.S. Brunzelle, H.I. Guy-Evans, B.F.P. Edwards, D.R. Evans, *Wayne State Univ. Sch. of Med., Northwestern Univ. Ctr. for Synchrotron Res. and Eastern Michigan Univ.*

**B230 797.13** Inhibition of Monoamine Oxidases (Maos) by Green Tea Extracts. G.R. Topaz, J. Rodriguez, F. Mahmood, D. Depeiza, L. Lorenzo, R. Destine, K. Stieglitz, *Boston Univ. and Roxbury Community Col.*

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**B233 798.3** Development of New Molecular Tools for Antibody Detection and Purification. M. de Lourdes Borba Magalhaes, G.F. da Silva, L.M.S. Echeverri, L.A. Fernandes, F. Batista, *Universidade do Estado de Santa Catarina, Brazil*

**B234 798.4** How to Design Artificial Protein Surpassing Native Enzyme Function [sim] Design and Multidisciplinary Analysis of Artificial L-Threonine 3-Dehydrogenase [sim]. S. Nakano, T. Motoyama, Y. Miyashita, Y. Ishizuka, N. Matsuo, H. Tokiwa, S. Shinoda, Y. Asano, S. Ito, *Univ. of Shizuoka, Japan, Rikkyo Univ., Japan and Toyama Prefectural Univ., Japan*

**B235 798.5** Construction of Hybrid Inhibitors for Metalloproteinase Targeting. L.B. Quinto, G.I. Berumen, H.P. Kehoe, J.A. Van Deventer, *Tufts Univ.*

**B236 798.6** Designed Metal-Mediated Protein Dimerization. B.J. Maniaci, J.J. Love, *San Diego State Univ.*

**B237 798.7** Engineering Tissue Inhibitor of Metalloproteinases-1 (Timp-1) as a Selective Inhibitor of Matrix Metalloproteinase-3 (Mmp-3) for Therapeutic Targeting. M. Raeeszadeh Sarmazdeh, B. Sankaran, D. Radisky, E. Radisky, *Mayo Clinic and Berkeley Ctr. for Structural Biology*

**B238 798.8** Rational Design of pH Sensitive MS2 Virus-Like Particles for Drug Delivery Applications. E. Alvarez-Benedicto, E. Hartman, M.B. Francis, *Univ. of Puerto Rico, Rio Piedras Campus, Puerto Rico, Univ. of California and Berkeley*

**B239 798.9** Utilization of Polymer Based Protein Engineering and ATRP to Modulate Substrate Size Specificity of Avidin. N.P. Winegardner, H. Adams, A. Lucas, B. Kaupbayeva, H. Murata, A.S. Russell, J.S. Minden, *Carnegie Mellon Univ.*

**B240 798.1** Bioluminescent Annexin Fusion Proteins (AFPs) for Atherosclerosis Detection. T. Head, P. Dau, S. Deo, P. Daftarian, P. Goldschmidt-Clermont, S. Daunert, *Univ. of Miami, Miller Sch. of Med., JSR Micro and Inc.*

**B241 798.11** Protatether: A Method for the Incorporation of Variable Linker Sequences in Protein Fusions. R.M. Hughes, J.L. Norris, *East Carolina Univ.*

**B242 798.12** Engineering a VEGF Fusion Protein for Use with an Artificial Extracellular Matrix with Programmable Binding Affinities. R. Elliott, A. Barkas, E. R. Balog, *Univ. of New England*

**B243 798.13** The Role of the Furin-Cleavable Linker and Kdel Sequence in Cytotoxicity of Recombinant Immunodase. J. Baker, *Towson Univ.*

**B244 798.14** Elicitation of HIV-Specific Antibodies Targeting the Carbohydrate-Occcluded Neutralization Epitopes Through Rational Protein Design. C. Zhu, E. Dukhovlinova, O. Council, S.R. Benhabbour, L. Ping, E.L. Potter, L.P. Kincer, R. Swanstrom, N.Y. Dokholyan, *Univ. of North Carolina at Chapel Hill*

**B245 798.15** Assessing Efficiency of the New England Biolabs Q5® Site-Directed Mutagenesis Kit to Produce a Library of Aminoglycoside *n*-Acetyltransferase Mutants. J. Macias, O. Pham, A. Vaca, P. Pennings, M.L. Kuhn, *San Francisco State Univ.*

**B246 798.16** Mini-Ins: A Monomeric Human Insulin Inspired from Cone Snail Venom Peptides. D. Chou, *Univ. of Utah*

**B247 798.17** Expression and Purification of Hydrophobic Pep-Inhibiting Peptides from Bovine  $\alpha$ s I Casein. L.E. Sheffield, K.D. Whalen, C.A. Goode, F.M. Acosta, M.E. Lenert, B.A. Clack, *Stephen F. Austin State Univ.*

**B248 798.18** Discovery of Tumor Necrosis Factor Receptor Binders Using Yeast Surface Display. N. Vunnam, S. Szymonski, J.N. Sachs, B. Hackel, *Univ. of Minnesota*

**B249 798.19** Construction of Chimera Prolyl Endopeptidases to Determine Role of Domains in Substrate Size Specificity. F. Alakija, B. Clack, *Stephen F. Austin State Univ.*

**B250 798.2** Covalent Attachment of Protein Cargo to a Computationally Designed Toroid Scaffold. C.R. Polkinghorn, J. Hallinan, L. Doyle, P. Bradley, B. Stoddard, B.K. Kaiser, *Seattle Univ. and Fred Hutchinson Cancer Res. Ctr.*

**B251 798.21** Engineering Starch Kinases for Increased Biofuel Production Efficiency. A. Rondon, S. Emanuelle, *Univ. of Kentucky*

**B252 798.22** Computational Design and Molecular Mechanism in Oligomerization of C-Terminal Binding Protein 2. Y. Miyashita, N. Matsuo, Y. Yamamoto, S. Nakano, S. Ito, N. Numoto, T. Ikura, N. Ito, M. Sekiya, H. Shimano, H. Tokiwa, *Rikkyo Univ., Japan, Univ. of Shizuoka, Japan, Med. Res. Inst., Tokyo Med. and Dental Univ., Japan and Univ. of Tsukuba, Japan*

**B253 798.23** Computational Design and Simulation of a Cyclized Dimeric Multipass Transmembrane Protein. J.A. Aldana-Mendoza, W.A. DeGrado, *California State Univ., Los Angeles, Univ. of California and San Francisco*

**B254 798.24** Computational Insights into the Structure and Epitope Locations for Two Idiopathic Membranous Nephropathy Antigens: Phospholipase A<sub>2</sub> Receptor and the Thrombospondin Type-I Containing Domain 7a and Design of Antigen Binding Proteins. S. Stoddard, *Rhodes Col.*

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## Protein-Small Molecule Interactions

**B255 799.1** ATP as an Allosteric Modulator and Chelator of Fe<sup>3+</sup> from Fe<sup>3+</sup>-Transferrin Is ATP a Major Fe<sup>3+</sup> Carrier. R.E. Cowart, T.B. Shaffer, R.D. O'Hara, J.A. Campbell, L.L. Schneider-Tugan, S.K. Binz, M.A. Pope, R.B. Gregory, *Univ. of Dubuque and Lindenwood Univ.*

**B256 799.2** Utilization of Multiple Lipid Sources in the Production of Biodiesel by Using Lipase Nanoparticles from *Candida Rugosa* in a Nonaqueous System. H.A. Rivera, *Universidad de Puerto Rico and Rio Piedras Campus*

**B257 799.3** Identification of the Substitutes on  $\alpha$ -(N)-Heterocyclic Thiosemicarbazones That Interact with Human Topoisomerase-II- $\alpha$  with Nuclear Magnetic Resonance. J. Hill, J. Conner, N. Combs, S. Bowman, W. Carroll, E. Lisic, X. Jiang, *Tennessee Tech. Univ.*

**B258 799.4** Exploring Binding Determinants of (S)-Allantoin with Proteins via Docking and Molecular Modelling. M.E. Reeves, M.M. Allard, M.A. Payne, *La Sierra Univ.*

**B259 799.5** Computational Design of a Mimic Against Neurodegenerative Diseases Based on Vegf-D. C. Mason, N. Bibi, M. Zahran, *New York City Col. of Technology and City Univ. of New York*

**B260 799.6** Biophysical Investigation of Gastro-intestinal Fatty Acid Binding Proteins (FABPs) with Fatty Acid Ethanolamides (FAEs). M.P. Lai, F. Katz, R.E. Stark, *City Col. of New York*

**B261 799.7** Differential Modulation of Microtubule Stability by Inhibitor-Bound Kinesin-5. C. Kim, E. Kim, L. Liu, E. Wojcik, *Louisiana State Univ. Sch. of Med. and Health Sciences Ctr.*

**B262 799.8** Hypoxia-Selective Allosteric Destabilization and Degradation of a Receptor Protein Kinase: Potential Prophylaxis by H-Saad/Ds. J.C. Groppe, G. Lu, M.R. Tandang-Silvas, A. Dawson, T. Dawson, *Texas A&M Col. of Dentistry*

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### Bioanalytical and Biophysical Methods

**B263 800.1** Development of Methodology for the Analysis of Novel Compound Rpm. A. Fraser, E.S. P. Reddy, A. Basu Sarkar, *Univ. of Findlay, Morehouse Sch. of Med. and Univ. of Findlay Col. of Pharmacy*

**B264 800.2** Physico-Chemical Characterization of Novel Compound Rmbr. C. Higley, A. Basu Sarkar, E.S. P. Reddy, *Univ. of Findlay, Univ. of Findlay Col. of Pharmacy and Morehouse Sch. of Med.*

**B265 800.3** Development of Bio-Analytical Methodology and Physico-Chemical Characterization of Novel Compound Red. A. Basu Sarkar, M. Blanco, E.S. P. Reddy, *Univ. of Findlay Col. of Pharmacy, Univ. of Findlay and Morehouse Sch. of Med.*

**B266 800.4** DNA-Based Molecular Tools for Monitoring Cellular Activity. O. Söderberg, *Uppsala Univ., Sweden*

**B267 800.5** Identifying Substandard Medications in Developing Nations. E. Omanovich, J. Donels, J. Trier, A. Thomsen, J. Dollen, A. Miller, N. Memic, C. Zea, *Grand View Univ.*

**B268 800.6** Towards a Point-of-Care Test for Bacterial Vaginosis: Design and Development of a Rapid Test for Vaginolysin. D.C. Pawley, E. Dikici, S. Deo, M. Fischl, S. Daunert, *Univ. of Miami*

**B269 800.7** Development of an Immersion Model for Tooth Decay Observed via Scanning Electron Microscopy, Atomic Force Microscopy and Flame Atomic Absorption Spectroscopy. R.D. Shipman, B.G. Quelle, J.E. Grant, E. J. Lee, *Univ. of Wisconsin-Stout*

**B270 800.8** Determination of Iron in Biological Samples Using Sector-Field vs. Quadrupole Inductively Coupled Plasma Mass Spectrometry. H.A. AL-Ogaidei, M.E. Ketterer, E.J. Ragan, *Metropolitan State Univ. of Denver*

**B271 800.9** Fast and Accurate Evaluation of Oxidation-Induced Destabilization of Mabs. P. Piatti, M. Mohamadi, N. Tschammer, D. Breitsprecher, P.A. Fung, *Nanotemper Technologies Inc., NanoTemper Technologies and GmbH, Germany*

**B272 800.1** Basal Serum Oxytocin Levels in Healthy Non-Pregnant/Lactating Humans Are Below 10 Pg/ml and Not Detectable by Traditional Orbitrap Lcms. A.A. Franke, X. Li, A. Menden, J.F. Lai, *Univ. of Hawaii Cancer Ctr.*

**B273 800.11** Validation of Nucleocounter, an Automated Cell Counter. J. Saini, J.J. Kim, L.A. Preston, S.L. Riley, L.J. Ashley, L.K. Landeen, *Vital Therapies and Inc.*

**B274 800.12** Rapid Prototyping of Microfluidic Conductivity Detectors via Extrusion-Based 3D Printing. B. Strong, S. Prabhu, A. Jangid, B. Liu, N. Martinez, *California Polytechnic State Univ.*

**B275 800.13** Analysis of Ramachandran Outlier Prevalence for X-Ray Crystallographic Model Structure Validation. D.A. Vavrinak, C. Weiss, *Wabash Col.*

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### Nanotechnology

**B276 801.1** The Hybrid Plga-Based Nanoparticles as a Smart Nanopatform for Imaging-Guided and Near-Infrared Light-Triggered Combination Cancer Therapy. X. Shen, X. Xie, H. Yang, C. Wu, Y. Liu, *Dept. of Biophysics, Sch. of Life Science and Technology and Univ. of Electronic Science and Technology, People's Republic of China*

**B277 801.2** Cooperative Treatment of Breast Cancer Using an Irinotecan/ir-820 Co-Loaded Hollow Mesoporous Silica Nanoparticles Nanopatform. T. Li, Y. Geng, Z. Chen, H. Yang, C. Wu, Y. Liu, *Dept. of Biophysics, Sch. of Life Science and Technology and Univ. of Electronic Science and Technology, People's Republic of China*

**B278 801.3** Light Controlled Intracellular Protein Release: Tracking Ras Interactions with Superresolution Fluorescence Microscopy. J. Yun, C. Phelps, D. Morales, X. Nan, N. Reich, *Univ. of California, Santa Barbara and Oregon Health & Science Univ.*

**B279 801.4** Imaging Exosomes Using Super Resolution Microscopy. C. Chen, S. Zong, Z. Wang, Y. Cui, *Advanced Photonics Ctr. and Southeast Univ., People's Republic of China*

**B280 801.5** Creation and Characterization of Gold-Nanoparticle Containing Conductive Scaffolds for Culturing Cardiomyocytes. M. Maldonado, B. Pena Castellanos, A.J. Bonham, D. W. Park, *Metropolitan State Univ. of Denver and Univ. of Colorado Anschutz Med. Campus*

**B281 801.6** Inhibition of Mitochondrial Respiration by Amino-Functionalized Gold Nanoparticles in Acute Myeloid Leukemia Cells. A-K. Gaiser, T. Syrovets, S. Hafner, M. Schmich, P. Schäfer, E. Calzia, T. Simmet, *Ulm Univ., Germany*

**B282 801.7** Towards Independent Cellular Release of a Multi-Biomolecule System Using Gold Nanorods: Simultaneous Up and Down Regulation of Cellular Pathways with Light Control. S. Grossman, E. Morgan, N. Reich, *Univ. of California and Santa Barbara*

**B283 801.8** Delivery of Interference RNA Molecules to Ovarian Cancer Cells Using Gold-Liposome Nanoparticle Conjugates. B.I. Quiñones-Díaz, N. Grafals-Ruiz, G.L. Barletta-Bonanno, P.E. Vivas-Mejía, *Univ. of Puerto Rico, Med. Sciences Campus, Puerto Rico, Univ. of Puerto Rico and Humacao Campus, Puerto Rico*

**B284 801.9** Cryogenic Grinding and 3D Printing Techniques for Establishing "Disperse and Absorb" Brick-Type Constructs of Food Materials. J-K. Rhee, *Ewha Womans Univ., Republic of Korea*

**B285 801.1** Nano-Targeted Kinase Inhibitor Treatment of Kras Mutant Lung Cancer. R. Sridharan, J. Shah, Y. Shamay, D. Heller, *Weill Cornell Med., Cornell Univ. and Memorial Sloan Kettering Cancer Ctr.*

**B286 801.11** Large Gold Nanorods Affect Glutathione but Not K<sup>+</sup> Metabolism in Human Red Blood Cells. P.K. Alla, N.C. Ihezurike, P.K. Lauf, A. de la Zerda, E.D. SoRelle, I.E. Pavel-Sizemore, J.C. Yaklic, N.C. Adragna, *Wright State Univ. and Stanford Univ.*

**B287 801.12** Development of Polymeric Nanovehicles for Sirna Delivery in Cardiomyocytes. A. Lázaro-Alfaro, O. Lozano-García, G. García-Rivas, *Cátedra de Cardiología y Medicina Vascular, Escuela de Medicina y Tecnológico de, Mexico*

**B288 801.13** A Delivery Method for Poly-histidine Tagged Proteins and Peptides for Transient Protein Expression with Light Control via Hollow Gold Nanoshells: Successful delivery of CRISPR Cas9 and Apoptotic Peptide NuBCP with NIR light control. E. Morgan, P. Jain, M. Pearce, S. Bhatia, S. Kolluri, N. Reich, *Univ. of California, Santa Barbara, Massachusetts Inst. of Technology and Oregon State Univ.*

## Proteomics

**B289 802.1** High Throughput Proteomic Applications Using Anti-DykdoddK Magnetic Agarose. B. Benton, J. Geddes, K. Vattam, B. Patel, B. Kaboord, Thermo Fisher Scientific

**B290 802.2** Candidate Urine Biomarker Discovery from Only Five Pairs of Samples Before and After Tumor Resection in Glioma Patients. J. Wu, J. Zhang, Y. Zhao, Y. Gao, Chinese Academy of Med. Sciences and Peking Union Med. Col., People's Republic of China, Dept. of Neurosurgery, Peking Univ. InterNat'l. Hosp., Peking Univ., People's Republic of China, Dept. of Neurosurgery, Beijing Tian Tan Hosp., Capital Med. Univ., People's Republic of China, Dept. of Biochemistry and Molecular Biology, Sch. of Life Sciences and Beijing Normal Univ., People's Republic of China

**B291 802.3** Changes of Urinary Proteins in Ddc-Induced Chronic Pancreatitis Rat Model. L. Zhang, Y. Gao, Beijing Normal Univ., People's Republic of China

**B292 802.4** Cerebrospinal Fluid Proteomics for Identification of Potential Biomarkers to Monitor Pharmacological Therapeutic Efficacy in Dopamine Dictated Disease States of Parkinson's Disease and Schizophrenia. G. Hariprasad, A.K. Gupta, R.K. Pokhriyal, M.I. Khan, D.R. Kumar, V. Goyal, R.K. Chadda, R. Ramachandran, All India Inst. of Med. Sciences, India

**B293 802.5** An Aptamer-Based Approach to Assess the Human Plasma Proteome for Pre-Analytical Variability. J.R. Daniels, Z. Cao, M. Maisha, L.K. Schnackenberg, J. Sun, L. Pence, T.C. Schmitt, B. Kamlage, R.D. Beger, L.-R. Yu, Nat'l. Ctr. for Toxicological Res., U.S. Food and Drug Administration and Metanomics Health GmbH, Germany

**B294 802.6** Tracking Protein Expression, Post-Translational Modifications and Interactions with High Content Antibody Microarrays. S. Pelech, L. Yue, Kinexus Bioinformatics Corporation, Canada and Univ. of British Columbia, Canada

**B295 802.7** Altered Protein Expression of Primary Sea Turtle Cells Exposed to Contaminants Indicates the Potential for *in Vitro* Proteomics as a High Throughput Tool to Support Biomarker Discovery in Threatened Wildlife. S. Chaousis, F.D. I. Leusch, A. Nouwens, J. van de Merwe, Griffith Univ., Australia and The Univ. of Queensland, Australia

**B296 802.8** Expression of Plasmodium Falciparum Glutamic Acid-Rich Protein (PfGarp) in Recombinant *Pichia Pastoris* for Malaria Vaccine Development. A.E. Martínez-Muñoz, Univ. of Puerto Rico at Mayagüez, Puerto Rico

**B297 802.9** Mass Spectrometry of Single Mammalian Cells Quantifies Proteome Heterogeneity During Cell Differentiation. E. Levy, B. Budnik, N. Slavov, Northeastern Univ. and Harvard Univ.

**B298 802.1** ITRAQ-Based Proteomics Analysis of Colon Mucosal Proteins in a Dextran Sulfate Sodium (DSS)-Induced Colitis Mouse Model and the Effects of Dietary Treatments with Edible Mushroom *Pleurotus Eryngii*. B. Yuan, X. Xu, Y. Han, X. Cao, Q. Hu, X. Hang, China Pharmaceutical Univ., People's Republic of China, Nanjing Agricultural Univ., People's Republic of China and Univ. of Massachusetts Amherst

**B299 802.11** Liver Protein Comparisons of Warm-Adapted Versus Cold-Adapted Populations of Threespine Sticklebacks (*Gasterosteus Aculeatus*). B.B. Levitan, S. Gómez-Jiménez, J. Li, D. Kultz, Univ. of California, Davis and Centro de Investigación en Alimentación y Desarrollo (CIAD), Mexico

**B300 802.12** Validation of *in Vivo* Protein Surface Accessibility Method. M. Ma, Univ. of California and Berkeley

**B301 802.13** High Sensitivity Top-Down Proteomics: Coomassie for In-Gel Proteoform Detection Rivals Ms-Based Peptide Detection. N. Noaman, P.S. Abbineni, M. Withers, J.R. Coorssen, Western Sydney Univ., Australia, Univ. of Michigan Med. Sch. and Brock Univ., Canada

**B302 802.14** Differentially Expressed Proteins Are Caused by Increased Chemokine Ligand 2 in Mice Hippocampi After Alcohol Treatment. R. Cook, J. Lawrence, J. Bray, Univ. of Wisconsin-Stevens Point

**B303 802.15** Considerations for Western Blot Normalization Techniques. K. Oh, E.J. Dreskin, N. Liu, M. Hammond, F. Kollmann, A. Posch, Bio-Rad Laboratories and Inc.

