ASBMB '17

ANNUAL MEETING

CHICAGO | APRIL 22 – 26

MEETING PROGRAM

held in conjunction with the
Experimental Biology conference


A brilliant scientist* once said:
Stop. Collaborate. And listen.
So we did. We took some time and talked extensively with our editors, our authors, and our readership. And we learned a lot... about what people believe we are, what they want and expect from us, and about how we can better serve the greater scientific community. Now we're on a mission to make it all happen.
See how we're doing it at jbc.org/mission, and be sure to visit us here at booth 1214 at the ASBMB show.
* Or not. (Yes, it was Vanilla Ice.)
JBC
JOURNAL OF BIOLOGICAL CHEMISTRY

ASBMB 2017

MEETING PROGRAM

Chicago, Illinois
April 22–26

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Program At-A-Glance

FRIDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
FRIDAY APRIL 21			
5:00 PM – 7:00 PM	#profdev	Hyatt Regency, DuSable ABC	**ASBMB Graduate and Postdoc Travel Award Networking Reception** ☆

SATURDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
SATURDAY APRIL 22			
8:30 AM – 4:30 PM	#profdev	Convention Center, W183C	**ASBMB Graduate Student and Postdoctoral Fellow Career Development Event** ☆
11:00 AM – 11:30 AM	#profdev	Convention Center, W183AB	**ASBMB Undergraduate Student Orientation**
11:30 AM – 4:00 PM	#profdev	Convention Center, W375B	**ASBMB Undergraduate Student Poster Competition** ☆
4:00 PM – 5:15 PM	#profdev	Convention Center, W375C	**Science Outreach Poster Session**
4:15 PM – 5:15 PM	#profdev	Convention Center, W183AB	**Exploring Careers Speed Networking Event**
5:30 PM – 5:45 PM		Convention Center, Skyline Ballroom	**ASBMB Business Meeting**
5:30 PM – 6:30 PM	#bigtalks	Convention Center, W375C	**ASBMB Opening Lecture: Herbert Tabor Research Award** *Post-Transcriptional Regulation and the Bacterial Response to Stress.* S. Gottesman
6:30 PM – 7:00 PM	#profdev	Convention Center, W375C	**Science Outreach Poster Session, continued**
7:00 PM – 8:30 PM	#profdev	Convention Center, W375DE	**EB Welcome Reception**

Add us on Snapchat!

(username: theasbmb)

SUNDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
SUNDAY APRIL 23			
8:45 AM – 9:15 AM	#bigtalks	Convention Center, W183AB	**William C. Rose Award** *A Reductionist Approach to Understanding Membrane Fusion.* W. T. Wickner
9:15 AM – 9:45 AM	#bigtalks	Convention Center, W183AB	**Earl and Thressa Stadtman Distinguished Scientist Award** *Lessons Learned from PKA: From Motifs to the Dynamic Assembly of Isoform-Specific Macromolecular Switches.* S. S. Taylor
10:00 AM – 12:00 PM	#chembio	Convention Center, W184BC	**Pharmacological Modulation of the HIF Pathway**
10:00 AM – 12:00 PM	#antibiotics	Convention Center, W185BC	**New Approaches for Antibiotic Discovery**
10:00 AM – 12:00 PM	#cellbio	Convention Center, W186ABC	**Dynamics of Cytoskeletal Assembly**
10:00 AM – 12:00 PM	#cellbio	Convention Center, W187ABC	**Life at Higher Resolution: Single Molecule and Single Cell Technologies**
10:00 AM – 12:10 PM	#lipids	Convention Center, W183C	**Biochemistry, Physiology, and Pathophysiology of Sphingolipids**
10:00 AM – 12:15 PM	#ASBMBed	Convention Center, W185A	**Enhancing STEM Student Success and Retention in the Academic Pipeline**
11:40 AM – 12:10 PM	#bigtalks	Convention Center, W183C	**Walter A. Shaw Young Investigator Award in Lipid Research** *Molecular Probes to Study the Subcellular Localization and Dynamics of Phospholipids and Cholesterol.* G. D. Fairn
12:00 PM – 2:30 PM		Convention Center, Exhibit Hall	**ASBMB Poster Presentations** *Poster manning: 12:00 – 1:15 PM, odd board numbers; 1:15 – 2:30 PM. even board numbers*
12:30 PM – 1:00 PM	#profdev	Convention Center, Hall F, across from ASBMB booth #1214	**ASBMB Meet the Speakers**
12:30 PM – 1:30 PM	#bigtalks	Convention Center, W184BC	**ASBMB Award for Exemplary Contributions to Education & Poster Competition Awards Ceremony** *When Undergraduate Research Becomes the Curriculum.* E. Dolan