**B304 802.16** A Bioinformatics Approach to Discover the Evolutionary Origin of the Ptpb Splicing Regulators. J. Pina, R.J. Ontiveros, N. Keppetipola, N. Nikolaidis, California State Univ., Fullerton and Univ. of Pennsylvania

## Systems Biology and Regulatory Networks

**B305 803.1** Focal and Diffuse Impacts of Mild vs. Moderate Traumatic Brain Injury (Tbi): Temporal Assay of Hippocampal and Cerebellar Transcriptomics. N. Chakraborty, R. Hammamieh, A. Gautam, S.A. Miller, M. Condlin, M. Jett, A. Loban, A. Scrimgeour, The Geneva Foundation, U.S. Army Ctr. for Environmental Health Res. and U.S. Army Res. Inst. of Environmental Med.

**B306 803.2** Bacterial Viruses Organize Subcellular Environments to Mediate Heterogeneous Development. J.T. Trinh, L. Zeng, Texas A&M Univ.

**B307 803.3** Copper Distribution Networks in *Pseudomonas Aeruginosa*. J. Arguello, J. Quintana, L. Novoa-Aponte, Worcester Polytechnic Inst.

**B308 803.4** The Cytoplasmic Cu<sup>+</sup>-Chaperones of *Pseudomonas Aeruginosa*. L. Novoa-Aponte, J.M. Arguello, Worcester Polytechnic Inst.

**B309 803.5** Signed Differential Co-Expression Network Analysis Suggests Differential Regulation of Sp/Klf Family of Transcription Factors in Dilated Cardiomyopathy. K. Mukund, S. Subramaniam, UCSD

**B310 803.6** Integrated Therapeutic Dynamics by Applications of Multi-Mathematical Functions in Multiple Degenerative Chronic Physiological Processes. A Case Study. G.P. Einstein, O.L. Tulp, C.M. Konyk, N.P. Kealoha, Einstein Med. Inst., Univ. of Science and Arts and Technology Montserrat, Montserrat

**B311 803.7** Integrative Analysis of Sex Differences in Adipose Tissue Gene Expression. W. Anderson, M. Guertin, M. Civelek, Univ. of Virginia

**B312 803.8** Can We Capture an Accurate View of Tissue Metabolism from an Expression Profile? N. Lewis, UCSD

**B313 803.9** Nano-Biomaterial and Functional Genomics Research. R. B.S. M. N. Mydin, Advanced Med. and Dental Inst. and Universiti Sains Malaysia, Malaysia

**B314 803.1** Royal Road Functions in Evolutionary Computations and Modular Organization of a Gene: Applications to Directed and Molecular Evolution. A.V. Spirov, I. M. Sechenov Inst. of Evolutionary Physiology and Biochemistry Russian Academy of Sciences, Russian Federation

## Cancer Signaling and Therapeutics

**B315 804.1** He4 Promotes Events Associated with Metastatic Ovarian Cancer via Regulation of the Extracellular Matrix. H. Gaudet, J. Ribeiro, M. Khan, C. Schorl, N. James, M. Oliver, R. Singh, P. DiSilvestro, R. Moore, N. Yano, Wheaton Col., Women & Infants Hosp. of Rhode Island, Brown Univ., Univ. of Rhode Island and Univ. of Rochester Med. Ctr.

**B316 804.2** Targeting the Myristoylation of Frs2 $\alpha$  Inhibits Fgf/fgfrs-Mediated Oncogenic Signaling and Tumor Progression. H. Cai, Q. Li, Univ. of Georgia

**B317 804.3** The Role of the Vacuolar (H<sup>+</sup>)-ATPase in Neuroblastoma Cell Differentiation Induced by MicroRNA 506-3p. G. Medrano, Z. Zhao, L. Du, Texas State Univ.

**B318 804.4** The Combined Effect of Canagliflozin and Metformin in Human Prostate Cancer Cells. K. Ware, L. Stewart, Tennessee State Univ. and Meharry Med. Col.

**B319 804.5** Effects of Vorinostat, Letrozole and Rg7388 Treatments on Cell Cycle Arrest and Survival of Breast and Prostate Cancer Cells. U. Natarajan, T. Venkatesan, S. Dhandayuthapani, T. Kanagasabai, S.S. Samuel, V. Radhakrishnan, A. Rathinavelu, VRR Inst. of BioMed. Science, India and Nova Southeastern Univ.

**B320 804.6** Knockdown of Tm9sf4 Triggering Er Stress Exerts Anti-Growth Effect on Drug-Resistant Breast Cancer Cells. Y. Zhu, X. Yao, *The Chinese Univ. of Hong Kong, Hong Kong*

**B321 804.7** Small Molecule Targeting of Cd73 Offers Better Selective Strategy Than Targeting Cd39 in Counteracting Tumor Mediated Immunosuppression by Adenosine. S. Goueli, K. Hsiao, *Promega Corporation*

**B322 804.8** Ascites Tumor Microenvironment and Chemoresistance in Ovarian Cancer. S. Kim, *Seoul Nat'l. Univ. Hosp., Republic of Korea*

**B323 804.9** The Effect of Resveratrol in the Proliferation and Autophagy of Breast Cancer Cell Lines. M. Martinez Casillas, K. Munoz Forti, J. Robles Rivera, G. Trossi Torres, E. Suarez Martinez, A. Ruiz Rivera, *Univ. of Puerto Rico at Ponce, Puerto Rico, Pontifical Catholic Univ. of Puerto Rico, Puerto Rico and Univ. of Puerto Rico at Mayagüez, Puerto Rico*

**B324 804.1** Antiproliferative Effects of Soy Derived Dipeptides in Human Breast Cancer Cell Lines. S.K. Das, P. Mitra, M. Maebuchi, S. Mukherjee, *Meharry Med. Col. and Fuji Oil Company, Japan*

**B325 804.11** A Genome-Wide Crispr-Cas9 Screen Identifies Importin- $\beta$ 11 as a Required Factor for  $\beta$ -Catenin Signaling in Colon Cancer. M. Mis, Z. Steinhart, S. Angers, *Univ. of Toronto, Canada*

**B326 804.12** Microrna-203 Regulates Cell Junction and Adhesion Proteins by Modulating Zeb1/vimentin Axis in Breast Cancer Cells After Parp1 Inhibition. N. Shukla, J. Rajawat, D.P. Mishra, *CSIR-Central Drug Res. Inst., India*

**B327 804.13** Cell Surface Grp78 Activation by Anti-Grp78 Autoantibodies in Relation to Prostate Tumour Growth via Tissue Factor Activation. A. Al-Hashimi, B. Shayegan, R. Austin, *McMaster Univ.*

**B328 804.14** Novel Rac Inhibitors as Targeted Therapeutics for Metastatic Breast Cancer. G. Asencio-Torres, E. Hernández, C. Vlaar, S. Dharmawardhane, L. Castillo-Pichardo, *Universidad Central del Caribe, Univ. of Puerto Rico and Med. Sciences Campus, Puerto Rico*

**B329 804.15** Foxa2 Promotes Prostate Cancer Bone Colonization. Z.M. Connelly, S. Yang, A.W. Orr, X. Yu, *Louisiana State Univ. Health Sciences Ctr.-Shreveport*

**B330 804.16** Rxra Is a Direct Target Gene of Mir-506-3p That Regulates Oncogene mycn Expression and Cell Differentiation in Neuroblastoma. S.D. Shelton, Z. Zhao, L. Du, *Texas State Univ.*

**B331 804.17** 27-Hydroxycholesterol Decreases Cell Proliferation in Colon Cancer Cells. J.A. Warns, N. Freking, O. Ghribi, *Univ. of North Dakota*

**B332 804.18** Paper-Based Breast Tumor Model Reveals New Insights into the Hypoxic Regulation of Estrogen Receptor Alpha. N. Whitman, Z.-W. Lin, R. Kenney, M.R. Lockett, *Univ. of North Carolina at Chapel Hill*

**B333 804.19** Regulation of Extracellular IGFBP-3 by Humanin in A549 Cells. R.D. Mutterspaugh, D. Price, J. Guthrie, D. Heyl, H. Evans, *Eastern Michigan Univ.*

**B334 804.2** Mechanosensitivity Analysis of Breast Cancer Tumor Cells from Needle Biopsy. S. Acero Bedoya, D. Ghosh, M. Dawson, *Brown Univ.*

**B335 804.21** Expression and Regulation of CHP and NHE in Cancer. C. Bakker, M. Wallert, J. Provost, *Univ. of San Diego and Bemidji State Univ.*

**B336 804.22** Investigation of Domain Responsible for Calcineurin B Homologous Protein (CHP) Isoform Specific Function. S. Davis, M. Wallert, J. Provost, *Univ. of San Diego and Bemidji State Univ.*

**B337 804.23** Inhibition of Endothelial Scube2, a Novel VEGFR2 Co-Receptor, Suppresses Tumor Angiogenesis. Y.-C. Lin, C.-Y. Liu, R. Kannagi, R.-B. Yang, *Academia Sinica, Taiwan and Taipei Veterans General Hosp., Taiwan*

**B338 804.24** Role of mTorc2 and Nitric Oxide in Bladder Cancer Invasion. D. Sahu, R. Klemke, G.R. Boss, D.E. Hansel, *UCSD*

**B339 804.25** The Impact of PLGA Nanoparticle Delivered 3-Bromopyruvate and SC-514 on ABC Transporter Mediated Multidrug Resistance in Prostate Cancer Treatment. T.O. Famuyiwa, *Florida Atlantic Univ.*

**B340 804.26** DDX53/miRNAs Network Regulates Stemness and Anti-Cancer Drug Resistance by Activating Autophagy in Cancer Stem Cells. Y. Kim, S. T. Park, J. J. Lee, *Hallym Univ., Republic of Korea, Hallym Univ. Kangnam Sacred Heart Hosp., Republic of Korea and Hallym Univ. Chuncheon Sacred Heart Hosp., Republic of Korea*

**B341 804.27** Receptor Tyrosine Kinase Signalling in the Absence of Kinase Activity and Cancer of Non-Genetic Origin. J. Ladbury, *Univ. of Leeds, United Kingdom*

**B342 804.28** Effects of Botanicals and Purified Phenolic Compounds on NFkB Pathway in Cultured Human Skin Keratinocytes and Fibroblasts. J.L. Higgins, A. Kraus, M. Clark, B. Gallant, D. Arruda, C. McTigue, H. Ma, N.P. Seeram, H. Guo, H.-D. Chen, Y. Cui, Y. Wan, *Providence Col., Univ. of Rhode Island, China Med. Univ., People's Republic of China and Northwestern Univ.*

**B343 804.29** HSP60 Is a Novel Target in Lethal Prostate Cancer. J. O'Malley, C. Donnelly, J. Inigo, R. Kumar, D. Chandra, *Roswell Park Cancer Inst., Univ. at Buffalo and State Univ. of New York*

**B344 804.3** Development of Hydrolytically Activated, Oxygen-Generating Biomaterials to Enhance Drug Efficacy on Cultured Ovarian Cancer Cells. M.P. Clark, A. Kraus, J. Higgins, B. Gallant, D. Arruda, C. McTigue, X. Li, H. Guo, H. Chen, Y. Cui, W. Di, Y. Wan, *Providence Col., Brown Univ., China Med. Univ., People's Republic of China, Northwestern Univ. and Shanghai Jiao Tong Univ., People's Republic of China*

**B345 804.31** Identification of Fzd5 as Genetic Vulnerability in Rnf43 Mutant Cancer. Z. Steinhart, Z. Pavlovic, M. Chandrashekar, K. Mascal, T. Hart, X. Wang, X. Zhang, K.R. Brown, J. Adams, J. Pan, S. Sidhu, J. Moffat, S. Angers, *Univ. of Toronto, Canada and The Univ. of Texas MD Anderson Cancer Ctr.*

**B346 804.32** Cytotoxic Mechanism of Long-Chain Lipids Extracted from Mexican Native Avocado Seed (*Persea Americana* Var. *Drymifolia*) on Colon Cancer Cells. M. Lara-Márquez, P.A. Spagnuolo, R. Salgado-Garciglia, A. Ochoa-Zarzosa, J.E. López-Meza, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico and Univ. of Guelph, Canada*

**B347 804.33** Defensin  $\gamma$ -Thionin from *Capsicum Chinense* Induces Apoptosis in the Human Breast Cancer Cell Line MCF-7 and Regulate Histone H3 Epigenetic Modifications. M.T. Arceo-Martinez, J. Guzmán-Rodríguez, Z. Palomera-Sánchez, A. Ochoa-Zarzosa, J.E. López-Meza, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico*

**B348 804.34** Elucidating Interactions Between Zebrafish Innate Immune System and Cancer Progression. M. Lou, D. Powell, A. Huttenlocher, *Univ. of Wisconsin-Madison*

**B349 804.35** Growth Inhibition of Breast Cancer by Two Flexible Heteroarotinoid Enantiomers. E. Ginn, J. Baek, H. Zou, M.M. J. Fallatah, E. Cayton, S. Liu, M. Louie, *Dominican Univ. of California and Touro Univ.-California*

**B350 804.36** Foxo Transcription Factors Rewire Metabolism in U87mg Glioblastoma Cells. M. Keniry, V. Fanniel, E. Martinez, L. Sanchez, N. Vazquez, A. Lopez, R. Cedillo, C. Respondek, R. Gilkerson, W. Innis-Whitehouse, E. Scheunzel, *The Univ. of Texas Rio Grande Valley*

**B351 804.37** Real Time Pcr Analysis of Ewing's Sarcoma Cell Lines in Response to Chemotherapeutic Treatment. S. Pitzen, A. Kruchten, *The Col. of St. Scholastica*

**B352 804.38** Proteomic Signature of Pdac Cells with Mutant P53. M. Manfredi, G. Butera, A. Buzzi, J. Brandi, D. Cecconi, E. Marengo, M. Donadelli, *Univ. of Piemonte Orientale, Italy and Univ. of Verona, Italy*

**B353 804.39** Inhibitory Activity of the Chloroform Extract of *Ficus Benjaminia* Leaf on Multiple Myeloma Cell Lines. F.A. Obafemi, E. Bonsu, O. Erharuyi, S. Simanski, *Univ. of Abuja, Nigeria, Bowie State Univ., Univ. of Benin, Nigeria and Scripps Res. Inst.*

**B354 804.4** Targeting N-Myristoyltransferase I Inhibits Prostate Cancer Progression. O.A. Alsaidan, S. Kim, Q. Li, A. Bielawska, H. Cai, *Univ. of Georgia and Med. Univ. of South Carolina*

**B355 804.41** Investigate Kentucky Hemp-Induced Modulation of Interleukin-1  $\beta$  Secretion in Ovarian Cancer Cells. C. Turner, C. Kenley, T. Jent, N. Vu, N. Hughes, W.K. Sumanasekera, *Sullivan Univ. Col. of Pharmacy*

**B356 804.42** Induction of DNA Damage in Ovarian Cancer Induces Type I Interferon Signaling. D.E. Bolland, Y. S. Tan, Y. Hao, K.E. Hacker, L. Tan, Y. Xie, Y. Lei, K. McLean, *Univ. of Michigan and Michigan State Univ.*

**B357 804.43** Quantifying Hnf1a Regulated Gene Expression in Pancreatic Cancer. A.A. Alaniz, E.V. Abel, D.M. Simeone, *The Univ. of Texas at Austin, Univ. of Michigan Health System, Pancreatic Cancer Ctr. and NYU Langone Health*

**B358 804.44** The Role of Sphingosine Kinase 2 in Promoting Multiple Myeloma Cell Invasive Growth. H. Zhang, D. Zhao, X. Li, R. Liu, X. Wang, H. Zhou, *Virginia Commonwealth Univ.*

**B359 804.45** Can Less Be More: Evaluating the Synergistic Relationship Between Chemotherapy Agents and Nhe1 Inhibitors in Ovarian Cancer Cells. A.C. Larson, J.J. Provost, M. Wallert, *Bemidji State Univ. and Univ. of San Diego*

**B360 804.46** Evaluating the Role of the Na<sup>+</sup>-H<sup>+</sup> Exchanger Isoform 1 (Nhe1) in Non-Small Cell Lung Cancer. A.J. Kooiker, J.J. Provost, M. Wallert, *Bemidji State Univ. and Univ. of San Diego*

**B361 804.47** Investigating the Potential for Na<sup>+</sup>-H<sup>+</sup> Exchanger Isoform 1 (Nhe1) Inhibitors as Adjuvant Therapies in the Treatment of Ovarian Cancer. A.R. Corradi, J.J. Provost, M. Wallert, *Bemidji State Univ. and Univ. of San Diego*

**B362 804.48** Evaluating the Role of the Na<sup>+</sup>-H<sup>+</sup> Exchanger Isoform 1 (Nhe1) in Lysophosphatidic Acid and Urokinase-Type Plasminogen Activator Stimulation of Ovarian Cancer Cells. A.A. Stiglich, J.J. Provost, M. Wallert, *Bemidji State Univ. and Univ. of San Diego*

**B363 804.49** Effect of Low pH Treatment on Cell Cycle and Cell Growth. Y. Hu, Y. Li, *Ohio Univ.*

**B364 804.5** Evaluating the Inhibition of Palmitoylation and Nhe1 on Cell Proliferation and Migration. S.A. Hanowski, J.J. Provost, M. Wallert, *Bemidji State Univ. and Univ. of San Diego*

**B365 804.51** Differential Impacts of Hypoxia on Na<sup>+</sup>/H<sup>+</sup> Exchanger Isoform 1 and Calcineurin B Homologous Protein Isoform 2 Expression in Non-Small Cell Lung Cancer. C.H. Wallert, J.J. Provost, M. Wallert, *Bemidji State Univ. and Univ. of San Diego*

**B366 804.52** The Role of Hsf2 in Human Malignancies. S. Takagishi, K. Metz, Y. Wu, M. Alasady, M. Mendillo, *Northwestern Univ. Feinberg Sch. of Med.*

**B367 804.53** Immunohistochemical Study of the Epithelial-to-Mesenchymal Transition Phenotype in Non-Small Cell Lung Cancer. X.L. Rodriguez-Lopez, J. Perez-Morales, P. Santiago-Cardona, *Univ. of Puerto Rico at Ponce, Puerto Rico, Ponce Health Sciences Univ. Res. Inst., Puerto Rico and Ponce Health Sciences Univ., Puerto Rico*

**B368 804.54** Characterization of Patient-Derived Glioblastoma Stem Cells for Marker Expression, Motility, and Invasiveness. K. Plusch, A. Stubbolo, C. Bernheimer, D.S. Galileo, *Univ. of Delaware*

**B369 804.55** Endothelial-Derived Extracellular Vesicles Induce Proliferation in Glioblastoma Cells. Z.R. Zimmerman, M.R. Dores, *Hofstra Univ.*

**B370 804.56** Evidence of Natural Transcriptome Regulation by Cinnamon Extract Identified by Changes in Akt1 mRNA Levels of MCF-7 Breast Cancer Cells. M. Hill, S. Hall, S. Almeahadi, Z. Lin, A. Aulthouse, D. Kinder, A. Stockert, *Ohio Northern Univ.*

**B371 804.57** Overexpression of Insulin-Like Growth Factor Binding Protein 1 (Igfbp1) Generates Tamoxifen Resistance in Breast Cancer Cells. J. Kietlyka, Y. Zheng, A. Hobbs, K.D. Houston, *New Mexico State Univ.*

**B372 804.58** Mechanism of Action of the Vascular Disrupting Agent Oxi8006 on Activated Endothelial Cell Signaling. E.A. Taylor, S.O. Odutola, T.E. Strecker, M.M. Hayashi, M.T. MacDonough, K.G. Pinney, M.L. Trawick, *Baylor Univ.*

**B373 804.59** S100a7 Regulates Mir-21 and Mir-29b in Oral Squamous Cell Carcinoma. N.H.T. Ly, J.K. Pizarro, S.J. Wang, M.E. Mercado-Pimentel, *Univ. of Arizona*

**B374 804.6** The Aggressive Nature of Prostate Cancer of African Americans Is Correlated with Massive Down-Regulation of Many Immunoregulatory Genes of Microenvironment. F. Rahmatpanah, X. Zi, A. Sawyers, A. Agrawal, M. Lilly, M. McClelland, D. Mercola, *Univ. of California, Irvine and Med. Univ. of South Carolina*

**B375 804.61** Polyphenol E Treatment Alters Gene Expression in Prostate Cancer Cells. D.E. Hoffman, K.Y. Gandy, J.Y. Park, L.M. Carastro, *Univ. of Tampa and Moffitt Cancer Ctr.*

**B376 804.62** A Light Inducible Gene Activation System Toward Controllable Cell-Based Therapeutics. Z. Huang, Y. Wu, Y. Pan, M. Allen, Y.-J. Chang, S. Chien, Y. Wang, *UCSD*

**B377 805.1** Calcitriol Increases Leptin Expression in Neuronal Cells — Implications for Alzheimer's Disease. G. Marwarha, O. Ghribi, *Univ. of North Dakota Sch. of Med. and Health Sciences*

**B378 805.2** Suppression and Inhibition of Acetylcholinesterase (Ache) Gene Expression and Adenosine Deaminase (Ada) Respectively in Cadmium Treated Rats by Curcumin Administration. A.O. Fadaka, A.J. Akinyemi, O.B. Adewale, I.R. Olayide, A. Onikanni, O.A. Olaoye, P.O. Okoh, *Afe Babalola Univ., Nigeria*

**B379 805.3** Immunoregulatory Role of Melatonin in *Helicobacter Pylori*-Induced Gastric Diseases. L. Jianhua, Z. Hui, Z. Mi, S. Jun, L. Li, L. Dancen, L. Meifang, Z. Feng, L. Hui, Z. Ruixiang, *Fujian Med. Univ., People's Republic of China*

**B380 805.4** Copper Binding Regulates Cellular Prion Protein Function. X.T. A. Nguyen, H.T. Tran, D. Cojoc, G. Legname, *Scuola Internazionale Superiore di Studi Avanzati (SISSA), Italy, Inst. of Materials and Nat'l. Res. Council, Italy*

**B381 805.5** Spectral Sensitivity of Sensory Motor Integration of Gill Lateral Cell Cilia in the Bivalve Mollusc *Crassostrea Virginica*. R. Buchanan, J. Jean-Pierre, E.J. Catapane, M.A. Carroll, *Medgar Evers Col.*

**B382 805.6** Gene Expression in the Rat Thalamus Following Chronic Neuropathic Pain Development: mRNA Sequencing Analysis. J.L. Clifford, R. Kumar, S. Srinivasan, G. Dmitrov, A. Gautam, A. Walsh, E. Workman, R. Chavez, N. Sosanya, R.J. Christy, R. Hammamieh, *U.S. Army Ctr. for Environmental Health Res., Leidos: Advanced BioMed. Computing Ctr. and U.S. Army Inst. of Surgical Res.*

**B383 805.7** Using Human Cerebral Organoids to Study the Role of the Microbiome in Neuroinflammation. G. DiUbaldo, C. Toth, *Providence Col.*

**B384 805.8** An Investigation into the Microglial Response to Neonatal Zikv Infection. J. Lawrence, M.S. Parcells, J. Schwarz, *Univ. of Delaware*

**B385 805.9** Determining the Effects of Chronic Interferon Stimulation on Heme Oxygenase-1 in Human Monocyte Derived Macrophages. B. Cobo, R. Garza, D.L. Kolson, *Universidad de Puerto Rico, Rio Piedras Campus and Univ. of Pennsylvania*

**B386 805.1** Dmd-10 and Its Potential Effect on Regulation of the Glutamate Receptor GLR-1 in *C. Elegans*. L.R. Johnsky, A. McGehee, *Suffolk Univ.*

**B387 805.11** The Ketogenic Diet Attenuates Both Hyperactivity in mTor Pathway and Astroglialosis Through Regulation of AMPK Signaling in the Epileptic Brain. A. Singh, T. Mettler, H. Oh, D.-Y. Kim, *Barrow Neurological Inst. and St. Joseph's Hosp. and Med. Ctr.*

**B388 805.12** The Role of TDP-43 in the Pathogenesis of Frontotemporal Lobar Degeneration. K.-J. Tsai, *Nat'l. Cheng Kung Univ., Taiwan*

**B389 805.13** Gamma Secretase Activity Is Necessary for Bmp-7-Induced Dendritic Growth in Embryonic Sympathetic Neurons. R. Henley, K. Karunungan, P. Lein, V. Chandrasekaran, *Saint Mary's Col. of California, UC, Davis*

**B390 805.14** A Novel Single Molecule Assay Reveals the Deafness-Associated Protein Otoferlin as a Multivalent Calcium-Sensitive Scaffold Linking Snares and Calcium Channels. C.P. Johnson, N. Hams, *Oregon State Univ.*

## 805

### Neurobiology and Neuronal Signaling

**B391 805.15** Proof-of-Concept in a 3D Culture Model of Glioma Invasion: Towards Personalized Therapeutics in Brain Cancer. D.M. van Pel, C.C. Naus, W. C. Sin, *Univ. of British Columbia, Canada*

**B392 805.16** Learned Modulation of Innate Odor-Driven Behavior Requires the Orbitofrontal Cortex. K. Miyamoto, J. Victoriano, M. Kathrotia, C.M. Root, *UCSD*

**B393 805.17** Rgs4 Regulates Neurite Outgrowth and Cell Proliferation Mediated by Stat5b Transcriptional Responses. P. Pallaki, I. Serafimidis, E. Papadimitriou, M.P. Papakonstantinou, D. Thomaidou, M. Gaitanou, Z. Georgiou, *Nat'l. Centre of Scientific Res. "Demokritos", Greece, BioMed. Res. Foundation, Academy of Athens, Greece and Hellenic Pasteur Inst., Greece*

**B394 805.18** Comparative Analysis of Rora Expression in Brain Tissue from Multiple Sclerosis and Normal Individuals: A Pilot Study. S.C. Schroeder, L. Heath, *Webster Univ.*

**B395 805.19** Differential Expression of Piccolo Splice Isoforms During Cerebellar Development. S.D. Fenster, *Fort Lewis Col.*

**B396 805.2** 17 $\beta$ -Hydroxysteroid Dehydrogenases and Neurosteroid Metabolism in the Central Nervous System. S.-y. Yang, X.-Y. He, C. Dobkin, *New York State Inst. for Basic Res. in Developmental Disabilities*

**B397 805.21** Muscarinic Acetylcholine Type I Receptor Constrains Neurite Outgrowth by Inhibiting Microtubule Polymerization and Mitochondrial Trafficking in Adult Sensory Neurons: A Phenotype Rescued by Antagonist Treatment. M.G. Sabbir, N.A. Calcutt, P. Fernyhough, *Univ. of Manitoba, Canada, UCSD*

**B398 805.22** Mast Cell Proteases Activate Glia-Neurons and Release Interleukin-33 by Activating Mapks. K. Duraisamy, G.P. Selvakumar, R. Thangavel, M.E. Ahmed, S.P. Raikwar, S. Zaheer, S.S. Iyer, A. Zaheer, *Univ. of Missouri*

**B399 805.23** Increased Locomotor Activity Is Associated with Enhanced Tyrosine Hydroxylase Expression in Mice Expressing an Endothelial Cell-Specific Fibroblast Growth Factor I Transgene. D.J. Small, V. Eaton, W.Y. Koh, A. Langlais, I. Bergquist, D. Mokler, I. Prudovsky, *Univ. of New England and Maine Med. Ctr. Res. Inst.*

**B400 805.24** Role of N-Type Calcium Channels in Inflammatory Pain and Associated Sensory Nerve Growth. S. Pitake, S. Mishra, *North Carolina State Univ.*

**B401 805.25** Role of Circadian Deadenylase Nocturnin in the Mitochondria. A. Ojo, I. Laothamatas, C. Green, *St. Mary's Univ. and The Univ. of Texas Southwestern Med. Ctr.*

**B402 805.26** Cdk5: The Connection Between Alzheimer's Disease and Type 2 Diabetes?. K.E. Mora, A. Aguanno, *Marymount Manhattan Col.*

**B403 805.27** Immortalized Rat Neuronal Cell Line Shows Potential as an Improved Cell Model for Dopamine Transporter Research. G.H. Larson, D.J. Stanislawski, J.D. Foster, *Univ. of North Dakota*

**B404 805.28** Seasonal Changes in the Central Nervous System of the Arctic Ground Squirrel. C. Frare, E. Lokken, K. Drew, *Univ. of Alaska Fairbanks*

**B405 805.29** Neurochemical Pathways Involved in A<sub>1</sub> Adenosine Receptor Agonist-Induced Hibernation in the Arctic Ground Squirrel (*Urocyon parryi*). M. Jenkins, C. Frare, K. Drew, *Univ. of Alaska Fairbanks*

## 806

### Immunity

**B406 806.1** Developing an Intranasal Colonization Model for NTHi in Mice. M. O'Neil, C. LaClair, M. Zavorin, K. Pryharski, N. Khan, R. Kaur, M. Pichichero, L. Vacca Michel, *Rochester Inst. of Technology and Rochester General Hosp. Res. Inst.*

**B407 806.2** Mechanotransduction via Ha Lfa-1 Promotes Kindlin-3/rack1/oral1 Engagement to Mediate Calcium in Pmn. V.A. Morikis, S. Simon, *UC, Davis*

**B408 806.3** Structural Characterization of the TIL1381T Cell Receptor. L.M. Davancze, N.K. Singh, M.J. Anderson, F.A. Huyke, M.I. Nishimura, B.M. Baker, *Univ. of Notre Dame and Loyola Univ. Chicago*

**B409 806.4** Inhibition of Allergen-Mediated Mast Cell Activation by Rosemary Extract (*Rosmarinus officinalis* L.). M. Yousef, N.J. Hicks, T. Boyd, E. Tsiani, A.J. MacNeil, *Brock Univ., Canada*

**B410 806.5** Effect of Different Forms of Graphene on Activation of the Complement System as a Result of Contact with Human Serum Under in Vitro Conditions. D. Szukiewicz, I. Dudek, M. Skoda, Z. Wichrzycka, *Dept. of General & Experimental Pathology with CEPT Lab. and Med. Univ. of Warsaw, Poland*

**B411 806.6** Human Milk Exosomes Dampen Induced Inflammatory Response in Human Intestinal Epithelial Cells. J.D. Kraft, E. Ferretti, E. Tremblay, J.-F. Beaulieu, I. Altosaar, *Univ. of Ottawa, Canada, The Ottawa Hosp./Children's Hosp. of Eastern Ontario, Canada and Université de Sherbrooke, Canada*

**B412 806.7** Modulatory Role of Vitamin D in Stem Cell Factor-Mediated Mast Cell TNF Expression. A.R. R. Maguire, C.J. F. Watson, A.J. MacNeil, *Brock Univ., Canada*

**B413 806.8** Src Family Kinase Tyrosine Phosphorylates Toll-Like Receptor 4 to Dissociate Myd88 and Mal/tirap Suppressing Lps Induced Inflammatory Responses. S.H. Rhee, E. Im, J. Mitchell, S. J. Kim, *Oakland Univ. and Pusan Nat'l. Univ., Republic of Korea*

**B414 806.9** The Effects of Menkes Syndrome on the Immune System. M. Engelhart, J. Zhang, J. Gotschall, D. Huffman, K.R. Miller, *Univ. of Mount Union and Western Michigan Univ.*

**B415 806.1** Enhancement Natural Killer Cell Activity of Fucoidan in Lung Metastasis in Vivo Model. J. Kim, D. H. Kim, S.-H. Chun, H.-Y. Park, K.-W. Lee, *Korea Univ., Republic of Korea and Korea Food Res. Inst., Republic of Korea*

**B416 806.11** Discerning the Mechanism of HLA Expression by Epigenetic Modulators in Breast Cancer Cell Lines. N.T. Terrigino, R.E. Powers, R.W. O'Donnell, *State Univ. of New York Col. at Geneseo*

**B417 806.12** Disrupted Foxp3-Ezh2 Interaction Is a Molecular Feature of Impaired Regulatory T Cells. A.O. Bamidele, P. Svingen, M. Sagstetter, O. Sarmiento, M. Gonzalez, M. Braga Neto, S. Kugathasan, G. Lomberg, R. Urrutia, W. Faubion, *Mayo Clinic, Emory Univ. and Med. Col. of Wisconsin*

**B418 806.13** A Comparison of a Natural and Synthetic Stilbenoid, Arachadin-3, on a Rotavirus Infected Human Intestinal Cell Line. R. Napier-Jameson, C.M. Witcher, S.B. Wisdom, E.B. Strange, D.S. Triggs, L.L. Saade, J. Taylor, J.M. Ball, F. Medina-Bolivar, R.D. Parr, Stephen F. Austin State Univ., Ross Univ. Sch. of Veterinary Med., Saint Kitts and Nevis, Texas A&M Univ.-Commerce and Arkansas State Univ.

## 807

### Targeted Therapies and New Targets for Drug Discovery

**B419 807.1** Synthesis of an Ethyleneimine/tetrahedral DNA Nanostructure Complex and Its Potential Application as a Multi-Functional Delivery Vehicle. T. Tian, T. Zhang, T. Zhou, S. Lin, S. Shi, Y. Lin, *Sichuan Univ., People's Republic of China*

**B420 807.2** Rasg12d Causes More Proliferation Than Rasg12v in Drosophila Pancreatic Cancer Models. F. Bernard, M. Sonoshita, R. Cagan, *Univ. of Puerto Rico, Puerto Rico and Icahn Sch. of Med. at Mount Sinai*

**B421 807.3** Identification and Functional Validation of a Biomarker for the Diagnosis of Miltefosine Relapse During Visceral Leishmaniasis. P. Tiwary, D. Kumar, S. Sundar, *Banaras Hindu Univ., India*

**B422 807.4** Antimycobacterial and Macrophage Apoptosis Inducing Effects of *Psychotria Capensis* and *Psychotria Zombamonatana* Species. A. Aro, P. Fonteh, L.J. McGaw, *Univ. of Pretoria, South Africa and Univ. of Witwatersrand, South Africa*

**B423 807.5** Carnosic Acid Activates AMPK, Inhibits Akt and Inhibits H1299 Human Lung Cancer Cell Survival. D. Nyforovskyy, J. Moore, E. Tsiani, *Brock Univ., Canada*

**B424 807.6** Allosteric P97 Inhibitors to Overcome ATP-Competitive Inhibitors Resistance in Anticancer Therapy. F. Wang, T. Gan, T-F. Chou, LA BioMed at Harbor-UCLA Med. Ctr.

**B425 807.7** Development of a Novel Ron Targeted Antibody-Drug Conjugates Using Cysteine Bridging Technology for Potential Treatment of Pancreatic Cancer. S. R. Suthe, H-P. Yao, P.C. Trippier, M-H. Wang, Texas Tech Univ. Health Sciences Ctr. and Zhejiang Univ. Sch. of Med., People's Republic of China

**B426 807.8** A Novel Murine Knock-In Model for Progranulin-Deficient Frontotemporal Dementia with Nonsense-Mediated mRNA Decay. A.D. Nguyen, T.A. Nguyen, J. Zhang, S. Devireddy, P. Zhou, A.M. Karydas, X. Xu, B.L. Miller, F. Rigo, S.M. Ferguson, E.J. Huang, T.C. Walther, R.V. Farese, Jr., Harvard T.H. Chan Sch. of Public Health, Univ. of California, San Francisco, Yale Univ. Sch. of Med., Gladstone Inst. of Cardiovascular Disease and Ionis Pharmaceuticals Inc.

**B427 807.9** Pax5-Induced Expression of Endogenous Mucolin-2 (*Mcoln2*) Gene in Human Glial and Neuronal Cell Lines: A Potential Gene Complementation Therapy Approach for Mucopolidosis IV. L. Rosas, M.P. Cuajungco, California State Univ. and Fullerton

**B428 807.1** Targeting Specificity of Liposomes Coated with Isolated Membranes from Cancer and Macrophage Cell Lines. T. Mason, E. Tamulonis, K.R. Miller, Univ. of Mount Union

**B429 807.11** Enhancing B-Cell Sensitivity to Kisspeptin via Linkage to Glp-I. A.K. Aragaki, C. Weber, J. Vagner, R. Lynch, Univ. of Arizona

**B430 807.12** Peptidyl Arginine Deiminase-4: A Gliosis-Associated Target for Age-Related Macular Degeneration. N.J. Saba, S.I. Palko, P. Bargagna-Mohan, R. Mohan, Univ. of Connecticut Health Ctr.

**B431 807.13** New MicroRNA Biotechnology as an in Vivo Therapeutic Molecule to Inhibit Cancer. B.A. Amendt, S. Eliason, A. Akkouch, H. Cao, L. Hong, Univ. of Iowa

## 808

### Parasite-Host Interactions

**B432 808.1** Overcoming Challenges in the Diagnosis of *Schistosoma mansoni* Infections Using Poc Tests, Recombinant Protein and Monoclonal Antibody Technologies. R.F. G. E. Queiroz, D. Harn, P.M. Coelho, Oswaldo Cruz Foundation-FIOCRUZ, Brazil and Univ. of Georgia

**B433 808.2** Stat6 Promoter Polymorphism Is Essential for Malaria Infection and Suppression of Parasitemia Among Infected Children. B. Seamans, G. Liou, O. Ojuronbe, B. Thomas, Rochester Inst. of Technology and Ladoke Akintola Univ. of Technology, Nigeria

**B434 808.3** Interethnic Diversity and Association of Stat6 Genetic Variants with Schistosomiasis in West Africa. G. Liou, B. Seamans, S. Adedokun, O. Ojuronbe, B. Thomas, Rochester Inst. of Technology and Ladoke Akintola Univ. of Technology, Nigeria

**B435 808.4** Transcriptional Fusions of Putative G-Protein Coupled-Receptors from Hookworm (*Ancylostoma Ceylanicum*) Expressed in *Caenorhabditis Elegans*. P.T. Erickson, R. Ratnappan, J. Bernot, M. Haile, J.M. Hawdon, Salisbury Univ. and George Washington Univ.

**B436 808.5** Effects of *Plasmodium Falciparum* on Placental Expression of Inflammatory and Coagulation Factors. T. Dalapati, Univ. of Georgia

**B437 808.6** The Role of Acylated Homoserine Lactone Among Predator-Prey Interactions of *Arthrobotrys Oligospora* and *Caenorhabditis Elegans*. M.R. Jauregui, D. Rocha, R. Ochoa, Vanguard Univ.

**B438 808.7** Identifying Genes Involved in Trophocytosis (Cell-Nibbling) in *Entamoeba Histolytica*. S.E. Feeney, K.S. Ralston, UC, Davis

**B439 808.8** The Role of Polyamines for Proliferation, Survival, and Infectivity of the Protozoan Parasite *Leishmania Donovanii*. S. Roberts, J. Perdeh, I. Abuan, L. Le, Q. Love, N. LoGiudice, K. Turcu, J. Harrelson, Pacific Univ.

**B440 808.9** Investigating the Regulation of Inter-cellular Trafficking in Plants with Varying Levels of Thioglucoside Glucohydrolase Mutants. J.C. Fernandez, T. Hewezi, T. Burch-Smith, Univ. of Tennessee and Knoxville

**B441 808.1** How Camp Homeostasis Is Controlled in *Leishmania* by Receptor Adenylate Cyclases and Acidocalcisomal Pyrophosphatases Aiding Its Survival in Phagolysosomal Conditions?. A. Biswas, A. Bhattacharya, A. Vij, P.K. Das, Univ. of Kalyani, India, Centre de Recherche en Infectiologie, Centre de Recherche du CHU de Québec, Univ. of Laval, Canada and CSIR-Indian Inst. of Chemical Biology, India

## 809

### Antibiotic Resistance

**B442 809.1** Chai Tea Promotes Ampicillin Susceptibility in MRSA. S. Hinsdale, J. Pace, E. Anderson, S. Favoreto, Cuesta Col.

**B443 809.2** Genesis of Antibiotic Resistance (Ar) Xxxi Mechanism(S) to Mitigate the Particulate Matter (Pm) Induced Dissemination of Antibiotic Resistance (Ar)-Human Pathogens (Ar-Hup) Consequential Antibiotic Resistance Pandemic (Arp). L. Fuentes, A. Balino, K. Cervantes, A. Fernandez, L. De Los Santos, I. Espinoza, D. Villarreal, J. Huerta, U. Pointdexter, J.E. Munoz-Chacon, S. Theiss, S. Kannan, Southwest Texas Junior Col.

**B444 809.3** Investigation of Lytic Activity of Melittin-nNOS Chimeric Antimicrobial Peptides. M. Fujii, R. Stevens-Truss, Kalamazoo Col.

**B445 809.4** Genesis of Antibiotic Resistance (AR) Xxxii Effective Implementation of "Best Manufacturing Practices (BMP)" in Coal Mining Relegates Particulate Matter (PM) Inflicted Alteration in Commensal Microbial Genome Consequential Antibiotic Resistance (AR). L. Fuentes, A. Balino, K. Cervantes, A. Fernandez, L. De Los Santos, I. Espinoza, D. Villarreal, J. Huerta, U. Pointdexter, J.E. Munoz-Chacon, S. Theiss, S. Leland, R. Munoz, L. Peters, S. Kannan, Southwest Texas Junior Col. and Camino Real Fuels LLC

**B446 809.5** Genesis of Antibiotic Resistance (AR) Xxxiii Obdurate Implementations of Preventive Measures to Abjure Antibiotics for Treating Primary Fungal Infection (S) Ebb Antibiotic (Ab), Antifungal (Af) Resistance (R) Pandemic (P) (Ab-Af: Rp): A Global Concern. L. Fuentes, A. Balino, K. Cervantes, A. Fernandez, L. De Los Santos, I. Espinoza, D. Villarreal, J. Huerta, U. Pointdexter, S. Theiss, E. Gayton, R. Koenig, S. Kannan, Southwest Texas Junior Col.

**B447 809.6** Structures of New Delhi Metallo-Beta-Lactamases in Pursuit of New Inhibitors. M. Morris, J. VanPelt, R. Page, Miami Univ.

**B448 809.7** Genesis of Antibiotic Resistance (AR) Xxxiv: Effective Implementation of Preventive Measures in Feed Lot / Feed Yard or Caged Animal Feeding Operations (Cafos) Mitigate Particulate Matter (PM) Induced AR Pandemic (ARP). D. Villarreal, L. Fuentes, A. Balino, K. Cervantes, A. Fernandez, L. De Los Santos, I. Espinoza, J. Huerta, E. Gayton, S. Clark, C. Ledezama, S. Kannan, Southwest Texas Junior Col.