Program At-A-Glance continued

SUNDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
1:00 PM – 3:00 PM	#bigtalks	Convention Center, W183AB	**Tang Prize** *The Bacterial CRISPR-Cas9 System: A Game Changer in Genome Engineering.* E. Charpentier
1:30 PM – 2:00 PM	#profdev	Convention Center, Hall F, across from ASBMB booth #1214	**ASBMB Meet the Speakers**
2:30 PM – 4:00 PM	#microbes	Convention Center, W183C	**Bacterial Persistence, Toxin–Antitoxin Systems and PrAMPs**
2:30 PM – 4:00 PM	#enzymes	Convention Center, W184A	**Biocatalysts: Understanding Important Reactions and Pathways**
2:30 PM – 4:00 PM	#chromatin	Convention Center, W184BC	**Chromatin Modification, Gene Expression and Epigenetic Mutations**
2:30 PM – 4:00 PM	#omics	Convention Center, W185BC	**Systems Approaches to Signaling in Human Disease**
2:30 PM – 4:00 PM	#lipids	Convention Center, W186ABC	**Lipid Signaling**
2:30 PM – 4:00 PM	#metabolism	Convention Center, W187A	**Cancer Metabolism**
2:30 PM – 4:00 PM	#plants	Convention Center, W187B	**Plant Biochemistry and Metabolism (Session I)**
2:30 PM – 4:00 PM	#proteins	Convention Center, W187C	**Protein Folding, Aggregation and Chaperones: Emerging Frontiers**
2:30 PM – 4:45 PM	#ASBMBed	Convention Center, W185A	**Immigration and Visa Issues for Foreign STEM Graduate Students and Postdoctoral Fellows**
3:00 PM – 5:00 PM	#cellbio	Convention Center, W184D	**High-Resolution Imaging in Medicine**
4:15 PM – 5:45 PM	#chembio	Convention Center, W183C	**Natural Product Discovery and Biosynthesis**
4:15 PM – 5:45 PM	#cellsignal	Convention Center, W184A	**Signal Transduction and Protein Modifications**
4:15 PM – 5:45 PM	#DNA	Convention Center, W184BC	**DNA Replication, Recombination and Repair (Session I)**
4:15 PM – 5:45 PM	#omics	Convention Center, W185BC	**Emerging Technologies in Proteomics**
4:15 PM – 5:45 PM	#lipids	Convention Center, W186ABC	**Regulation of Intracellular Cholesterol Transport**

SUNDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
4:15 PM – 5:45 PM	#glyco	Convention Center, W187A	**Glycans and Glycobiology**
4:15 PM – 5:45 PM	#plants	Convention Center, W187B	**Plant Biochemistry and Metabolism (Session II)**
4:15 PM – 5:45 PM	#RNA	Convention Center, W187C	**Non-Coding RNA Functional Diversity**
5:00 PM – 5:45 PM	#ASBMBed	Convention Center, W185A	**Organizing A Successful ASBMB Student Chapter**
6:15 PM – 7:45 PM	#profdev	Convention Center, W184BC	**Grant Success Demystified**
6:15 PM – 7:45 PM	#profdev	Convention Center, W185BC	**High-Performance Mass Spectrometry for Proteomics**
6:15 PM – 7:45 PM	#profdev	Convention Center, W186ABC	**Beyond DNA Methylation and Histone Modifications**
7:30 PM – 9:00 PM	#profdev	Hyatt Regency, Regency Ballroom C	**ASBMB Welcome Reception** Sponsored by the Minority Affairs Committee