**B449 809.8** Genesis of Antibiotic Resistance (AR) XXXV: Global Awareness on Antibiotic Resistance Pandemic (ARP) by "Educating Global Citizens" (EGC). K. Cervantes, Y. Martinez, L. Fuentes, A. Balino, A. Fernandez, L. De Los Santos, I. Espinoza, D. Villarreal, J. Huerta, E. Gayton, R. Koenig, S. Clark, C. Ledezama, S. Kannan, Southwest Texas Junior Col.

**B450 809.9** Genesis of Antibiotic (AB) Resistance (AR) XXXVI: "Hormesis Activate Resident AR Genes (ARG) to Functional Antibiotic Resistance Genes (FARG) in Yanomami Amerindians (YA) During Swarming". A. Balino, L. Fuentes, K. Cervantes, A. Fernandez, L. De Los Santos, I. Espinoza, D. Villarreal, J. Huerta, Y. Martinez, C. Ledezama, U. Pointdexter, J.E. Munoz-Chacon, S. Theiss, A. Martinez, S. Kannan, Southwest Texas Junior Col.

**B451 809.1** Genesis of Antibiotic Resistance (AR) XXXVII: Fracking Fluid and Produced Water Induced Alteration of Commensal Microbial Genome Exacerbate AR Pathogen (ARP), Consequently Antibiotic Resistance Pandemic (ARP). S. Kannan, K. Cervantes, L. Fuentes, Y. Martinez, A. Balino, A. Fernandez, L. De Los Santos, I. Espinoza, D. Villarreal, J. Huerta, E. Gayton, R. Koenig, S. Clark, C. Ledezama, S. Clark, A. Martinez, Southwest Texas Junior Col.

**B452 809.11** Genesis of Antibiotic Resistance (AR) XXXVIII Purging of Antibiotic Prophylaxis for Severe Traumatic Brain Injury (STBI)/Traumatic Brain Injury (TBI) Patients in Intensive Care Unit (ICU) Rout AR Induced Mortality. C. Calzonci; Crystal, L. Contreras, D. Rosales, J. Mendoza, R. Galindo, M. Pope, L. Fuentes, D. Villarreal, U. Pointdexter, J.E. Munoz-Chacon, S. Theiss, S. Clark, C. Ledezama, A. Martinez, E. Gayton, S. Kannan, *Southwest Texas Junior Col.*

**B453 809.12** Genesis of Antibiotic Resistance (AR) XXXIX: Universal Implementation of Simplified Acute Physiology Score (SAPS-II) Score Inclusive of AR as an Effective Prognostic Indicator of Mortality in Traumatic Brain Injury (TBI) Induced Coma. D. Villarreal, J.E. Munoz-Chacon, E. Gayton, C. Ledezama, A. Martinez, L. Contreras, D. Rosales, J. Mendoza, R. Galindo, M. Pope, L. Fuentes, S. Clark, M. Soto, P. Nunez, S. Kannan, *Southwest Texas Junior Col.*

**B454 809.13** Genesis of Antibiotic Resistance (AR) XXXX: Combination Therapy (Colistin and Tigecycline) for External Ventricular Device (EVD)-Related Ventriculitis Gale Traumatic Brain Injury (TBI): *Critical Appraisal*. J. Mendoza, L. Contreras, U. Pointdexter, S. Theiss, S. Clark, C. Ledezama, A. Martinez, D. Villarreal, J.E. Munoz-Chacon, E. Gayton, R. Galindo, M. Soto, P. Nunez, S. Kannan, *Southwest Texas Junior Col.*

**B455 809.14** A Susceptibility Screen of Phytochemicals Against *Staphylococcus Aureus*. V.P. Mak, R.M. Heuertz, *Saint Louis Univ.*

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## Antibacterial Targets and Drug Discovery

**B456 810.1** Catalytic Strategy and Inhibition of the Prokaryotic Specific Gtp Cyclohydrolase Ib. N. Paragama, S. Bonnett, J. Alvarez, A. Luthra, B. Stec, A. Gustafson, G. Samaan, B. Purse, D. Iwata-Reuyl, M. Swairjo, *San Diego State Univ., Portland State Univ. and Western Univ. of Health Sciences*

**B457 810.2** Solvent Extraction and Antibacterial Analysis of Chinese Traditional Herbs. M. San Angelo, R. Isovitsch, H. Valenzuela, *Whittier Col.*

**B458 810.3** Multi-Targeted Inhibition of an Essential Bacterial Enzyme. T.P. Soares da Costa, C.K. Gardi, R. Christoff, J.M. Sutton, B.M. Abbott, M.A. Perugini, *La Trobe Univ., Australia and Public Health England, United Kingdom*

**B459 810.4** A Vitamin B<sub>12</sub> Receptor Serves a Role in Membrane Stability of *Caulobacter Crescentus*. D. Barraza, S. Strebe, I. Menikpurage, A. Melendez, P.E. Mera, *New Mexico State Univ.*

**B460 810.5** Resensitizing Multidrug Resistant Bacteria to Antibiotics by Targeting Bacterial Response Regulators. M.E. Milton, B.M. Minrovic, D.L. Harris, G.L. Draughn, B. Kang, D. Jung, C.P. Lewis, R.J. Thompson, R.J. Melander, D. Zeng, C. Melander, J. Cavanagh, *RTI InterNat'l., North Carolina State Univ. and Agile Sciences*

**B461 810.6** A Novel Functionalization of Azetidines. , Biogen

**B462 810.7** Antitumor Activity of the Nudix Hydrolases from *e. Coli*. T.W. Hynes, S.F. O'Handley, *Rochester Inst. of Technology*

**B463 810.8** Rv1495 Toxin as a Model for Inhibitors of *Mycobacterium Tuberculosis* DNA Topoisomerase I. P.K. Garcia Moreno, Y.-C. Tse-Dinh, *Florida InterNat'l. Univ.*

**B464 810.9** Bacterial and Viral Source Tracking in the Sparkill Creek Watersheds. K.L. Acevedo, *Dominican Col. of Blauvelt*

**B465 810.1** A Benzimidazole Carboxamide Derivative, Ddb-506 Inhibits Bacterial Proliferation by Targeting FtsZ. R. Tiwari, T.M. Dhameliya, A.K. Chakraborty, D. Panda, *Indian Inst. of Technology Bombay, India and Nat'l. Inst. of Pharmaceutical Education and Res., India*

**B466 810.11** Computational Studies of the Nudix Hydrolase Superfamily. S.C. Richman, K. O'Donovan, P. Craig, J. Mills, S. O'Handley, *Rochester Inst. of Technology*

**B467 810.12** Novel Class of PqsR Inhibitors to Reduce the Biofilm Formation of *p. Aeruginosa*. M. A. Hossain, H.I. Parikh, N. German, *Texas Tech Univ. Health Sciences Ctr. and Virginia Commonwealth Univ.*

**B468 810.13** Discovery, Efficacy Testing, and Potential Target Identification of Antibiofilm Compounds. D. Goode, C. Jackson, K. Aber, A. Shah, L. Hensel, *Mercer Univ.*

**B469 810.14** Correlating Enzymes to Antimicrobial Resistance in the Protein Data Bank. P.M. Salcedo, S. Burley, *Rutgers Univ.*

**B470 810.15** Discovery of Novel Small Molecule Inhibitors of Bacterial Pyruvate Carboxylase. B. Wyatt, D. Burkett, M. Mews, W. Donaldson, C. Dockendorff, M. St. Maurice, *Marquette Univ.*

**B471 810.16** Use of the Phytochemical Neem as a Component of Combination Treatment Against *Pseudomonas Aeruginosa* Biofilm. B.P. Bertrand, R.M. Heuertz, *Saint Louis Univ.*

**B472 810.17** Isolation and Characterization of Antimicrobial Compound Isolated from Lichen *Parmelia Vagans*. V. Bondarenko, *Touro Univ. Nevada*

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## Metabolism and Cancer

**B473 811.1** Biosynthesis of Acyl-CoA Sustains Prostate Cancer Progression. H. Cai, Y. Ma, *Univ. of Georgia*

**B474 811.2** The Role of Effective Energy Restriction on Metastatic Tumor Growth. T. Roy Sarkar, N. Sphyris, E. Schmitt, G. Wyatt, S. Wall, W. Porter, *Texas A&M Univ. and Independent Res.er, United Kingdom*

**B475 811.3** 1-Formyl-7-Hydroxy-6,7-Dihydro-5H-Pyrrolizine (9-Cho-Dhp) — A Biologically Proximate Pyrrolic Metabolite of Carcinogenic Pyrrolizidine Alkaloids. Q. Xia, X. He, G. Lin, P. Fu, *Nat'l. Ctr. for Toxicological Res., U.S. Food and Drug Administration and The Chinese Univ. of Hong Kong, Hong Kong*

**B476 811.4** Autophagy Modulates Lipid Metabolism to Support Liver Kinase B1 (Lkb1)-Deficient Lung Tumor Growth. V.D. Bhatt, Z. Hu, X. Su, J. Y. Guo, *Rutgers Univ.*

**B477 811.5** Association of Genetic Polymorphism of NAT2, GSTT1, GSTM1 Gene with Prostate Cancer in Bangladeshi Population. A. Nesa, L. Akther, S. F. Munir, M. M. Rahman, Y. Kabir, *Dhaka Univ., Bangladesh, Reproductive Health Services Training and Education Program, Bangladesh and Bangabandhu Sheikh Mujib Med. Univ., Bangladesh*

**B478 811.6** Targeting Glycolytic Metabolism in Cancer. S. Telang, J. Trent, J. Chesney, A. Mojesky, *Univ. of Louisville*

**B479 811.7** Eat to Survive: Consumption of Thermally Abused Frying Oil Alters Lipid Metabolism and May Mediate Metastatic Tumor Vascularity. A. Oyirifi, C. Chen, E. Nelson, J. Hughes, W.G. Helferich, *Univ. of Illinois*

**B480 811.8** Suppression of Pyruvate Carboxylase Impairs Pyruvate Cycling and Anaplerotic Flux and Inhibits Cell Growth in Invasive Breast Cancer Cells. S. Jitrapakdee, P. Phannasil, I.-u. Ansari, M. El-Alzouny, M. Longacre, K. Rattanapornsompong, C. Burant, M. MacDonald, *Mahidol Univ., Thailand, Univ. of Wisconsin and Univ. of Michigan*

**B481 811.9** Unconventional Pathways of Nitrogen Metabolism in Lung Cancer. J. Kim, *The Univ. of Texas Southwestern Med. Ctr.*

**B482 811.1** Biological and Health Aspects of Edible Wild Omani Plants in the Primary Prevention of Oxidative Stress-Mediated Colon Cancer. M.I. Waly, N. Guizani, M.S. Rahman, Z. Al-Attabi, *Sultan Qaboos Univ., Oman*

**B483 811.11** The Gene Expression Profile and Tetraspanin Protein Co029 on the Human Colorectal Cancer Laterality. L.A. Braga, J.V. Assis, V.S. Moraes, I.D. Silva, R.F. Grenfell, *Oswaldo Cruz Foundation, Brazil and Universidade Federal de Minas Gerais, Brazil*

**B484 811.12** Genetic and Protein Expression of Cxcr4 and Cd26 and Its Relation to Cell Indifferentiation and Responsiveness to Treatment of Colon and Rectum Neoplasms. J.V. Assis, L.A. Coutinho, V.S. Moraes, I.D. Silva, R.F. Grenfell, Oswaldo Cruz Foundation, Brazil and Universidade Federal de Minas Gerais, Brazil

**B485 811.13** Understanding the Impact of Idh2 Mutations on the Redox Balance of Cancer Cells. S.J. Gelman, L. McKenzie, M.G. Chheda, G.J. Patti, Washington Univ. in St. Louis

**B486 811.14** Profiling Bis(monoacylglycerol) phosphate Lipids in Cancer Cell Lysosomes as Therapeutic Targets. M. Showalter, M. Sa, H. Tsugawa, A. Berg, K. VanderVorst, T. Kind, K.L. Carraway, III, O. Fiehn, Univ. of California, Davis and Riken, Japan

**B487 811.15** Insights into Glycogen Metabolic Inhibition-Induced Death of Hepatocellular Carcinoma. S. Barot, E.M. Abo-Ali, C. Palaguachi, V.V. Dukhande, St. John's Univ.

**B488 811.16** Investigation of Phosphoserine Aminotransferase I and Its Role in Breast Cancer Progression. B. Clem, S. Metcalf, T. Kruer, C. Klinge, Univ. of Louisville

**B489 811.17** Beneficial Metabolic Consequences of Acyl-CoA Synthetase ACSVL3 Knockout in Glioma Cells. P. Watkins, X. Shi, E. Kolar, E. Clay, Y. Liu, Kennedy Krieger Inst.

**B490 811.18** Subcellular Localization of the Enzymes in Serine Biosynthesis. B. Nance, M. Kyoung, S. An, Univ. of Maryland and Baltimore County

**B491 811.19** Time-Restricted Feeding Attenuates Breast Cancer Growth in a Mouse Model of Postmenopausal Obesity. M. Das, E. Gross, D. Kumar, C. Saucedo, H-T. Park, D. Sears, L. Ellies, N. Webster, UCSD

**B492 811.2** Selective Neddylation Facilitates Proteasome-Mediated Degradation of Serine Rich Splicing Factor 3 (Srsf3) in Non-Alcoholic Fatty Liver Disease. D. Kumar, M. Das, C. Saucedo, H-T. Park, G. Bandyopadhyay, D.W. Burton, N. Webster, UCSD

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### Metabolism and Nutrition

**B493 812.1** Saturated Fat-Enriched Diet Attenuates Brain-Derived Neurotrophic Factor Expression. G. Marwarha, O. Ghribi, Univ. of North Dakota Sch. of Med. and Health Sciences

**B494 812.2** Effects of a 6-Month Multi-Strain Probiotics Supplementation in Endotoxemic, Inflammatory and Cardiometabolic Status of T2dm Patients: A Randomized, Double-Blind, Placebo-Controlled Trial. S. Sabico, N. Aldaghri, M. Alokail, Warwick Univ., United Kingdom and King Saud Univ., Saudi Arabia

**B495 812.3** Mango Ginger Ameliorates Endothelial Dysfunction by Regulating NADPH Oxidase and Sirtuin Pathways in Rats Fed High Fat/Sucrose Diet. V. Juturu, K. Sahin, C. Orhan, M. Tuzcu, N. Sahin, OmniActive Health Technologies Inc. and Firat Univ., Turkey

**B496 812.4** Effect of Dietary Different Energy Sources on the Growth Performance, Amino Acid Profile, Blood Profile, Intestinal Morphology and Digestive Enzyme in Weaned Piglets. , Inst. of Subtropical Agriculture, Chinese Academy of Sciences, People's Republic of China, Hunan Normal Univ., China, People's Republic of and Univ. of California

**B497 812.5** Effects of Zyflamend Treatment on Adipogenesis. V. Frankel, S. Chahed, D. Alanai, D. Puckett, B.H. Voy, D.R. Donohoe, J. Whelan, A. Bettaieb, Univ. of Tennessee and Knoxville

**B498 812.6** Acetaminophen-induced Hepatotoxicity in Wistar Rats Treated with Annona Muricata Aqueous Stem Extract. I.J. Okpara, C.I. Nosiri, M. Chisom, Nigeria Social Insurance Trust Fund, Nigeria and Abia State Univ., Nigeria

**B499 812.7** Dietary Restriction Modulates Sleep in Drosophila melanogaster. B. Varamini, H. Joel, J. Lee, E. Newman, K. Robinson, Z. Smith, Biola Univ.

**B500 812.8** Expression Profile of Adiponectin and Adiponectin Receptors in High Fat Diet Feeding Chicken. Y. Lin, S. Ding, Tunghai Univ., Taiwan and Nat'l. Taiwan Univ., Taiwan

**B501 812.9** Lower Progesterone Receptors on Mast Cells Do Not Effect Blood Vessel Replication in Lipedema. V. Rosas, S. Al-Ghadban, K. Herbst, The Univ. of Texas at El Paso and Univ. of Arizona

**B502 812.1** Heavy Metals Concentrations in Shell Fishes Found in Niger Delta Nigeria. D.C. Belonwu, M.O. Wegwu, R.E. Idiabana, Univ. of Port Harcourt, Nigeria

**B503 812.11** Evaluation of Antioxidant Activity by the Korean Bee Pollen. J-H. Lee, J-S. Kim, Kongju Nat'l. Univ., Republic of Korea

**B504 812.12** The Effect of Short-Term and Long-Term High Fat Diet on Pancreas Mitochondrial Function and Redox Balance Between Obesity-Prone and Obesity-Resistant Rats. X. Tang, Y. Sun, Y. Li, S. Ma, K. Zhang, J. Sun, H. Xiao, Jiangnan Univ., People's Republic of China and Univ. of Massachusetts

**B505 812.13** HFE Mutation Impairs Manganese Metabolism in Mice. Q. Ye, H. Alsulimani, J. Kim, Northeastern Univ.

**B506 812.14** Mogat1 Is a Fasting-Induced PPAR  $\alpha$  Target Gene That Plays a Role in Coordinating the Hepatic Response to Food Deprivation. A.J. Lutkewitte, K.S. McCommis, K.T. Chambers, M.J. Graham, A.M. Hall, B.N. Finck, Washington Univ. Sch. of Med. in St. Louis and Ionis Pharmaceuticals Inc.

**B507 812.15** Profiling the Oxylin and Endocannabinoid Serum Metabolome in an 8-Week Almond Snacking Intervention. J. Dhillon, K. Borkowski, J. Newman, R.M. Ortiz, Univ. of California, Merced, UC, Davis

**B508 812.16** Gelidium Elegans Extract Ameliorates Type 2 Diabetes Mellitus Through the Regulation of Glucose Uptake. J. Choi, E-J. Koh, Y-J. Seo, J-H. Song, S. Chei, S-Y. Choi, K. Lee, B-Y. Lee, CHA Univ., Republic of Korea

**B509 812.17** Spirulina Maxima Extract Ameliorates Learning and Memory Impairments via Inhibiting GSK3- $\beta$  Phosphorylation Induced by Intracerebroventricular Injection of Amyloid-Beta 1-42 in Mice. E-J. Koh, K. Lee, J. Choi, J-H. Song, Y-J. Seo, S. Chei, S-Y. Choi, B-Y. Lee, CHA Univ., Republic of Korea

**B510 812.18** Gelidium Elegans Extract and Fucosterol Suppress Lipid Accumulation in 3T3-L1. J. Choi, E-J. Koh, Y-J. Seo, J-H. Song, S. Chei, S-Y. Choi, K. Lee, B-Y. Lee, CHA Univ., Republic of Korea

**B511 812.19** Effect of Korean Ginseng Extract on Oxidative Stress in Rats Subjected to Environmental Heat Stress. J. Choi, J-H. Song, E-J. Koh, Y-J. Seo, S. Chei, S-Y. Choi, K. Lee, B-Y. Lee, CHA Univ., Republic of Korea

**B512 812.2** Ginsenoside Rg1 Induces Browning of 3T3-L1 Adipocyte. K. Lee, Y-J. Seo, J. Choi, E-J. Koh, J-H. Song, S. Chei, S-Y. Choi, B-Y. Lee, CHA Univ., Republic of Korea

**B513 812.21** Anti-Obesity Effects of Spirulina Maxima Extract in High Fat Diet Induced Obese Mice. J. Choi, Y-J. Seo, K. Lee, E-J. Koh, J-H. Song, S. Chei, S-Y. Choi, B-Y. Lee, CHA Univ., Republic of Korea

**B514 812.22** Evaluation of Spirulina Maxima Extract on Anti-Inflammation Property in RAW264.7 Cells. K. Lee, S-Y. Choi, S. Chei, E-J. Koh, J. Choi, Y-J. Seo, J-H. Song, B-Y. Lee, CHA Univ., Republic of Korea

**B515 812.23** Anti-Inflammatory Activity of Spirulina Maxima Extract in LPS-Treated THP-1 and RAW264.7 Cell. K. Lee, S. Chei, S-Y. Choi, J. Choi, E-J. Koh, Y-J. Seo, J-H. Song, B-Y. Lee, CHA Univ., Republic of Korea

**B516 812.24** Temporal Alterations in Intraerythrocytic Hemoglobin in Mice. M.N. Almashjary, S. Brooks, H. Ackerman, Nat'l. Inst. of Allergy and Infectious Diseases and Nat'l. Inst. of Health

**B517 812.25** Lactate Stimulation Activates the Ampk and the Mtorc1 Pathways Differentially According to Skeletal Muscle Type in Mouse. H.R. Cerda Kohler, C. Henríquez Olguín, P. Llanos, T.E. Jensen, E. Jaimovich, Universidad de Chile, Chile and Univ. of Copenhagen, Denmark

**B518 812.26** Investigation of Involvement of Ferric Reductases of Iron Uptake in Drosophila S2 Cells. A. Ochoa, M.J. Gorman, E.J. Ragan, Metropolitan State Univ. of Denver and Kansas State Univ.