Program At-A-Glance continued

MONDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
MONDAY APRIL 24			
8:45 AM – 9:15 AM	#bigtalks	Convention Center, W183AB	**Mildred Cohn Award in Biological Chemistry** *A New Paradigm for Catalysis of Nucleotidyltransfer Reactions.* W. Yang
9:15 AM – 9:45 AM	#bigtalks	Convention Center, W183AB	**ASBMB Young Investigator Award** *What Lurks Beneath (The Membrane): A Mechanistic Exploration of Rhomboid Proteolysis* S. Urban
10:00 AM – 12:00 PM	#cellbio	Convention Center, W183C	**New Insights Into Nuclear Structure and Function**
10:00 AM – 12:00 PM	#cellsignal	Convention Center, W184BC	**Basis of Longevity and Age-Related Diseases**
10:00 AM – 12:00 PM	#antibiotics	Convention Center, W185BC	**New Insights Into Mechanisms of Antibiotic Action**
10:00 AM – 12:00 PM	#enzymes	Convention Center, W186ABC	**Discovery and Development of New Enzyme Chemistry**
10:00 AM – 12:00 PM	#proteins	Convention Center, W187ABC	**Supramolecular Complexes**
10:00 AM – 12:15 PM	#ASBMBed	Convention Center, W185A	**A 21st-Century Approach to STEM Teaching and Research Mentoring**
12:00 PM – 2:30 PM		Convention Center, Exhibit Hall	**ASBMB Poster Presentations** *Poster manning: 12:00 – 1:15 PM, odd board numbers; 1:15 – 2:30 PM, even board numbers*
12:30 PM – 1:00 PM	#profdev	Convention Center, Hall F, across from ASBMB booth #1214	**ASBMB Meet the Speakers**
12:30 PM – 2:00 PM	#PolicyTownHall	Convention Center, W184D	**Advocacy Town Hall**
1:30 PM – 2:00 PM	#profdev	Convention Center, Hall F, across from ASBMB booth #1214	**ASBMB Meet the Speakers**
2:30 PM – 4:00 PM	#cellsignal	Convention Center, W183C	**Signal Transduction: Building Blocks and Scaffolds**
2:30 PM – 4:00 PM	#chembio	Convention Center, W184BC	**Chemical Tools to Solve Biological Puzzles**

MONDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
2:30 PM – 4:00 PM	#DNA	Convention Center, W185BC	**DNA Replication, Recombination and Repair (Session II)**
2:30 PM – 4:00 PM	#metabolism	Convention Center, W186ABC	**Lipids, Metabolism and the Central Nervous System**
2:30 PM – 4:00 PM	#omics	Convention Center, W187A	**Gems From Genome Database Mining**
2:30 PM – 4:00 PM	#proteins	Convention Center, W187B	**Protein Interactions and Assemblies**
2:30 PM – 4:10 PM	#bigtalks	Convention Center, W184A	**Alice and C. C. Wang Award in Molecular Parasitology** *Genetic Analysis of Pathogenesis in* Toxoplasma gondii. D. Sibley
2:30 PM – 4:45 PM	#ASBMBed	Convention Center, W185A	**Tenure and Promotion across the STEM Academic Landscape**
3:00 PM – 5:00 PM	#cellbio	Convention Center, W184D	**Progress Toward Adoption of Microphysiological Systems in Biology and Medicine**
4:15 PM – 5:45 PM	#enzymes	Convention Center, W183C	**Structural Dynamics of Enzymes**
4:15 PM – 5:45 PM	#chembio	Convention Center, W184BC	**Lighthouses Inside Cells: Applications of Biosensors**
4:15 PM – 5:45 PM	#chromatin	Convention Center, W185BC	**Chromatin and Gene Expression**
4:15 PM – 5:45 PM	#metabolism	Convention Center, W186ABC	**Cardiac Metabolism and Function**
4:15 PM – 5:45 PM	#omics	Convention Center, W187A	**Systems Biology/Proteomics in Health and Disease**
4:15 PM – 5:45 PM	#proteins	Convention Center, W187B	**Protein Folding, Aggregation and Chaperones: New Applications**
4:15 PM – 5:45 PM	#microbes	Convention Center, W187C	**Microbial Signaling and Pathogenesis**
5:00 PM – 5:45 PM	#ASBMBed	Convention Center, W185A	**ASBMB Accreditation Workshop**
6:15 PM – 7:45 PM	#microbes	Convention Center, W184BC	**CRISPR-Based Versatile Tools and Their Major Application Area**

Program At-A-Glance continued

MONDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
6:15 PM – 7:45 PM	#chembio	Convention Center, W185BC	**Academic Drug Discovery: Charting a Roadmap for Moving Basic Ideas Into the Clinic**
6:15 PM – 7:45 PM	#profdev	Convention Center, W186ABC	**How to Get a Life in the Life Sciences**
9:00 PM – 10:30 PM	#profdev	The Comedy Clubhouse, 1462 N. Ashland	**Nothing Academic: A Night of Science-Themed Improv**
9:00 PM – 11:00 PM	#profdev	Hilton Chicago	**Young Experimental Scientists Mixer**

TUESDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
TUESDAY APRIL 25			
8:45 AM – 9:15 AM	#bigtalks	Convention Center, W183AB	**Avanti Award in Lipids** *Phosphoinositide Conversion in the Endolysosomal System* V. Haucke
9:15 AM – 9:45 AM	#bigtalks	Convention Center, W183AB	**Ruth Kirschstein Diversity in Science Award** *From Dividing Cells to Helping Students Overcome Socio-Economic Barriers* D. Robinson
10:00 AM – 12:00 PM	#cellbio	Convention Center, W183C	**Organelle Trafficking and Signaling**
10:00 AM – 12:00 PM	#cellbio	Convention Center, W184BC	**Biochemical Basis of Cellular Processes**
10:00 AM – 12:00 PM	#antibiotics	Convention Center, W185BC	**Antibiotic Resistance**
10:00 AM – 12:00 PM	#glyco	Convention Center, W186ABC	**Glycobiology, Glycan Receptors and Functional Glycomics**
10:00 AM – 12:00 PM	#cellbio	Convention Center, W187ABC	**Metal Homeostasis**
12:00 PM – 2:30 PM		Convention Center, Exhibit Hall	**ASBMB Poster Presentations** *Poster manning: 12:00–1:15 PM, odd board numbers; 1:15–2:30 PM, even board numbers*
12:30 PM – 1:00 PM	#profdev	Convention Center, Hall F, across from ASBMB booth #1214	**ASBMB Meet the Speakers**
12:30 PM – 2:00 PM	#profdev	Convention Center, W185BC	**NIH and NSF Funding Opportunities**
1:30 PM – 2:00 PM	#profdev	Convention Center, Hall F, across from ASBMB booth #1214	**ASBMB Meet the Speakers**
2:30 PM – 4:00 PM	#microbes	Convention Center, W183C	**Microbiomes and Their Evolution During Infection and Disease**
2:30 PM – 4:00 PM	#cellsignal	Convention Center, W184A	**Beyond the Code: Chemistry of Nucleotide and Amino Acid Modifications**
2:30 PM – 4:00 PM	#proteins	Convention Center, W184BC	**Molecular Mechanisms of Regulation in Proteolysis**

Program At-A-Glance continued

TUESDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
2:30 PM – 4:00 PM	#RNA	Convention Center, W185A	RNA: Synthesis, Regulation, and Processing
2:30 PM – 4:00 PM	#chembio	Convention Center, W185BC	Therapeutics: Targets and Design
2:30 PM – 4:00 PM	#metabolism	Convention Center, W186ABC	Integration of Metabolism and Epigenetics
2:30 PM – 4:00 PM	#proteins	Convention Center, W187A	Intrinsic Disorder and Recognition
3:00 PM – 5:00 PM	#microbes	Convention Center, W184D	Nutrition Impact On Bacteria and Host Health: From Basic Science to Global View
4:15 PM – 5:45 PM	#glyco	Convention Center, W183C	Advances in Glycobiology
4:15 PM – 5:45 PM	#metabolism	Convention Center, W184A	Chemical Probes and Metabolite Biosensors
4:15 PM – 5:45 PM	#cellsignal	Convention Center, W184BC	Cancer Signaling and Therapeutics
4:15 PM – 5:45 PM	#chromatin	Convention Center, W185A	Chromatin Structure and Epigenetic Regulation
4:15 PM – 5:45 PM	#lipids	Convention Center, W186ABC	Lipid Transport and Processing
4:15 PM – 5:45 PM	#proteins	Convention Center, W187A	Molecular Machines of Protein Synthesis and Degradation
4:15 PM – 5:45 PM	#enzymes	Convention Center, W187B	Protein and Enzyme Allostery
6:15 PM – 7:45 PM	#profdev	Convention Center, W184BC	Lipidic Cubic Phase Crystallography
6:15 PM – 7:45 PM	#profdev	Convention Center, W185BC	Publishing in the *JBC* 101: Advice From the Experts
6:15 PM – 7:45 PM	#profdev	Convention Center, W186ABC	Principles and Applications of Modern Kinetic and Equilibrium Analysis
7:30 PM – 9:00 PM	#profdev	Hyatt Regency, Grant Park B	ASBMB Women Scientists Mentoring and Networking Event