**B519 812.27** Effects of Rosmarinic Acid on Alleviating the Formation of Polycyclic Aromatic Hydrocarbons During Roasting Seasoned Laver. Y. S. Cho, S.-J. Kang, S.-H. Chun, M.-J. Hwang, K.-W. Lee, Korea Univ., Republic of Korea and Ministry of Food and Drug Safety, Republic of Korea

**B520 812.28** Validation of the Optimized Monier Williams Method for the Analysis of Sulfur Dioxides in Imported Wines. H. J. Yoo, Y. S. Cho, S.-H. Chun, K.-W. Lee, Korea Univ., Republic of Korea

**B521 812.29** Analysis of 4 Polycyclic Aromatic Hydrocarbons According to Direct or Indirect Steam Process That Reduces Ochratoxin A. K. Y. Jeon, M.-J. Hwang, H. S. Shin, M. C. Pyo, H.-S. Lee, J. M. Bae, K.-W. Lee, Korea Univ., Republic of Korea and Korean Nat'l. Food Cluster FOODPOLIS, Republic of Korea

**B522 812.3** Decreased Consumption of Specific Dietary Macronutrients Restores Metabolic Health to Diet-Induced Obese Mice. D.W. Lamming, N.E. Cummings, H. Pak, E.M. Williams, E.N. Konon, M.M. Walter, M.E. Barnes, D. Yu, Univ. of Wisconsin-Madison

**B523 812.31** Oleic Acid Protects Saturated Fatty Acid Mediated Lipotoxicity in Hepatocytes and Rat of Non-Alcoholic Steatohepatitis. X. Chen, L. Li, X. Liu, R. Luo, G. Liao, G. Yang, L. Li, J. Liu, H. Li, J. Cheng, Y. Lu, Y. Chen, West China Hosp. and Sichuan Univ., People's Republic of China

**B524 812.32** Oleic Acid Protected Pancreatic  $\beta$ -Cell Against Saturated Fatty Acid Induced Lipotoxicity. X. Liu, X. Chen, L. Li, R. Luo, D. Long, Y. Lu, Y. Chen, West China Hosp. and Sichuan Univ., People's Republic of China

**B525 812.33** Nutritional Composition of *Annona muricata* Extract Found in Covenant University. O.E. Omotosho, N.A. Ifeoluwa, J.J. Omini, Covenant Univ., Nigeria

**B526 812.34** Dairy Milk, Regardless of Fat Content, Protects Against Postprandial Hyperglycemia-Mediated Oxidative Stress That Impairs Nitric Oxide Bioavailability in Prediabetic Adults. J.D. McDonald, P. Dey, B.D. Olmstead, F.A. Villamena, J.S. Volek, R.S. Bruno, The Ohio State Univ.

**B527 812.35** PPAR $\beta$  Agonists from *Kaempferia parviflora* Improve Glucose and Fat Metabolism in Mice. M. Ochiai, T. Nozaki, Kitasato Univ., Japan and BHN Co. Ltd., Japan

**B528 812.36** Validation of Prediction Equation on Glycemic Response After Mixed Meal Consumption. H. Lee, K. Nam, S. J. Chung, Y. K. Park, Kyung Hee Univ., Republic of Korea, Pulmuone Co., Ltd., Republic of Korea and Kookmin Univ., Republic of Korea

**B529 812.37** Characterizing Adaptive Changes in the Aerobic Metabolism of Mammalian Skeletal Muscle in Response to Unsaturated Fatty Acids and Exercise. J.L. Blair, M.T. Petros, R.A. Heybloom, A. Schlater, The Col. of St. Scholastica

**B530 812.38** Characterizing the Physiologic Effects of Exogenous Ketone Supplements—An Alternative or Adjuvant to the Ketogenic Diet. A. Poff, A. Koutnik, J. Deblasi, C. Rogers, S. Kesi, N. Ward, D. D'Agostino, Univ. of South Florida, Epigenix Foundation and Moffitt Cancer Ctr.

**B531 812.39** Effect of Elevated *o*-3/*o*-6 Pufa Ratio on High-Fat Diet and Acute Ethanol-Induced Obesity, Glucose Intolerance and Liver Injury in Mice. S.G. Dastidar, D. Warner, Y. Song, J. Warner, C. McClain, I. Kirpich, Univ. of Louisville

**B532 812.4** Redox Regulation of Fgf21 in an Obese "Stress-Less" Mouse Model. A. Roberts, D. Amos, N. Santanam, Marshall Univ.

**B533 812.41** The Effects of Omega-3 Supplementation on the Lipid Profile and Adipose Indices in Hispanics with Type 2 Diabetes Mellitus. T. Jehi, C. Mota, L. Beeson, A. Firek, Z. Cordero-MacIntyre, M. De Leon, Loma Linda Univ.

**B534 812.42** Native American Adolescent Obesity and Nutrient Intake. H. Dai, S. Zheng, California Baptist Univ.

**B535 812.43** Effect of Fsh-Sp on Inhibition Winkle Formation, Melanogenesis, and Promoting Skin Hydration in Uvb-Irradiated Hrm-2 Hairless Mice. D. Lee, M. Lee, S.-J. Park, J.-M. Yun, D. Kim, M. Lee, Y. H. Woo, J. Lee, Kyung Hee Univ., Republic of Korea, FromBio co. and Ltd, Republic of Korea

**B536 812.44** Effect of Herbal Mixture Extracts on Degenerative Arthritis in Vivo Models. Y. Jeong Moon, L. Dasom, K. Dakyung, L. Minhee, P. Sujeung, L. Yongwook, H. Junkee, L. Jeongmin, Kyung Hee Univ., Republic of Korea, Naturalendotech co. and Ltd, Republic of Korea

**B537 812.45** Improvement of Joint Health by Anti-Inflammatory Activity of Natural Substances in Chondrocyte of Osteoarthritis. D. Kim, M. Lee, S.-J. Park, J.-M. Yun, D. Lee, J. Sohn, M.-K. Yun, J. Lee, Kyung Hee Univ., Republic of Korea and SK Bioland Co. Ltd., Republic of Korea

**B538 812.46** Selenium and Sex: Competition Between Brain and Testes for Selenium Results in Male-Specific Consequences in Mice and Men. M.J. Berry, M. Pitts, P. Kremer, A. Hashimoto, L. Seale, A. Ogawa-Wong, D. Torres, Univ. of Hawaii

**B541 813.3** The Role of Sphingosine Kinase 2 in Chronic Alcohol-Induced Liver Injury and Disease. E.K. Kwong, X. Li, R. Liu, X. Wang, P.B. Hylemon, H. Zhou, Virginia Commonwealth Univ.

**B542 813.4** Sex Bias in Cytokines Transported by High-Density Lipoproteins in Patients with Coronary Artery Disease. K.T. Creasy, E. Stock, C.R. Pullinger, M.J. Malloy, J. Kane, Univ. of California and San Francisco

**B543 813.5** HMG-CoA Reductase Inhibitors Do Not Ameliorate Progressive Atherogenic Changes in Human Macrophages Treated with Systemic Lupus Erythematosus Patient Plasma: Implications for Statin Use and Novel Insight Into Systemic Lupus Erythematosus. H.A. Arain, M. Petri, L.J. Kasselman, H.A. Renna, J. Zhen, J. De Leon, S.E. Carsons, A.B. Reiss, M.R. Dores, Hofstra Univ., John Hopkins Univ. Sch. of Med. and New York Univ. Winthrop

**B544 813.6** Myeloperoxidase-Derived 2-Chlorofatty Acids Make Neutrophils Go Nets. E.N.D. Palladino, L.A. Katunga, D.A. Ford, Saint Louis Univ.

**B545 813.7** 2-Chlorofatty Acid: A Functional Connection Between Neutrophils and Endothelial Weibel-Palade Body Mobilization. C.L. Hartman, M.A. Duerr, C.J. Albert, W.L. Neumann, J. McHowat, D.A. Ford, Saint Louis Univ. and Southern Illinois Univ. Edwardsville

**B546 813.8** Meal-Induced Pro-Inflammatory Responses in Guatemalan Adults Are Associated with Body Mass Index and Are More Pronounced in Women. S. He, N.-A. Le, A.D. Stein, Nutrition and Health Sciences Program, Laney Graduate Sch., Emory Univ., Atlanta Res. and Education Foundation, Atlanta VA Med. Ctr., Rollins Sch. of Public Health and Emory Univ.

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### Lipid Storage and Trafficking

**B547 814.1** Effect of Fenton and Photo-Fenton Pretreatments on Solubilization of Lignocellulosic Biomass. S.F. De la Rosa, Univ. of Nebraska-Lincoln

**B548 814.2** Wild Yeast Strains Ferment Galactose in Whey Permeate. M.R. Loughrin, S. Nold, R. Delshadi, Univ. of Wisconsin-Stout

**B549 814.3** Modulation of Cellulase Activity of Fungi Isolates for Bioethanol Production by Using Cassava Bagasse. M.N. Igwo-Ezikpe, W.O. Okunowo, O. Ayanshina, Univ. of Lagos, Nigeria

**B550 814.4** Interorganellar Phosphatidylserine Transfer by Sec14 Family Protein Sfh1 in *Saccharomyces cerevisiae*. A. Mizuike, S. Kobayashi, H. Horiuchi, A. Ohta, R. Fukuda, The Univ. of Tokyo, Japan and Chubu Univ., Japan

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### Lipids, Inflammation and Eicosanoids

**B539 813.1** Characterization of Hepatic W-6 and W-3 PUFA Oxilipins in Ethanol-Induced Liver Injury in Mice. D. Warner, S. Gosh Dastidar, H. Liu, C. McClain, I. Kirpich, Univ. of Louisville, Col. of Life Sciences and Zhejiang Univ., People's Republic of China

**B540 813.2** The Effects of Fatty Acids on Brain Microglia Immune Responses. J.R. Lowry, A. Klegeris, Univ. of British Columbia Okanagan Campus, Canada

**B551 814.5** Arb Treatment Ameliorates Triacylglycerol Accumulation During Insulin-Resistant Conditions in the Liver of Oletf Rats. J.A. Godoy-Lugo, D. Lee, M.A. Thorwald, D. Nakano, A. Nishiyama, D. Hui, R.M. Ortiz, *Univ. of California, Merced, Kagawa Univ. Med. Sch., Japan and Univ. of Cincinnati*

**B552 814.6** Perilipin 5 Protein-Protein Interactions. E.K. Hughes, J.T. Tansey, *Otterbein Univ.*

**B553 814.7** Targeting Molecular Chaperone Hsp90 to Treat Niemann-Pick Type C I Disease. N.H. Pipalia, F.R. Maxfield, *Weill Cornell Med. and Cornell Univ.*

**B554 814.8** Characterization of a Short Form of Perilipin 5. R.C. Dalton, J.T. Tansey, *Otterbein Univ.*

**B555 814.9** Elucidation of the N-Terminal Structure and Characteristics of Perilipin 5. D.T. Wei, J.T. Tansey, *Otterbein Univ.*

**B556 814.1** Sac I Degrades Its Lipid Substrate Ptdins4P in the Er to Maintain a Steep Electrochemical Gradient on Donor Membranes. G. Hammond, J. Zewe, S. Sangappa, R. Wills, B. Goulden, *Univ. of Pittsburgh*

**B557 814.11** Unconventional Secretion of Adipocyte Fatty Acid Binding Protein (Fabp4) by Adipocytes. A. Josephrajan, A.V. Hertz, D. Mashek, D-H. Kim, S-I. Imai, D.A. Bernlohr, *Univ. of Minnesota and Washington Univ. Sch. of Med. in St. Louis*

## 815

### Membrane Proteins and Lipid Interactions

**B558 815.1** The Effect of Membrane Composition on Plc $\beta$  and G $\alpha_q$ -Mediated Activation. B.N. Hudson, S-H. Hyun, D.H. Thompson, A.M. Lyon, *Purdue Univ.*

**B559 815.2** The Roles of the Juxtamembrane Cysteine and Glutamine Residues in Mucin I (MucI) Dimerization. E. Li, R. Herrera, K. Cani, C. Freeman, *Saint Joseph's Univ.*

**B560 815.3** Regulating a G Protein-Coupled Receptor by Topological Inversion Through Regulated Alternative Translocation. B. Denard, *The Univ. of Texas Southwestern Med. Ctr.*

**B561 815.4** Novel Role for Hedgehog Acyltransferase in the Uptake of Palmitoyl-CoA into the Endoplasmic Reticulum. J.J. Ascioia, M. Resh, *Weill Cornell Med., Cornell Univ., Graduate Sch. of Med. Sciences and Memorial Sloan Kettering Cancer Ctr.*

**B562 815.5** Parathyroid Hormone Shows Novel Calcium Sensing Ability in Binding to Parathyroid Hormone I Receptor. K.J. Culhane, E.C. Y. Yan, *Yale Univ.*

**B563 815.6** Aggregation of Insulin on Langmuir Monolayers. K. Saulcy, D.C. Crans, A.G. Sostarecz, *Monmouth Col. and Colorado State Univ.*

**B564 815.7** A Novel Assay to Measure Scrambling of Natural Phospholipids in Reconstituted Proteoliposomes. L. Wang, K. Pandey, B. Ploier, A.K. Menon, P. Bütikofer, *Inst. of Biochemistry and Molecular Med., Univ. of Bern, Switzerland, Dept. of Biochemistry and Weill Cornell Med. Col.*

**B565 815.8** Coq9 Membrane Association and Its Role in Coenzyme Q Biosynthesis. H.C. Von Bank, D.C. Lohman, D. Aydin, R. Smith, C. Bingman, M. Dal Peraro, D.J. Pagliarini, *Univ. of Wisconsin-Madison and École Polytechnique Fédérale de Lausanne and the Swiss Inst. of Bioinformat, Switzerland*

**B566 815.9** Membrane Localization of Hsp1a, a Stress Inducible 70-Kda Heat Shock Protein, Is Mediated by the Lipid Phosphatidylserine. A.D. Bilog, N. Nikolaidis, *California State Univ. and Fullerton*

**B567 815.1** Sphingosine 1 Phosphate Regulates Store-Operated Calcium Entry Through Binding to Stim 1. H.M. El-Shewy, S. Parnham, D. Fedarovich, E. Bullesbach, L.M. Luttrell, *Med. Univ. of South Carolina and Res. Service of the Ralph H. Johnson Veterans Affairs Med. Ctr.*

**B568 815.11** The Anthrax Toxin: A Molecular Trojan Horse. H. Patel, R.G. Edmondson, J.R. Baugh, S.Z. Shabbir, S. Kenana, *Olathe North High Sch.*

**B569 815.12** Hsp1a, a 70-Kda Heat Shock Protein, Contains Several Distinct Lipid-Binding Sites. A.J. Daniels, L. Smulders, N. Nikolaidis, *California State Univ. and Fullerton*

**B570 815.13** Phospholipid Molecular Species Profile and Functionality of Nicotinic Acetylcholine Receptor Detergent Complex from *Torpedo Californica* Solubilized with Lipid-Like Detergents. O. Quesada, J. Colón, C. González, R. Maldonado, I.D. Rosado, J.A. Acevedo, J.A. Lasalde-Dominicci, *Univ. of Puerto Rico, Puerto Rico*

**B571 815.14** Assisted Insertion of *Pseudomonas Aeruginosa* Type Three Secretion Translocator Popd in Membranes by Translocator Popb. Y. Tang, A.P. Heuck, *Univ. of Massachusetts Amherst*

**B572 815.15** Probing the Function of Apolipoprotein A-I Using Chimera Proteins. N. Patel, P.M.M. Weers, *California State Univ. and Long Beach*

# WEDNESDAY APRIL 25

## ASBMB Late-Breaking Poster Sessions

### EXHIBIT HALL

Poster set up by: 9:00 AM    Poster display: 9:00 AM – 4:00 PM    Poster removal: 4:00 – 6:00 PM

### Author at boards:

# ending in 0, 3 or 6: 12:15 – 1:00 PM    # ending in 1, 4, 7 or 9: 12:45 – 1:30 PM    # ending in 2, 5, or 8: 1:30 – 2:15 PM

BOARD NUMBER	SESSION TITLE	BOARD NUMBER	SESSION TITLE
<b>1-6</b>	Genome Dynamics: DNA Replication, Repair and Recombination	<b>125-156</b>	Signal Transduction and Cellular Regulation
<b>7-17</b>	Chromatin Structure, Remodeling and Gene Expression	<b>157-174</b>	Metabolism, Bioenergetics and Nutritional Biochemistry
<b>18-24</b>	RNA: Processing, Transport, and Regulatory Mechanisms	<b>175-183</b>	Lipids and Membranes
<b>25-65</b>	Protein Synthesis, Structure, Modifications and Interactions	<b>184-191</b>	Organelles and Trafficking
<b>66-76</b>	Enzyme Chemistry and Catalysis	<b>192-194</b>	Glycans and Glycobiology
<b>77-106</b>	Chemical Biology, Drug Discovery and Bioanalytical Methods	<b>195-197</b>	Society for Experimental Biology and Medicine (SEBM) Interdisciplinary Research
<b>107-119</b>	Genomics, Proteomics and Metabolomics	<b>198-220</b>	Education and Professional Development - General (BMB)
<b>121-123</b>	Bacteria and Parasites: From Microbiome to Antibiotics		

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## Genome Dynamics: DNA Replication, Repair and Recombination

**LB1** Expanding the Horizon of Recombination Repair in Mycobacteria: Identification and Characterization of Novel Proteins. A. Singh, *Indian Inst. of Science, India*

**LB2** Construction of Plasmids to Make a Specialized *s. Cerevisiae* Strain to Investigate SAWI Protein Recruitment in Single-Strand Annealing Repair. Y. Rakibova, A. Alon, P. Fischhaber, *California State Univ. and Northridge*

**LB3** Novel Substrates for DNA Cytidine Deaminase APOBEC3B with Possible Implications for Alkylating Agent Chemotherapy. J. Chapman, M. Custance, B. Shen, A.V. Furano, *Nat'l. Inst. of Diabetes and Digestive and Kidney Diseases and Nat'l. Inst. of Health*

**LB4** Mitochondrial RNA Damage and Impaired Iron Homeostasis in Muscle Aging. A. Picca, R. Mankowski, R. Calvani, E. Marzetti, C. Leeuwenburgh, *Catholic Univ. of the Sacred Heart, Teaching Hosp. "Agostino Gemelli", Italy, Inst. on Aging, Division of Biology of Aging and Univ. of Florida*

**LB5** Mechanistic Comparison of Human RNA Ligases I and III. P. O'Brien, *Univ. of Michigan*

**LB6** Tumor Suppressor Protein PALB2 Has Strand Exchange Activity Independent of Recombinase RAD51. J. Deveryshetty, L. Kanikkannan, S. Korolev, *St. Louis Univ.*

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## Chromatin Structure, Remodeling and Gene Expression

**LB7** Saturated Fat-Enriched Diet Decreases SIRT1 Expression in the Mouse Hippocampus—The Sirtain Effects of Saturated Fat in the Brain. G. Marwarha, O. Ghribi, *Univ. of North Dakota Sch. of Medicine and Health Sciences*

**LB8** Rnf20 Regulates Adipocyte Differentiation Through Modulating PPAR  $\gamma$ . Y. Jeon, J. Lee, J. Kim, *Seoul Nat'l. Univ., Republic of Korea*

**LB9** Identification of a Novel Enhancer/Chromatin Opening Element Associated with High-Level  $\gamma$ -Globin Gene Expression. M. Bassett, Y. Shen, M. Hossain, C. Guy, R. Nar, A. Gurumurthy, J. Bungert, *Univ. of Florida, Harvard Med. Sch. and Ahi Evran Üniversitesi, Turkey*

**LB10** Relationship Between Nucleic Acid Structures and Sequences on the Expression of Terminal Differentiation (i.e., Denucleation): Alternative Cell Death Pathway. C.E. Gagna, M.R. Gupta, A.E. Haidery, U.R. Mughal, T.E. Beague, A.E. Pillay, A.A. Sattar, P. Lambert, W.C. Lambert, *New York Inst. of Tech. and Rutgers New Jersey Med. Sch.*

**LB11** Genetic Correction of Structural Variations in Patient-Derived iPSCs Using Crispr/Cas9. C.-Y. Park, D.-W. Kim, *Yonsei Univ. Col. of Medicine, Republic of Korea*

**LB12** Hyperinsulinemia-Induced Changes in Chromatin Acetylation in Triple Negative Breast Cancer. P. Senapati, J. Cordova, D.K. Ann, V. Seewaldt, T.K. Kundu, *Jawahar Lal Nehru Ctr. for Advanced Scientific Res., India and Bionivid Tech. Private Limited, India*

**LB13** P53 Mediated Regulation of Coactivator Associated Arginine Methyltransferase I (CARM1) Expression Is Critical for Suppression of Adipogenesis. A.K. Behera, A. Bhattacharya, M. Vasudevan, T.K. Kundu, *Jawahar Lal Nehru Ctr. for Advanced Scientific Res., India and Bionivid Tech. Private Limited, India*

**LB14** The Role of Yeast RNA Polymerase I Initiation Factor Core Factor Subunit Rrn7 in Promoter Open Complex Formation. A.J. Jackobel, Y. Han, Y. He, B.A. Knutson, *State Univ. of New York Upstate Med. Univ. and Northwestern Univ.*

**LB15** Yeast RNA Polymerase I Core Factor Binds to the Ribosomal RNA Promoter Through the GC Minor Groove. D.M. Glover, A.J. Jackobel, B.A. Knutson, *State Univ. of New York Upstate Med. Univ.*

**LB16** Reconstitution of RNA Polymerase I Upstream Activating Factor and the Roles of Histones H3 and H4 in Complex Assembly. B.A. Knutson, M.L. Smith, W. Cui, A.J. Jackobel, N.A. Walker-Kopp, *State Univ. of New York Upstate Med. Univ. and Washington Univ. in St. Louis*

**LB17** Differential Expression of PPAR $\gamma$  and Chop-10 During Adipogenic Differentiation of Human Bone Marrow Derived Mesenchymal Stem Cells. R.M.I. K. Rony, B.E. Hull, K. Excoffon, J.E. Ramirez-Vick, *Wright State Univ.*

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## RNA: Processing, Transport, and Regulatory Mechanisms

**LB18** High Throughput Validation of Orphan Riboswitch Candidates. G. Mirihana Arachchilage, M.E. Sherlock, N. White, S.S. Panchapakesan, R.R. Breaker, *HHMI, Yale Univ. and Yale Univ.*

**LB19** Z-Band and M-Band Titin Splicing and Regulation by RBM20 in Striated Muscles. M. Rexiati, Z. Chen, C. Zhu, H. Cai, A. Stern, P. Mozdziak, Y. Ge, S.P. Ford, P.W. Nathanielsz, W. Guo, *Univ. of Wyoming, North Carolina State Univ. and Univ. of Wisconsin*

**LB20** Identification of Crispr-Cas9 Mutants in *Arabidopsis* Glutaredoxin Genes AtGrxS11, AtGrxS6, and AtGrxS3/4/5/7/8 Gene Cluster. F. Fernandez, K. Sanchez, M. Escobar, *California State Univ. and San Marcos*

**LB21** Co-Transcriptional Folding of a Riboswitch Controls the Fate of the Transcriptional Machinery. N.G. Walter, *Univ. of Michigan*

**LB22** Simultaneous Stabilization of Protein and RNA from a Single Tissue Homogenate. N.L. Pirman, *MilliporeSigma*

**LB23** Studying Stimulus-Induced Changes in RNA Dynamics by Mutational Mapping Through Timelapse-Seq. L. Kiefer, J.A. Schofield, M.D. Simon, *Yale Univ.*

**LB24** Role of Viral RNA in Virion Stability and Disassembly. G. Anand, X.X. Lim, R. Ramesh, P.V. Raghuvamsi, *Nat'l. Univ. of Singapore, Singapore*

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## Protein Synthesis, Structure, Modifications and Interactions

**LB25** Rhbi-S<sub>2</sub>H as a Potential Novel Hydrogen Sulfide Donor. A. Reyes Oliveras, H. Borges Arias, J. López-Garriga, *Univ. of Puerto Rico at Mayaguez, Puerto Rico*

**LB26** Translational Control and the Integrated Stress Response Regulate the Fate of UVB-Irradiated Human Keratinocytes. R.C. Wek, A.E. Collier, D.F. Spandau, *Indiana Univ. Sch. of Medicine*

**LB27** Abrin, a Type II Ribosome Inactivating Protein: Differential Cytotoxicity and Development of the Vaccine Against Its Lethality. V. Tiwari, A.A. Karande, *Indian Inst. of Science, India*

**LB28** Mechanism of an Anticancer Peptide Rescuing P53 from Degradation by Cop I. M. Gao, Y. Huang, *Hubei Univ. of Tech., People's Republic of China*

**LB29** Characterizing the Interactions Between Intrinsically Disordered Transactivation Domains and the KIX Domain. J. Xiong, Y. Huang, *Hubei Univ. of Tech., People's Republic of China*

**LB30** Hypo-Phosphorylated HNRNPK Promotes Migration of Triple Negative Breast Cancer Cells Through an Aurora-A-Independent Manner. H.-Y. Tsai, C.-H. Lin, *Nat'l. Yang-Ming Univ., Taiwan*

**LB31** XCDxCDx-PHD, a Distinct Type of PHD-Finger. S. Basu, D. Boamah, F.A. Poppinga, T. Lin, S. Chakravarty, *South Dakota State Univ.*

**LB32** Terminal Sequences in the M Protein of Bovine Parainfluenza Virus Type 3 Is Important for Virus Egress. H. Ueda, *Univ. of Tsukuba, Japan*

**LB33** Effect of Acetylation on Liquid-Liquid Phase Separation and Amyloid Fibril Formation of Tau. Z. Zhao, M. Gao, Y. Huang, *Hubei Univ. of Tech., People's Republic of China*

**LB34** Acetylation of Lysine Residues Within the MT-Binding Repeats Specifically Modulates the Structure Ensemble of Tau. Z. Yao, M. Gao, Y. Huang, *Hubei Univ. of Tech., People's Republic of China*

**LB35** The Promoting Role of HNRNPK-DDX3 Interaction in the Apoptosis Upon DNA Damage. C.-C. Chen, J.-H. Yang, C.-H. Lin, *Nat'l. Yang-Ming Univ., Taiwan*

**LB36** Computational Studies on HdeA and Its pH-Dependent Activation. S. Pacheco, A. Ravinder, *California State Univ. and Northridge*

**LB37** Engineered Bacterial Tight Junctions: A High-Throughput Method to Identify Absorption Enhancers. J. Rollings, T. Worthington, D. Mizrahi, *Brigham Young Univ.*

**LB38** Structural Characterization of Vitis vitifera Associated T Cell Receptor: Towards the Development of Improved Melanoma Immunotherapy. A.R. Smith, J.M. Eby, C.M. Ankney, C. Cosgrove, S.W. Henning, M.I. Nishimura, C. Le Poole, B.M. Baker, *Univ. of Notre Dame, Loyola Univ. Chicago and Lurie Comprehensive Cancer Ctr.*

**LB39** Molecular Dynamics Study of the Effect of Multi-Target Compounds Binding onto BACE1. M. Zahran, J. Guevara, A. Martinez, *New York City Col. of Tech. and City Univ. of New York*

**LB40** A Review-Structure-Function Studies of Abrin: A Ribosome Inactivation Toxin. S. Singh, *DAV Univ., India*

**LB41** Crystal Structure of an Assembly Intermediate of Respiratory Complex II. P. Sharma, E. Maklashina, G. Cecchini, T. Iverson, *Vanderbilt Univ., Univ. of California, San Francisco and Sch. of Medicine*

**LB42** Pinning Down Psi<sup>+</sup> Inducibility. T.M. Brechtel, J. Villali, J. Davis, F. Pei, S.S. Sindi, T.R. Serio, *Univ. of Arizona, Brown Univ., Univ. of California, Merced, Univ. of Massachusetts and Amherst*

**LB43** Elucidating the Role of a  $\pi$ -Helical Region in a Thermophilic Enzyme from a Glycosyl Hydrolase Family. S.S. Jewlikar, S. Mohapatra, M. N., *Indian Inst. of Tech. Madras, India*

**LB44** Structure of Flexible Proteins Using Scattering and Simulation. L. Petridis, *Oak Ridge Nat'l. Laboratory*

**LB45** H<sub>2</sub>S-Induced Structural Changes of Insulin Protein in Early Lag Phase: Key to Detaining Amyloid Formation. D.A. Colon-Rios, A. Aldarondo-Torres, M.F. Rosario-Alomar, J. Lopez-Garriga, *Univ. of Puerto Rico at Mayaguez, Puerto Rico and Univ. at Albany*

**LB46** Electromyostimulation with Blood Flow Restriction Enhances Activation of mTOR and MAPK Signalling Pathways in Rat Gastrocnemius Muscles. T. Natsume, T. Yoshihara, H. Naito, *Juntendo Univ., Japan*

**LB47** The Evolution of Heterocomplexation and Multifunctionality in the S100 Protein Complex Calprotectin. J. Harman, A. Loes, R. Shi, M. Heaphy, M. Harms, *Univ. of Oregon*

**LB48** *Ganoderma Lucidum* Extract Decreases Inflammatory Breast Cancer Progression via Translational Control. D. M.M. Martinez-Montemayor, D. R.J. Schneider, D. C. Zhang, D.J. Andrade, D. I.J. Suarez-Arroyo, *Universidad Central del Caribe Sch. of Medicine, New York Univ. Sch. of Medicine and The Univ. of Chicago*

**LB49** The C-Terminus of CsgE Is Involved in Preventing Protein Aggregation. I. Aranda, A. Binmahfooz, K. Kaur, H. Rabi, L. Yeh, S. Jayasinghe, *California State Univ.*

**LB50** PKA R1 $\alpha$  Holoenzyme Crystal Structure Reveals Its Allosteric Regulation and Carney Complex Disease Implications. T.-W. Lu, J. Wu, L. Ahuja, P. Aoto, N. Sun, S. Taylor, *University of California and San Diego*

**LB51** Structural Characterization of Human Uridine Monophosphate Synthase (UMPS) and Its Spatio-Temporal Localization in Cells. D.M. Kim-Holzapfel, J. French, *Stony Brook Univ.*

**LB52** PFAR Purification Strategy and Structure Analysis. M.C. Ortiz-Rosario, C. Rullán-Lind, M. Pérez-Oquendo, Y. Morales-Lozada, R. González-Méndez, A. Baerga-Ortiz, *Univ. of Puerto Rico, Med. Sciences Campus, Puerto Rico, Univ. of Puerto Rico and Rio Piedras Campus, Puerto Rico*

**LB53** Spa47 Oligomerization Plays a Key Role in ATPase Activation and Function in the *Shigella* Type III Secretion System. J.L. Burgess, R.A. Burgess, N. Dickenson, *Utah State Univ.*

**LB54** MXin Differentially Regulates Monomeric and Oligomeric Species of the *Shigella* Type Three Secretion System ATPase Spa47. H. Case, N. Dickenson, *Utah State Univ.*

**LB55** Mechanistic Insight into Species-Specific Redox Partner Interactions in the Vitamin D Carbon-24 Hydroxylase CYP24A1. A. Kumar, D. F. Estrada, *Univ. at Buffalo*

**LB56** Spatial Organization of a cAMP/Ca<sup>2+</sup>-Regulated Signaling Complex: A Solution Structural Small-Angle X-Ray and Neutron Scattering Study of an AKAP79-Scaffolded Complex Containing Type II $\beta$  PKA and Calcineurin. J. Hall, J. Copps, P. Zhang, A. Heck, D. Blumenthal, S. Taylor, *Univ. of California, San Diego, The Scripps Res. Inst., Nat'l. Inst.s of Health, Utrecht Univ., Netherlands and Univ. of Utah*

**LB57** Characterization of a Novel S-Adenosylmethionine-Dependent Methylase by Electron Paramagnetic Resonance and Mössbauer Spectroscopies. M. Radle, J. LaMattina, S. Booker, *Penn State*

**LB58** Thermodynamics of the Interactions of FG-Nucleoporins and Transport Factors. S. Sparks, R. Hayama, M.P. Rout, D. Cowburn, *Albert Einstein Col. of Medicine and The Rockefeller Univ.*

**LB59** Curli Proteins CsgE and CsgF Inhibit the Aggregation of Human Islet Amyloid Polypeptide. N. Khan, M. Arlantino, E. Feliciano, H. Nguyen, S. Jayasinghe, *California State Univ.*

**LB60** Investigating Peptide Assembly in a Membrane Environment. M. Gessel, M. Kober, Z. Maxwell, S. Swain, *Univ. of Puget Sound*

**LB61** Interactive 3D Graphs Alongside Atomic Resolution Macromolecular Structures in the VR Space. A. Tran, Z. Zheng, J. Rohrer, S. Martins, Z. Radic, *Univ. of California, San Diego and Nanome Inc.*

**LB62** Structural Dynamics of Blue Light Sensitive Bacterial Photoreceptor BlsA. I. Chitrakar, J. French, *Stony Brook Univ.*

**LB63** *In Silico* Molecular Docking of Fisetin with the Amyloidogenic Peptides Human Amylin and A $\beta$ 42. J.A. Villanueva, T. Bamigboje, S.K. Hari, A. Boluwaduro, S. Gautham, A. Ibrahim, *InterNat'l. American Univ. Col. of Medicine, Saint Lucia*

**LB64** Hydration Mediated G-Protein-Coupled Receptor Activation. N. Weerasinghe, S.D. Fried, S.M. Perera, U. Chawla, M.F. Brown, *Univ. of Arizona*

**LB65** Aggregated CsgA Does Not Form In-Register Parallel Structures. M. Basham, C. Guevarra, O. Meza-Barajas, S. Jayasinghe, Godfrey, *California State Univ.*

## 2808 Enzyme Chemistry and Catalysis

**LB66** Organophosphate Hydrolase (Oph) Designed as a Functional Monomer. C. Baker, J. Santiago Garcia, R. Sweeney, S. Kirby, *U.S. Army Med. Res. Inst. of Chemical Defense*

**LB67** Characterization of Genetically Modified Mice as Improved Animal Models for Organophosphorus Nerve Agent Research. S. DeBus, E.N. Dunn, E.M. Matson, K.S. Morgan, J.H. McDonough, D.M. Cerasoli, C. L. Cadieux, *U.S. Army Med. Res. Inst. of Chemical Defense*

**LB68** Mimicking the Activation of the ADP-Glucose Pyrophosphorylase from *Agrobacterium Tumefaciens* by Site Directed Mutagenesis. M. Alghamdi, R. Hussien, H. Patel, E. Dobrzynski, A. Iglesias, M. Ballicora, *Loyola Univ. of Chicago and Universidad Nacional del Litoral, Argentina*

**LB69** Structural Insights into Mitochondrial ENDOG in Response to Oxidative Stress. H.S. Yuan, J.L. Lin, W.-C. Chu, *Academia Sinica, Taiwan and Nat'l. Yang-Ming Univ., Taiwan*

**LB70** Calcium-Induced Apoptosis in Cultured, Primary Corneal Endothelial Cells from Monkey. E. Nakajima, E.K. Gleason, R.D. Walkup, T.R. Shearer, M. Azuma, *Senju Pharmaceutical Co., Ltd. and Oregon Health & Science Univ.*

**LB71** Preliminary Characterization of Desulfinate DszB for Use in High-Throughput Validation of DszC Mutant Proteins. M. Sanchez, S. Truong, *California State Univ. and Northridge*

**LB72** The Production of an Antimicrobial Compound by Plant-Mediated Bioreduction of Benzofuranyl Methyl Ketone. N.Y. Cheatwood, M.Y. Harris, Stephen F. Austin State Univ.

**LB73** Dynamics and Bifunctional Substrate Activation by an Arginine Drive Catalysis in Plant Chalcone Isomerases. J. Burke, J. Noel, *Salk Inst.*

**LB74** Determining Invertase Enzyme Activity Using Isothermal Titration Calorimetry. D. Chan, J. Anderson, J. Kenealey, *Brigham Young Univ.*

**LB75** The Effects of Ethanol Extract of *Persea indica* Peel on the Oxidative Damage Induced by Diabetes in Rats. A.D. Ömür, B.D. Apaydin Yildirim, *Atatürk Univ., Turkey*

**LB76** In-Silico Comparative Structural Analysis of Human and Murine Cyclooxygenase-2 (COX-2). S.K. Hari, A. Boluwaduro, S. Gautham, J.A. Villanueva, *InterNat'l. American Univ., Col. of Medicine, Saint Lucia and InterNat'l. American Univ. Col. of Medicine, Saint Lucia*

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## Chemical Biology, Drug Discovery and Bioanalytical Methods

**LB77** A Unique Method for Antibody to Possess the Catalytic Function (3<sup>rd</sup> Report). T. Uda, Y. Akiyoshi, H. Taguchi, E. Hifumi, *Inst. of Systems, Information Technologies and Nanotechnologies (ISIT), Japan, Oita Univ., Japan and Suzuka Univ. of Med. Science, Japan*

**LB78** Quorum Sensing-Disrupting Molecules to Control Virulence of *Vibrio vulnificus*, a Fulminating Foodborne Pathogen. S. H. Choi, B. S. Kim, G. Choi, S. Y. Jang, M. H. Kim, *Seoul Nat'l. Univ., Republic of Korea and Korea Res. Inst. of Bioscience and BioTech., Republic of Korea*

**LB79** Utilizing Structure-Activity Relationships to Design Non-Oxime Reactivators. C. L. Cadieux, Z. Canter, K. Martin, M. Hepperle, D.M. Cerasoli, *U.S. Army Med. Res. Inst. of Chemical Defense*

**LB80** The Structural Diversity and the Biological Meaning of Antibody. E. Hifumi, Y. Akiyoshi, T. Uda, *Oita Univ., Japan, Inst. of Systems and Information Technologies and Nanotechnologies (ISIT), Japan*

**LB81** Isolation, Characterization, and Synthesis of Cuticular Hydrocarbon Natural Products from *Drosophila Athabasca*, a Species of Evolutionary Interest. J.F. Shuler, N. Lin, B.L. Gay, R. Yukilevich, J.D. Kehlbeck, *Union Col.*

**LB82** Characterization and Evaluation of ROS-Containing Photosystem I Light-Harvesting Complex I (PSI-LHCI) Isolated from the Green Microalga *Botryococcus Braunii* as a Potential Anticancer Drug. F.M. Joaquín Ovalle, G. Guihurt, V.C. Barceló-Bovea, J. Ramirez-Paz, K. Doble, A. Hani Saba, K. Griebenow, *Univ. of Puerto Rico - Río Piedras Campus, Puerto Rico*

**LB83** Multi-Wavelength Analytical Ultracentrifugation of Human Serum Albumin Complexed with Porphyrin. C.N. Johnson, G.E. Gorbet, H. Ramsower, J. Uriquidi, L. Brancaleon, B. Demeler, *The Univ. of Texas Health Science Ctr. at San Antonio and Univ. of Texas at San Antonio*

**LB84** Method Validation of Analytical Method for Determination of Extracts of Rosemary in Various Food Matrix. S-H. Choi, G-W. Jang, S-I. Choi, T-D. Jung, B-Y. Cho, X. Han, W-S. Sim, Y-C. Kim, O-H. Lee, *Kangwon Nat'l. Univ., Republic of Korea and Univ. of Massachusetts*

**LB85** Effect of CNTM on High-Fat Diet-Induced Obesity in C57BL/6J Mice. B-Y. Cho, S-I. Choi, T-D. Jung, S-H. Choi, W-S. Sim, X. Han, M-J. Ra, S-Y. Kim, I-J. Kang, K. C. Han, Y-C. Kim, O-H. Lee, *Kangwon Nat'l. Univ., Republic of Korea, Hongcheon Inst. of Medicinal Herb, Republic of Korea, Hallym Univ., Republic of Korea, Hatti Co., Ltd., Republic of Korea, Department of Nutrition and Univ. of Massachusetts*

**LB86** Analysis of the Food Components and Physiological Activities of *Brassica juncea* from Jeongseon. W-S. Sim, S-I. Choi, T-D. Jung, B-Y. Cho, S-H. Choi, X. Han, Y-C. Kim, O-H. Lee, *Kangwon Nat'l. Univ., Republic of Korea and Univ. of Massachusetts*

**LB87** Discovery and Characterization of Two Classes of Selective Inhibitors of the Suppressor of TCR Signaling Family of Proteins. W. Zhou, *Stony Brook Univ.*

**LB88** Development of Phage Display of Nisin. K.J. Hetrick, W.A. van der Donk, *Univ. of Illinois at Urbana-Champaign*

**LB89** Modeling Potential BACE1 Inhibitors. J. Guevara, M. Zahran, A. Department, *New York City Col. of Tech. and City Univ. of New York*

**LB90** Evaluating the Pharmacodynamics and Protective Efficacy of Catalytic Bioscavenger Following Subcutaneous Administration in Guinea Pigs. T. Dao, S. DeBus, M. Boeri, Z. Canter, D. Cerasoli, S. Kasten, *U.S. Army Med. Res. Inst. of Chemical Defense*

**LB91** Development of High-Throughput Assays for Testing of Potential Inhibitors of the Oncogenic G12C Mutant of KRAS. B.G. Vertessy, K. Nyiri, A. Steger, G. Koppány, *Budapest Univ. of Tech. and Economics, Hungary*

**LB92** Stigmasterol Solid-Lipid Nanoparticle Development for Lung Cancer Therapy. Z. Torres, Y. Delgado, K. Griebenow, *Universidad de Puerto Rico, Río Piedras Campus, Puerto Rico and San Juan Bautista Med. Sch., Puerto Rico*

**LB93** Quantitative Method Development and Validation of Naloxone and 6 $\alpha$ -Naloxol from Male African Green Monkey Plasma. V. V. R. Bandaru, J.N. Vignola, S.R. Litvin, A.M. Packer, A.S. Rizkallah, D.A. Orsini, S.A. Young, S.D. Soni, R.C. diTargiani, M.R. Pennington, B.R. Capacio, *U.S. Army Med. Res. Inst. of Chemical Defense*

**LB94** Functional Assignment of Structural Genomics Proteins Through Computed Chemical Properties, Graph Representation of Active Sites, and Biochemical Validation. C.L. Mills, R. Garg, J.S. Lee, R. Parasuram, L. Tian, A. Suciu, G. Cooperman, P. Beuning, M.J. Ondrechen, *Northeastern Univ.*

**LB95** Structural and Biochemical Characterization of Suppressor of T Cell Receptor Signaling (Sts) Proteins. Y. Yin, W. Zhou, J. Fench, *Stony Brook Univ.*

**LB96** Coupling Fluorescence-Activated Cell Sorting and Targeted LC-MS/MS for Epi-Proteomic Analysis of Normal Leukocytes. J. Camarillo, S. Swaminathan, N. Abshiru, J. Sikora, J. Morris, N. Kelleher, P. Thomas, *Northwestern Univ.*

**LB97** Predicting the Effects of GSP $\pi$  Polymorphism on Resistance to Ezatiostat. K.S. Risbud, A.N. Muwonge, K.M. Frey, *Long Island Univ. Pharmacy*