WEDNESDAY Time	# = Follow on Twitter	Location	Event (☆ = advance event registration required)
WEDNESDAY APRIL 26			
8:45 AM – 9:15 AM	#bigtalks	Convention Center, W183AB	**ASBMB-Merck Award** *Proteostasis Function and Disfunction: The Delicate Art of Maintaining a Healthy Proteome* J. Frydman
9:15 AM – 9:45 AM	#bigtalks	Convention Center, W183AB	**Delano Award for Computational Biosciences** *Structure-Based Discovery of New Chemotypes Conferring New Biology* B. K. Shoichet
10:00 AM – 12:00 PM	#proteins	Convention Center, W183C	**Low-Complexity Domain Proteins and the Making of Germ Cells**
10:00 AM – 12:05 PM	#cellbio	Convention Center, W184BC	**Molecular Quality Control**
10:00 AM – 12:00 PM	#lipids	Convention Center, W185BC	**New Insights in Regulated Lipid Metabolism**
10:00 AM – 12:00 PM	#metabolism	Convention Center, W186ABC	**Redox Signaling and the Metabolome**
12:00 PM – 2:30 PM		Convention Center, Skyline Ballroom	**ASBMB Poster Presentations** *Poster manning: 12:00–1:15 PM, odd board numbers; 1:15–2:30 PM even board numbers*
12:30 PM – 1:00 PM	#profdev	Convention Center, Skyline Ballroom	**ASBMB Meet the Speakers**
1:30 PM – 2:00 PM	#profdev	Convention Center, Skyline Ballroom	**ASBMB Meet the Speakers**

ASBMB Oral Program

SATURDAY APRIL 22

16 ASBMB Graduate Student and Postdoctoral Fellow Career Development Event

SPECIAL EVENT #profdev

8:30 AM – 4:30 PM CONVENTION CENTER, W183C

CHAIR: C. Heinen, T. O'Connell

Advance event registration required. Required participation by all Graduate/Postdoctoral Travel Awardees, including recipients of the Graduate Student Travel Awards supported by the ASBMB Minority Affairs Committee.

Before you dig into the nitty-gritty of the very best molecular biology and biochemistry at the ASBMB annual meeting, join your peers for this day of networking, exploring careers and developing professional skills.

17 ASBMB Undergraduate Student Orientation

SPECIAL EVENT #profdev

11:00 AM – 11:30 AM CONVENTION CENTER, W183AB

CHAIR: J. Provost

First time at a national meeting? What now? Learn how to develop a game plan to get the biggest bang for your buck during your time at the meeting.

Orientation open to all undergraduates attending the poster competition. No registration required. All ASBMB undergraduate travel award winners are required to attend.

18 ASBMB Undergraduate Student Poster Competition

SPECIAL EVENT #profdev

11:30 AM – 4:00 PM CONVENTION CENTER, W375B

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

Advance competitor registration required. Competitors may check-in and set-up posters beginning at 11:30 (board assignments distributed at check-in). Posters must remain on display 12:30 – 4:00 pm.

Undergraduate biochemists and molecular biologists will present their research and gain valuable practice in advance of presentations during the main meeting. Best Poster winners announced Sunday, April 24, 12:30 pm, Room W184bc.

Graduate program recruiters will be on hand to share exciting educational and research opportunities.

20 Science Outreach Poster Session

POSTER DISCUSSION #profdev

4:00 PM – 5:15 PM CONVENTION CENTER, W375C

Outreach posters will be manned before and after the ASBMB Opening Lecture which takes place in the same room. Manning times: 4:00 – 5:15 pm and 6:30 – 7:00 pm.

BOARD 1: CSI: Choosing Science and Innovation. B. Lehrman

BOARD 2: Promoting STEM awareness in East Texas: Stephen F. Austin State University ASBMB Student Chapter. C. Tovar

BOARD 3: Take Your Vitamins! Suffolk ASBMB Student Chapter Outreach Activities. C. Peterson

BOARD 4: BlastOff! with Biochemistry. G. Le

BOARD 5: Middle School Science Educational Outreach Programs: "Present Your Ph.D. Thesis to a 12-year-old" and "Shadow a Scientist". G. Clark

BOARD 6: Project CRYSTAL (Colleagues Researching with Young Scientists: Teaching and Learning): A Scientific Outreach Program for Middle School Students. H. Holden

BOARD 7: Science Explorers: Small Group Mentoring/Tutoring During the School Day to Help Underserved Chicago Public School Students Transition Into High School. J. Hatfield