**LB98** Assessment of Novel Vitamin D Receptor Antagonists That Mediate Suppression of Vitamin D Signaling. L.J. Staniszewski, P. Shahani, M. Heck, D.S. Hasan, C. Wagner, P.W. Jurutka, *Arizona State Univ.*

**LB99** Synthesized-Chlorotoxin-Conjugated Cytochrome C as a Potential Drug for Targeting Glioma. L. J. Delino, J. Ramirez-Paz, J. A. González-Feliciano, R. Maldonado-Hernández, V. Barceló-Bovea, F.M. Joaquín Ovalle, P. F. Fulvio, K. Griebenow, *Univ. of Puerto Rico, Puerto Rico*

**LB100** Identification of Novel Scaffold for Pim1 Kinase Inhibition by Ligand Based Virtual Screening. K. Ranganna, O.P. Mathew, S. Milton, R. Thilgavathi, C. Selvam, *Texas Southern Univ. and Karpagam Academy of Higher Education, India*

**LB101** Chemoinformatics Profiling of the Bioactive Fraction of Bizzu Nut. W. Gray, O. Philips, C. Telles, *Southern Univ. Baton Rouge*

**LB102** Computational Design and Experimental Evaluation of Novel Perezon Derivates as Anticancer Agents. M. Hernández Rodríguez, P. Mendoza Sánchez, E. Mera Jimenez, M.I. Nicolás Vázquez, R. Miranda-Ruvalcaba, *Facultad de Estudios Superiores Cuautitlán, UNAM, Mexico, Escuela Superior de Medicina and Instituto Politécnico Nacional, Mexico*

**LB103** Reversal of Peripheral and CNS Mediated A1 Adenosine Receptor Hypotension. B.W. Laughlin, I. Bailey, S. Tagaban, K. Drew, *Univ. of Alaska Fairbanks*

**LB104** Connection Between Antimicrobial Venom Peptides and Bacterial ATP Synthase. H. Syed, Z. Ahmad, A. T. Still *Univ.*

**LB105** Computational Analysis of 1,2-Dialkynylpyrroles. J. Bondoc, S. Kerwin, *Texas State Univ.*

**LB106** Mass Spectrometry of Bacterial Outer Membrane Enzymes Within the Native Lipid Environment. M. Esmaili, J. Li, R. Bishop, J. Klassen, M. Overduin, *Univ. of Alberta, Canada and McMaster Univ., Canada*

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## Genomics, Proteomics and Metabolomics

**LB107** Discovering Drug Resistance-Associated Biomarkers from Malignant Pleural Effusion of Lung Cancer by Quantitative Proteomic Approaches. C.-J. Yu, I.-C. Chiou, C.-L. Wang, T.-F. Hsiao, *Chang Gung Univ., Taiwan and Chang Gung Memorial Hosp., Taiwan*

**LB108** Mouse Knockout Metabolomics Elucidates Metabolic Functions of Mammalian Genes. E. Axton, D. Barupal, O. Fiehn, *Univ. of California and Davis*

**LB109** Rapid Protein Analysis and Western Blotting by Capillary Gel Electrophoresis. K. Lutgeharm, M. Ver Meer, J. Clair, *Advanced Analytical Technologies and Inc.*

**LB110** Differential Methylation Variability Between Atherogenic and Normal Human Aortas, and Its Association with Mitochondrial Function. N. Fragoso-Bargas, M. A. Pescador-Tapia, D. Rodriguez-Rios, S. Zaina, G. Lund, *Ctr. for Res. and Advanced Studies of the Nat'l. Polytechnic Inst., Mexico, Division of Health Sciences and León Campus Univ. of Guanajuato, Mexico*

**LB111** Amyloids and Pre-Amyloids from the PDB. V. Grolmusz, K. Takacs, B. Varga, *Eotvos Univ., Hungary*

**LB112** Genome-Wide Analysis of Single Nucleotide Variants on Phosphorylation Motifs. H. Yoshizaki, Y. Ling, M. Kohno, S. Okuda, *Kanazawa Med. Univ., Japan and Niigata Univ., Japan*

**LB113** Peripheral Blood Mitochondrial DNA Copy Number, a Potential Marker of Non-Alcoholic Fatty Liver Disease?. M. A. Pescador Tapia, N. Fragoso-Bargas, D. Rodríguez-Ríos, M. L. Lazo-de-la-Vega-Monroy, L. D. R. Ibarra-Reynoso, Y. Ruiz-Noa, M. D. C. Preciado-Puga, M. Velazquez-Villafañá, B. Jordan-Pérez, S. Garnelo-Cabañes, J. R. García-Ramírez, G. Lund, *Ctr. for Res. and Advanced Studies of the Nat'l. Polytechnic Inst., Mexico, Univ. of Guanajuato, Mexico and Hosp. General Regional de León, Mexico*

**LB114** Epigenome-Wide Association Study of Incident Cardiovascular Disease. K. Westerman, J. Ordovas, *Tufts Univ.*

**LB115** An RNA-Sequencing Approach to Understanding the Genetic Influences on Fetal Alcohol Syndrome. S. Bingham, A. Gallagher, A. Flores, J. Trinidad, V. Arboleda, J. de Almeida Rego, D. Villada, *Barry Univ.*

**LB116** Gene Ontology Analysis of and Subtyping of Breast Tumors by RNA-Seq and Bingo. P. Soneral, C. Skorseth, *Bethel Univ.*

**LB117** Mass Spectrometry Based Proteomics Investigation of Induced Obstructive Sleep Apnea (OSA) in Rat Atria. C. C. Darie, D. Channaveerappa, K. L. Wormwood, J. Lux, B. Panama, *Clarkson Univ. and Masonic Med. Res. Laboratory*

**LB118** Proteomic Analyses of Plant Exosomes. B. Özdemir, H. Çimen, *Yeditepe Univ., Turkey*

**LB119** Identification of XbaI Polymorphism of the Estrogen Receptor Alpha in Mexicans at Early Postmenopause. G. Lugo-Martínez, C. A. Jiménez-Zamarripa, E. O. Madrigal-Santillán, C. C. Calzada-Mendoza, *Escuela Superior de Medicina, Instituto Politécnico Nacional, Mexico and Instituto Politécnico Nacional, Mexico*

**LB120** Novel Bioinformatics Tools for Omics Data Analysis and Visualization. P. D. Karp, S. Paley, R. Billington, *SRI InterNat'l.*

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## Bacteria and Parasites: From Microbiome to Antibiotics

**LB121** Computing Metabolic Routes in the Human Microbiome. P. D. Karp, P. D. Karp, M. Krummenacker, M. Krummenacker, *SRI InterNat'l.*

**LB122** Effect of Coordinated Probiotic/Prebiotic/Phytobiotic Supplementation on Microbiome Balance and Psychological Mood State in Healthy Stressed Adults. S. Talbott, S. Talbott, B. Stephens, B. Stephens, J. Talbott, J. Talbott, M. Oddou, M. Oddou, *Amare Global, Wasatch Scientific and EQQIL*

**LB123** Antibiotic Susceptibility Studies and Protein Degradation by Fungi Growing in Aerobic and Anaerobic Conditions. B. Mercado, P. Bayman, *Univ. of Puerto Rico and Rio Piedras Campus, Puerto Rico*

**LB124** Utilization of Semi-Solid Agar Inoculation in Microbial Co-Culture: A Novel Protocol for Antibiotic Discovery. S. I. Slaughter, V. E. Cadet, *Georgia Campus-Philadelphia Col. of Osteopathic Medicine*

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## Signal Transduction and Cellular Regulation

**LB125** Enhanced Chemotactic Response of MDA-MB-231 Breast Cancer Cells Towards Stable Gradients of EGF. J. Schwarz, V. Kutenberger, N. Baumann, E. Horn, R. Zantl, *ibidi GmbH, Germany*

**LB126** Inhibitors Targeting IGF-1R and mTOR Induce Synergistic Cell Growth Inhibition and Enhance Apoptotic Activity in Cancer Cell Lines. G. Warshamana-Greene, A. Panthi, *South Carolina State Univ.*

**LB127** Calmodulin Binds to and Inhibits H-RAS Activation of PI3K: A Single Molecule Study. T. Buckles, B. Ziemba, G. Masson, R. Williams, J. Falke, *Univ. of Colorado Boulder and Med. Res. Council Laboratory of Molecular Biology, United Kingdom*

**LB128** Abrogation of TGF- $\beta$  Signaling in Dendritic Cells Leads to E-Cadherin-Mediated Adhesion Between Dendritic Cells and Epithelium Which Contributes to the Pathogenesis of Inflammatory Bowel Disease. S. Ihara, Y. Hirata, K. Koike, *The Inst. for Adult Diseases, Asahi Life Foundation, Japan, The Inst. of Med. Science, The Univ. of Tokyo, Japan, Graduate Sch. of Medicine and The Univ. of Tokyo, Japan*

**LB129** Exploring the Intersection of Cellular Zinc and Kinase Activity with Single Cell Imaging. K. J. Anson, A. Palmer, *Univ. of Colorado Boulder*

**LB130** Characterization of Akt Isoform Responses to Insulin and IGF-I in Primary Human Skeletal Myotubes. A. V. Geddis, R. W. Matheny, *U.S. Army Res. Inst. of Environmental Medicine*

**LB131** Protective Effect of Thymol Essential Oil from *Thynus Quinqucostatus* Extracts on UV Irradiation-Induced Skin Aging by Suppressing MMP-1 Expression and Collagen Degradation. T. H. Lee, H. Jung, S. M. Lee, Y. Park, *Kyung Hee Univ., Republic of Korea*

**LB132** PINX1 Promotes Malignant Transformation of Thyroid Carcinomas Through Akt, MAPK, and  $\beta$ -Catenin Signaling Activation. J. Kang, S. Park, J. K. Myung, *Korea Inst. of Radiological and Med. Sciences, Republic of Korea*

**LB133** Dishevelled Has YAP Nuclear Export Function in a Tumour Suppressor Context Dependent Manner. H. E. Kang, Y. Lee, *Yonsei Univ. Col. of Dentistry, Republic of Korea*

**LB134** PGF and VEGF-C Secreted by Preosteoclasts Induce Migration and Differentiation of Mesenchymal Stem Cells. J.-E. Huh, S. Yi, S. Y. Lee, *Ewha Womans Univ., Republic of Korea*

**LB135** SOCS3 Down-Regulates ROS Signaling and Inhibits M1 and M2 Human Macrophage Polarization. C.-E. Lee, H.-Y. Yoon, H. Jeong, *Sungkyunkwan Univ., Republic of Korea*

**LB136** The Psycho-Neuro—Immuno Axis of Cancer. A. L. Zillow, O. L. Tulp, G. P. Einstein, *Univ. of Science, Arts and Tech. Montserrat, Montserrat, Univ. of Science, Arts and Tech. Montserrat and Einstein Med. Inst.*

**LB137** A Haloacid Dehalogenase of *Candida Albicans*: An Uncharted Territory. S. Ghosh, K. Hanumantha Rao, *Univ. of Kalyani, West Bengal, India, Nat'l. Inst. of Plant Genome Res. and New Delhi, India*

**LB138** The Receptor Tyrosine Kinases TYRO3 and AXL Are Co-Regulated and Activate Discrete Signaling Pathways for Cancer Cell Proliferation and Invasion Respectively. S. Hafizi, N. Al Kafri, M. Vouri, *Univ. of Portsmouth, United Kingdom and German Cancer Res. Ctr. (DKFZ), Germany*

**LB139** Arl4d Modulates Microtubule Dynamics via Its Interaction with Ebl1. F.-J.S. Lee, S.-J. Lin, C.-F. Huang, T.-S. Wu, C.-C. Li, *Nat'l. Taiwan Univ., Taiwan*

**LB140** Inhibitory Action of cTPx II on Respiratory Growth of Yeast as a Possible Physiological Function. M.-K. Cha, K.-J. Kim, S.-K. Hong, Y.-M. Oh, I.-H. Kim, *Paichai Univ., Republic of Korea*

**LB141** Nutrient/Starvation Sensing for Reciprocal mTORC1/AMPK Response in *Dictyostelium*, at the Junction Between Growth and Development. P.K. Jaiswal, A.R. Kimmel, *Nat'l. Inst.s of Health*

**LB142** The Novel Cardio-Oncology Drug, NP-6A4, Regulates the Growth of Multiple Breast Cancer Cell Lines Through Distinct Cell-Specific Mechanisms. L. Pulakat, A.M. Belenchia, R.G. Toedebusch, *Univ. of Missouri*

**LB143** Yeast and Cancer: Common Mechanism Underlying Activation of Ras by Glycolytic Flux. F. Van Leemputte, Peeters, Fischer, Haesen, Ward, Bonini, Quezada, Bravo, Versées, Janssens, Tompa, Thevelein, *Katholieke Universiteit Leuven-VIB, Belgium, KU Leuven, Belgium, VUB, Belgium and KU Leuven Laboratory of Protein Phosphorylation and Proteomics, Belgium*

**LB144** EGR1 Interacts with TBX2 and Functions as a Tumor Suppressor in Rhabdomyosarcoma. T.S. Mohamad, J. Davie, *Salahaddin Univ.-Erbil, Iraq and Southern Illinois Univ.*

**LB145** Double-Stranded RNAs Attenuate Interferon Response via Parkin-Mediated MAVS Ubiquitination. S.-J. Kim, D.-G. Ahn, G.H. Syed, A. McMillan, S. Thomas, M. Gale Jr., B.-T. Kim, A. Siddiqui, *Korea Res. Inst. of Chemical Tech., Republic of Korea, Univ. of California, San Diego, Univ. of Washington and Seattle*

**LB146** Cooperative Inhibition of Wnt/ $\beta$ -Catenin Signaling by Klotho and Vitamin D: Implications for Chemoprevention. S. Khan, Z. Khan, G. Whitfield, M. Haussler, P. Jurutka, *Arizona State Univ. and Univ. of Arizona Col. of Medicine - Phoenix*

**LB147** Phenotype Analysis of Myo10 Knockout Mice Lacking the Motorized Full-Length, but Not the Brain-Specific Headless Isoform. A.C. Bachg, M. Horsthemke, B.V. Skryabin, T. Klasen, N. Nagelmann, C. Faber, E.F. Woodham, L.M. Machesky, S. Bachg, R. Stange, H.-W. Jeong, R.H. Adams, M. Bähler, P.J. Hanley, *Westfälische Wilhelms-Universität Münster, Germany, Univ. Hosp. Münster, Germany, Univ. of Glasgow, United Kingdom, Max Planck Inst. for Molecular Biomedicine, Univ. of Münster and Faculty of Medicine, Germany*

**LB148** NLRP12 Binds to HCK Potentially Regulating the NF- $\kappa$ B Pathway. Y. Zhang, C. Okamoto, *Univ. of Southern California*

**LB149** An Active-Like Src Conformation Explains Its Dynamic Regulation. L. G. Ahuja, Y. Meng, A.P. Kornev, B. Roux, S. Taylor, *Univ. of California, San Diego and Univ. of Chicago*

**LB150** Sestrin2 Supports Lung Tumor Growth in Early Stages of Cancer Development in Mice but Might Play a Tumor Suppressive Role in the Late Stages of Carcinogenesis. A.V. Budanov, B. Ding, A. Parmigiani, P.M. Chumakov, J. H. Lee, A. Chawla, S. Grossman, *Trinity Col. Dublin, Ireland, Virginia Commonwealth Univ., Engelhard Inst. of Molecular Biology, Russian Federation and Univ. of Michigan*

**LB151** Pasteurella Multocida Toxin Mediated ECM Expression Is Independent of mTOR Signaling Pathway. H. Oubrahim, M. Leong, B.P. Chock, *Nat'l. Inst.s of Health*

**LB152** Over-Expression of Mutant Rheb2 Proteins and mTOR Signaling. N. Parmar, *CSU Channel Islands*

**LB153** The Role of Renal Epithelial Cell Crosstalk in the Regulation of Cyclosporine A-Induced MMP-9 Production in Calcineurin Isoform-Specific Renal Fibroblasts. C. E. Francis, C. Nguyen, L. Mata, Y. Bai, *Philadelphia Col. of Osteopathic Medicine*

**LB154** Downregulation of Autophagy-Regulatory Proteins Contributes to Induction of Replicative Senescence in Hs68 Cells. M. Lee, S.-H. Hwang, *Incheon Nat'l. Univ., Republic of Korea*

**LB155** Vitamin D Stimulates Serotonin Production via Induction of the Tryptophan Hydroxylase 2 Isoform in B14 Rat Medullary Neurons. D.A. Lucas, M.S. Sabir, S. Mallick, G.K. Whitfield, M.R. Haussler, P.W. Jurutka, *Mathematical and Natural Sciences, Arizona State Univ., Basic Med. Sciences and Univ. of Arizona Col. of Medicine*

**LB156** Poly(ADP-ribosyl)ation of OVOL2 Regulates Aneuploidy and Cell Death in Cancer Cells. R. Zhang, Y.-C. Liou, *Nat'l. Univ. of Singapore, Singapore and Nat'l. Univ. of Singapore, Singapore*

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## Metabolism, Bioenergetics and Nutritional Biochemistry

**LB157** Modulatory Effect of Cashew (Anacardium Occidentale L.) Nut Supplemented Diet on Fertility Activity of Clomiphene Citrate in Male Rats. S. Akomolafe, *Ekiti State Univ., Nigeria*

**LB158** Cry1 Dysregulation Leads to Hyperglycemia in Diabetic Mice. Y. Kim, G. Lee, J. Kim, *Seoul Nat'l. Univ., Republic of Korea*

**LB159** Liraglutide Improves Insulin Sensitivity in Diabetic Mice Through Reduction of Inflammation and Induction of Thermogenesis. J. Zhou, A. Poudel, L. Li, *Central Michigan Univ.*

**LB160** Effect of Deltamethrin on the Fragility of Red Blood Cells in Albino Rats. S.E. Umunnakwe, Chidi, Friday, *Abia State Univ. and Uturu, Nigeria*

**LB161** Subnormothermic Regulated Hepatic Reperfusion Preserves Mitochondrial Function in Swine Liver Procured After Cardiac Death. D.F. Stowe, M. Yang, J. Mishra, J. Kim, J.S. Heisner, M. Zimmerman, A.K. Camara, J. Hong, *Med. Col. of Wisconsin*

**LB162** Biomedical Status of Women Attending in-Vitro Fertilization Clinics in Nigeria. O.A. Gbenle, M.N. Igwo-Ezikpe, I.A. Taiwo, O.A. Anyashina, O.N. Ofoma, O.O. Ikwuazom, *Univ. of Lagos, Nigeria*

**LB163** Investigation of the Effects of SULT2A1 Genetic Polymorphisms on the Sulfation of Dehydroepiandrosterone by Human Cytosolic Sulfotransferase SULT2A1. M. Abunnaja, M.-C. Liu, *Univ. of Toledo and Col. of Pharmacy and Pharmaceutical Sciences*

**LB164** Nutrition, Microbiome, Aging, and Cancer. A.L. Zillow, G. Riscuta, T.L. Brown, O.L. Tulp, G.P. Einstein, *Univ. of Science, Arts and Tech. Montserrat, Montserrat, Nat'l. Cancer Inst., Nat'l. Inst.s of Health and Einstein Med. Inst.*

**LB165** Analysis of Alaskan Wild Bog Blueberries Anthocyanins in the Mitigation of Type II Diabetes. B. Callahan, A. Collin, T. Kuhn, *Univ. of Alaska Fairbanks*

**LB166** Punica Granatum Rind Extract Promotes Mouse Liver Mitochondrial Function and Attenuates Paraquat Toxicity in a *Caenorhabditis Elegans* Model. C. Mowery, R. Ramanathan, A. Johny, *Oklahoma State Univ. and Univ. of Minnesota*

**LB167** Specific Profiles of Circulating Mediators Characterize Older Persons with Physical Frailty and Sarcopenia. R. Calvani, A. Picca, F. Marini, A. Biancolillo, J. Gervasoni, S. Persichilli, A. Primiano, F. Landi, R. Bernabei, E. Marzetti, *Catholic Univ. of the Sacred Heart, Teaching Hosp. "Agostino Gemelli", Italy, Sapienza Univ. of Rome, Italy and Fondazione Policlinico Universitario A. Gemelli, Italy*

**LB168** Effect of High-Sucrose and High-Fructose Diets on Adipose Tissue Dysfunction and Metabolic Syndrome. A. Sakamuri, S. Jeyapal, S. R. Kona, S. Pothana, A. Ibrahim, *Nat'l. Inst. of Nutrition, India*

**LB169** Binding of 4-Hydroxy-2-Nonenal Decrease Non-Enzymatic Methemoglobin Reducing Capacity. P. Wilson, C. Mowery, R. Ramanathan, *Oklahoma State Univ.*

**LB170** Calcium Regulation of Mitochondrial Respiration Is Substrate Dependent and Tissue Specific. S.M. Kandel, N. Tomar, S.H. Audi, A.K.S. Camara, A.W. Cowley, R.K. Dash, *Med. Col. of Wisconsin and Marquette Univ.*

**LB171** Decreased Dietary N-6/N-3 PUFA Ratio by Supplementing 18:3 and Long Chain N-3 PUFA Protected Rats from Fructose-Induced Adipose Tissue Dysfunction and Insulin Resistance. A. Sakamuri, S. Jeyapal, S. R. Kona, S. Pothana, A. Ibrahim, *Nat'l. Inst. of Nutrition, India*

**LB172** Shifting Nitrogen Balance Induces Arousal from Hibernation in Arctic Ground Squirrels. S.A. Rice, A. D'Alessandro, Z. Barati, S. Gehrke, J.A. Reisz, K. Drew, *Univ. of Alaska at Fairbanks, Univ. of Colorado at Denver and Inst. of Arctic Biology*

**LB173** Dietary 18:3 and Long Chain N-3 PUFA Protected Rats from Fructose-Induced Oxidative and Endoplasmic Reticulum Stress in Visceral Adipose Tissue. A. Sakamuri, S. Jeyapal, S. R. Kona, S. Pothana, A. Ibrahim, *Nat'l. Inst. of Nutrition, India*

**LB174** Effect of Dietary Alpha-Linolenic Acid and Long-Chain N-3 Polyunsaturated Fatty Acids on Fructose-Induced Hypertriglyceridemia, Hepatic Oxidative Stress and Inflammation. A. Sakamuri, S. Jeyapal, S. R. Kona, S. Pothana, A. Ibrahim, *Nat'l. Inst. of Nutrition, India*

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### Lipids and Membranes

**LB175** Triglycerides Analysis in Adipose Tissue from Insulin Sensitive and Insulin Resistance Obese Patients. H.A. Alsulaiti, Harvey, Latiff, Elrayess, *Anti-Doping Lab Qatar, Qatar*

**LB176** Proteomic Profiling of Exosomes Leads to the Identification of Novel Biomarkers for Prostate Cancer Progression. K. J. Shin, Y.-K. Seo, Y. Yoo, *Ulsan Nat'l. Inst. of Science and Tech., Republic of Korea and Korea Res. Inst. of Bioscience and BioTech., Republic of Korea*

**LB177** Membrane Curvature and Pore Formation Induced by Antimicrobial Peptides. H. K. Lee, *Dankook Univ., Republic of Korea*

**LB178** Lipid Membrane Interaction of Amyloidogenic Peptides. S. Dey, A. Gupta, D. Bhowmik, A. Das, A. Rawat, S. Maiti, *Tata Inst. of Fundamental Res., India*

**LB179** Analysis of Experimental Feed Impacts on Fatty Acid Profiles of Captive and Wild Arctic Ground Squirrels. M.L. Mikes, S.A. Rice, D. Bibus, K. Drew, *Univ. of Alaska and Lipid Technologies*

**LB180** Reproducibility of Phosphoinositide Lipid Extraction and Presentation in Bioanalytical Assays. A.M. Branch, P.O. Neilsen, *Echelon Biosciences*

**LB181** Physicochemical Analysis of Outer Membrane Vesicles Isolated from *Escherichia Coli* Harboring the PKS Genes. Y. Morales-Lozada, S. Torres-Montañez, R. Muñoz-Santiago, D. C. Díaz-Cartagena, R. Gómez-Moreno, A. Baerga-Ortiz, *Univ. of Puerto Rico, Rio Piedras Campus, Puerto Rico, Univ. of Puerto Rico, Cayey Campus, Puerto Rico, Univ. of Puerto Rico and Med. Science Campus, Puerto Rico*

**LB182** Phosphoinositide Signaling Meets Heme Biochemistry. D. Khan, J. Wofford, G. Gulten, J. Sacchetti, P. Lindahl, V. Bankaitis, *Texas A&M Univ.*

**LB183** Endocannabinoid and Cannabinoid Metabolism by CYP Epoxigenases. A. Das, *Univ. of Illinois at Urbana-Champaign*

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### Organelles and Trafficking

**LB184** The HUS-Box Is Required for Allosteric Regulation of the Sec7Arf-GEF. S. Halaby, C. Fromme, *Cornell Univ.*

**LB185** Imaging and Quantifying Mitochondrial Morphology: A Focus on the 3D Freeware Mitograph. M.C. Harwig, M.P. Viana, J.M. Egner, J. Harwig, M.E. Widlansky, S.M. Rafelski, R.B. Hill, *Med. Col. of Wisconsin, Univ. of California, Irvine, Visallo and LLC*

**LB186** The Hydrophobic Domain of ENV9 Is a Lipid Droplet Localization Signal in *Saccharomyces Cerevisiae*. A. Ricci, S. Valencia, I. Siddiqah, S. Manandhar, E. Gharakhanian, *California State Univ. and Long Beach*

**LB187** The Role of Platelet Syntaxins in Endocytosis. L. Tichacek, S.W. Whiteheart, *Univ. of Kentucky*

**LB188** C-Terminal Domain Is Responsible for a Kunitz-Type Inhibitor Uptake by Tumor Cells. A.M. Chudzinski-Tavassi, K.L.P. Morais, D. Servent, J.M. Sciani, A. Iqbal, *Butantan Inst., Brazil and Atomic Energy and Alternative Energies Commission, France*

**LB189** Internalization and Intracellular Trafficking of an Antitumor Molecule. K. Morais, M.B. Goldfeder, J.M. Sciani, A.M. Chudzinski-Tavassi, *Butantan Inst., Brazil*

**LB190** SYP73 Is a Novel Membrane-Associated Actin-Binding Protein That Anchors the ER to the Actin Cytoskeleton in Arabidopsis. P. Cao, L. Renna, G. Stefano, F. Brandizzi, *Michigan State Univ.*

**LB191** Valproate Prevents a Cytosolic Vh<sup>+</sup> ATPase Subunit Insertion on Insulin Granule Membrane and Compromises Insulin Release in Min6 Cells. N. Yedulla, A. Naik, W. Yu, K.M. Kokotovich, M. Greenberg, B. Jena, *Wayne State Univ. Sch. of Medicine and Wayne State Univ.*

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### Glycans and Glycobiology

**LB192** Chemical X Promotes the Osteogenesis and Inhibits the Adipogenesis Through Inhibition of Lipid Metabolic Enzyme. H.-J. Jang, P.-G. Suh, *Ulsan Nat'l. Inst. of Science and Tech., Republic of Korea*

**LB193** *Fasciola Hepatica* Glutathione S-Transferase (FhGST) Conformational Studies and Its Effect on the Suppression of Toll-Like Receptors Stimulation. B.N. Valdes Fernandez, V. Aguayo, C. Ruiz Jimenez, M. Ramos, A. Espino, *Univ. of Puerto Rico, Rio Piedras Campus, Puerto Rico, Univ. of Puerto Rico, Med. Sciences Campus, Puerto Rico and Univ. of Puerto Rico, Med. Science Campus, Puerto Rico*

**LB194** Structure and Function of N-Glycans in Cobra Venom Glycoproteins: Site Specific Glycosylation for Structural Stability and Terminal Sialic Acid for Target Selection. K. Y. Chien, W. G. Wu, B. H. Bui, C. C. Lin, *Chang Gung Univ., Taiwan and Nat'l. Tsing Hua Univ., Taiwan*

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### Society for Experimental Biology and Medicine (SEBM) Interdisciplinary Research

**LB195** Assessment of Hormone Receptor Profile in Breast Cancer Using 18F-Fluro-Estradiol PET CT: A Pilot Study. S. Vuthaluru, R. Kumar, A. Sharma, P. Suhani, S. Mathur, R. Parshad, *All India Inst. of Med. Sciences, India and All India Inst. of Med. Sciences, India*

**LB196** Subcellular Distribution of the Dopamine Transporter Phosphorylated on Threonine 53. T.J. Gilchrist, Z.S. Gaarder, M.J. Hoyde, R.A. Vaughan, J.D. Foster, *Univ. of North Dakota Sch. of Medicine and Health Sciences*

**LB197** Influence of Mesenchymal Stem Cells on Qualitative and Quantitative Characteristics of Energy Transformation in Muscle Tissue of Lower Extremity in Ischemia. I. Shypilova, R. Gami, *All Saints Univ., Saint Vincent and the Grenadines*

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### Education and Professional Development—General (BMB)

**LB198** The Design of Sci-57: An Ultrastable, Rapid-Acting, Single-Chain Insulin Analog. M. Park, *The Nueva Sch.*

**LB199** The Use of Pharmacogenetics in Targeting SGLT2 and Its Variants. A. Fassler, *Sch. District of Marshfield*

**LB200** Reenergized Adoptive Cell Transfer Immunotherapy. C. Kaiser, K. Klestinski, W. Cui, M. Chang, N. Cowan, S. Smith, D. Strom, J. Strom, *Marquette Univ. High Sch., Blood Res. Inst. and Blood Ctr. of Wisconsin and Med. Col. of Wisconsin*

**LB201** Scientific Community Outreach: Promoting Science to Students at the K-12 Level and Stem Students in ASBMB UPR-RP. E.D. Navarro, M.G. Perez-Oquendo, J. Ramirez-Lugo, *Universidad de Puerto Rico and Rio Piedras Campus, Puerto Rico*

**LB202** The Use of Single-Domain Antibodies from *Camelidae* for the Inhibition of *Clostridium Difficile* Toxins A and B. S. Wall, A. Akman, Z. Chafe, A. Chow, M. Deng, F. Dumitrascu, K. Erisoglu-Akyildiz, I. Hernandez-Oviedo, K. Hu, R. Muscant, T. Nguyen, C. Niu, T. Rulko, H. Samad, N. Sullivan, E. Wa, Y. Wu, M. Xiao, *Ashbury Col., Canada and Ashbury, Canada*

**LB203** Serine Rich Splicing Factor 2 (SRSF2) Flips for RNA Binding. M. Arnholt, M. Bohn, M. Cina, A. Downing, M. Flanagan, L. Hautala, A. Jaeke, C. Kennedy, B. Lane, A. O'Bryon, J. Pepin, E. Rohloff, F. Rrahmani, S. Schmitt, J. Spudich, S. Staus, K. Tadlock, M. Tomashek, E. Witt, M. McNally, *Hartford Union High Sch. and Med. Col. of Wisconsin*

**LB204** Yo Gaba<sub>A</sub> Gaba<sub>A</sub>; How the Structure of Human Gaba<sub>A</sub> Receptor Affects the Action of Anesthetics. S. Strandberg, S. Fleischmann, E. Bauer, S. Franczak, E. Fricker, A. Griffith-Topp, M. Jessick, C. Kuehn, C. Lois, C. Sargent, L. Schraufnagel, S. Strandberg, C. Strother, J. Strother, L. Thota, S. Urban, R. Peoples, *Divine Savior Holy Angels High Sch., Divine Savior Holy Angels and Marquette Univ.*

**LB205** Constructing a 3-D Molecular Model to Highlight the Conversion of the Normal Protein PrP<sup>C</sup> into the Mutated PrP<sup>Sc</sup> in a Prion Disease. E.F. Schmitt Lavin, A. Barraza, H.G. Bui, R. Speth, *Nova Southeastern Univ.*

**LB206** The Mechanism of Ras Nucleotide Exchange in the Mitogen Activating Pathway. D. Shannon, B. Hall, K. Peters, J. Glass, L. Gutzwiller, S. Buehler, C. Shirley, N. Lima, N. Nassar, Moeller, *Mount Notre Dame High Sch. and Children's Hosp. Med. Ctr.*

**LB207** Evolution of Structure-Function Relationships in Modern Estrogen Receptors and the Reconstructed Ancestral Steroid Receptor I. A. Peterson, L. Bunday, E. Bussmann, S. Chadha, J. Ridler, E. Romashkova, *Minnetonka High Sch.*

**LB208** In with the Good and Out with the Bad — The Role of SR-BI in Lowering Blood Cholesterol Levels. K. Tiffany, A. Arnholt, D. Arzumanyan, L. Arzumanyan, M. Barber, E. Copes, T. Crow, E. Esser, A. Kuborn, K. Reinhardt, B. Tiffany, A. Woods, D. Sahoo, *Cedarburg High Sch. and Med. Col. of Wisconsin*

**LB209** Understanding the Structure and Function of Cone Snail Insulin as a Substitute for Human Insulin. J. Lane, M. Firminger, E. Fraser, M. Geiger, S. Morris, M. Ryan, *Mahtomedi High Sch.*

**LB210** Abcd: The Language of Replication Protein A (RPA). M. Schuld, J. Perez, C. Anderson, R. Bhatia, M. Ehlers, K. Leger, H. Lentz, S. Marsh, B. Haralson, A. Puls, S. Sheikh, A. Smith, M. Spellecy, M. Sweeney, A. Ya, E. Antony, *Ronald Reagan High Sch. and Marquette Univ.*

**LB211** Investigating the Role of the BRCA2 C-Terminus in Homologous Recombination. A. Chiang, N. Ladino, K. Lee, A. Lu, N. Srikanth, W. Stearns, C. Wen, S. Williams, R.B. Jensen, M.E. D'Ausilio, *The Pingry Sch. and Yale Univ.*

**LB212** An Exploration of the Algal Protein Channelrhodopsin and the Origins of Optogenetics. D. Smalley, E. Mackenzie, M. Meyer, H. Ouang, A. Pandit, M. Parthasarathy, S. Rai, L. Seeley, H. Smuckler, E.M. Kessler, *Blue Valley North High Sch. and Ctr. for Advanced Professional Studies (CAPS)*

**LB213** Human Insulin vs. Genetically Engineered Fast Acting Insulins. F. Mukhtar, P. Veljkovic, M. Melnyk, Y. Smetanin, D. Gong, D. Lawal, M. Drohomysky, G. Mingolelli, *CPS*

**LB214** Insulin, You're Confusing the Systems. B.A. Bartolomei, S.R. Mergens, R.A. Love, A.W. Shipley, S.A. Martinez, *El Capitan High Sch.*

**LB215** Structure Analysis and Phenotype of the Ptf1-J/Ptf1a P191t Mutant Heterotrimeric Complex. W. Coats, N. Ali, A. Ali, L. Davies, J. Sterling, L. De Leon, E. Sandoval, A. Pacheco, K. Montes, I. Guerrero, E. Jordan, A. Mulley, *Hillcrest High Sch.*

**LB216** Augmented Reality as an Educational Tool for Teaching Macromolecular Structure and Function. R.-J. Sung, A. Wilson, L. Crowl, J. Nardi, K. St. Clair, *Carleton Col.*

**LB217** A Survey Course for STEM Students to Understand Diversity and Inclusion Through Readings, Discussion and Reflection. M.A. Benore, S.R. Smith, *Univ. of Michigan-Dearborn*

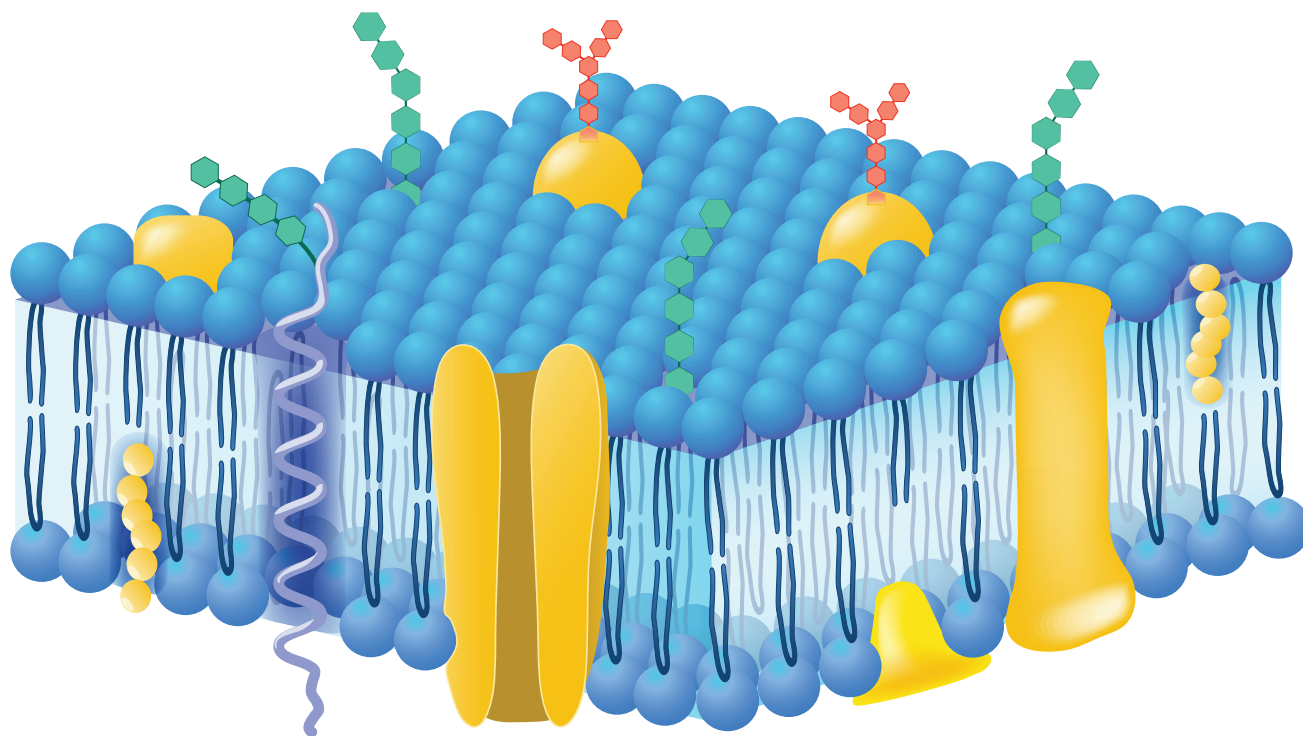
**LB218** Conversion of Invasive Species, *Rhamnus Carthartica*, into Combustible Biofuel: A Novel Approach to Conservation. S. McCollough, I. Eickhoff, P. Soneral, *Bethel Univ.*

**LB219** CourseSource: Publishing Classroom Activities and Pedagogical Materials. N. Grover, K. Fox, J.E. Bell, *Colorado Col., Union Col. and Univ. of San Diego*

**LB220** Using the Curriculum to Introduce Transferable Skill Sets to Undergraduate Students. J. Richardson, *Austin Col.*

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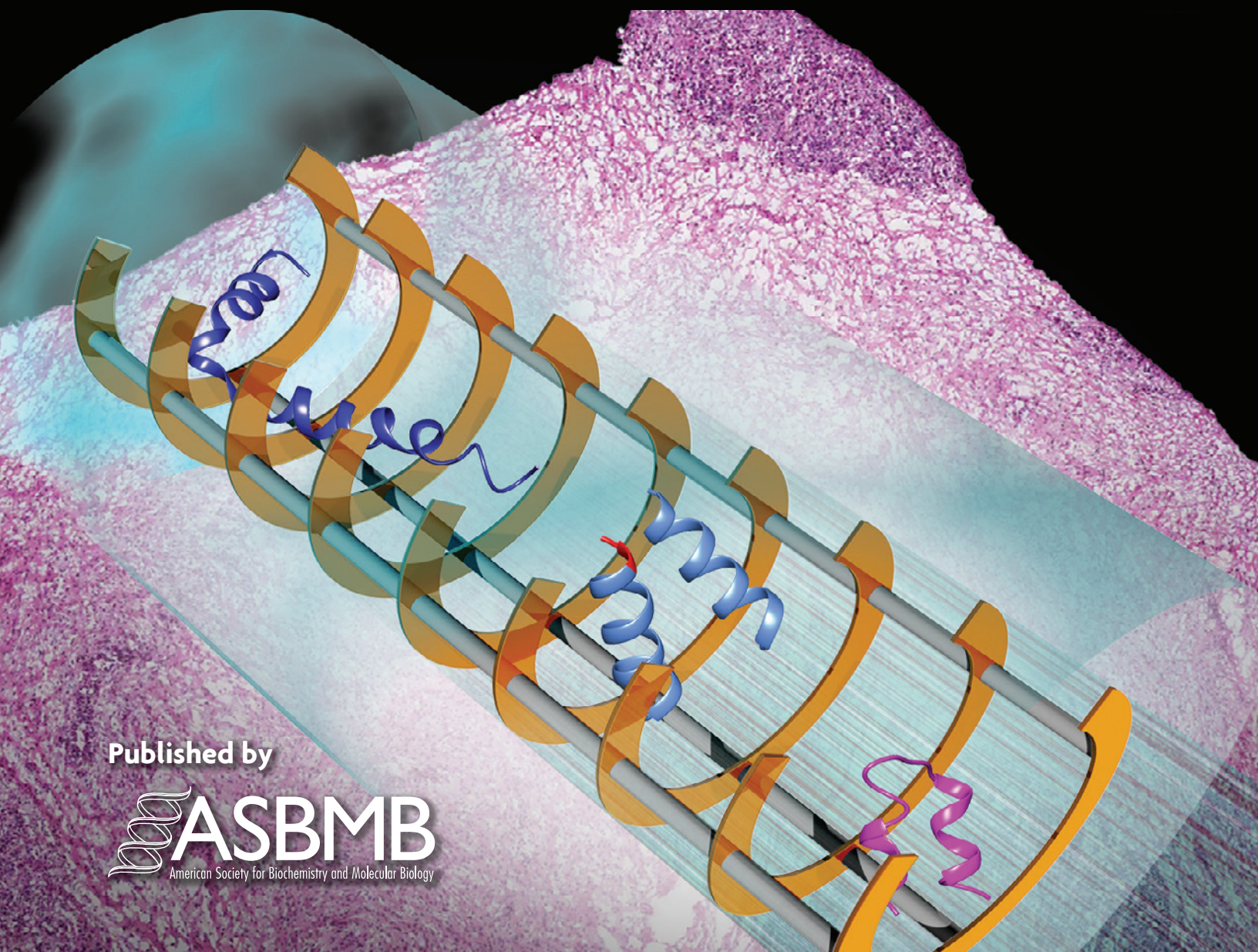
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