BOARD 8: Scientific Community Outreach in Central Texas. K. Lewis

BOARD 9: Science in the News: Communicating Science to the General Public. K. Wu

BOARD 10: Promoting Science Through a Science Club to Science Club Initiative. K. Hicks

BOARD 11: Fostering of a Love of Science and Science Education. L. Zhao

BOARD 12: Teaching-Learning Model of Science at an Informal Environment with an Emphasis on Active Participation. M. Pérez-Oquendo

BOARD 13: Students Sharing Science: Cal Poly SLO Student Chapter Outreach. M. Hansen

BOARD 14: Promoting Rural Student Enthusiasm for STEM by Establishing a Model Biotechnology Company in Their High School. M. Koci

BOARD 15: Long-Term Research Projects Between Students from the ASBMB Student Chapter at Hampden-Sydney College and Prince Edward High School, Virginia. M. Wolyniak

BOARD 16: Communication Training and Outreach Programs at Northwestern. M. Paulsen

BOARD 17: University of Texas Health Science Center at San Antonio Outreach: Meshing Science and Culture. M. Sifuentes

BOARD 18: "Science for the Curious" through Beer, Whiskey, Chocolate, GMOs, Pi(e), Films, and 'Game of Thrones'. M. Metzler

BOARD 19: Expanding Your Horizons Connects STEM Professionals With Middle School Girls. M. Beck

BOARD 20: Jugando con la Ciencia— Northwestern University. N. Martinez

BOARD 21: New Beginnings-Our First Experience As a New ASBMB Student Chapter. P. Mullen

BOARD 22: Enhancing Critical Thinking Skills of High School Science Students: an Outreach Project. P. Williams

BOARD 23: Fired Up for Science: Engaging Community and Science Majors. T. Clark

BOARD 24: The ASBMB Student Chapter at Otterbein University: Best Practices and Outreach Efforts. T. Hyatt

BOARD 25: Discovery Outreach and The Wisconsin Science Festival— Growing a Statewide Footprint for Informal Science Engagement. W. Marner

BOARD 26: Outreach in New York City! The ASBMB Student Chapter at Marymount Manhattan College. A. Aguanno

BOARD 27: Informal STEM Education: Resources for Outreach, Engagement and Broader Impacts. C. Garibay

BOARD 28: "Science Fiesta!" Combining Student-Led Community Outreach with Local Culture. T. Block

19 Exploring Careers Speed Networking Event

WORKSHOP #profdev

4:00 PM – 5:15 PM CONVENTION CENTER, W183AB

Scientists from all career fields will meet with students and share advice about their career paths. All undergraduate students are encouraged to attend.

21 ASBMB Business Meeting

BUSINESS MEETING

5:30 PM – 5:45 PM CONVENTION CENTER, SKYLINE BALLROOM W375C

22 ASBMB Opening Lecture: Herbert Tabor Research Award

AWARD LECTURE #bigtalks

5:30 PM – 6:30 PM CONVENTION CENTER, SKYLINE BALLROOM, W375C

5:30 ASBMB Business Meeting and Award Introduction

5:45 22.1 Post-Transcriptional Regulation and the Bacterial Response to Stress S. Gottesman, *NCI, NIH*

23 Science Outreach Poster Session, continued

POSTER DISCUSSION #profdev

6:30 PM – 7:00 PM CONVENTION CENTER, W375C

Outreach posters will be manned before and after the ASBMB Opening Lecture which takes place in the same room. Manning times: 4:00 – 5:15 pm and 6:30 – 7:00 pm. Refer to session 20 (page 13) for presentation information.

24 EB Welcome Reception

SPECIAL EVENT #profdev

7:00 PM – 8:30 PM CONVENTION CENTER, W375DE

Join fellow attendees for our first-ever, inter-disciplinary meet and mingle and appreciate the power and energy of the EB Meeting! Light refreshments and cash bar available. Member-attendees receive one complimentary drink ticket when they sign up for the event during EB Meeting registration.

ASBMB Science Outreach Events

Outreach poster sessions

SATURDAY, APRIL 22, 4:00–5:15 PM & 6:30–7:00 PM
CONVENTION CENTER W375C

This is your chance to see examples of outreach activities from across the country and talk with program organizers.

Science Outreach "Meet the Experts"

SUNDAY, APRIL 23, 9:00 AM–NOON & 2:00–4:00 PM
THE ASBMB LOUNGE

Members of the ASBMB Public Outreach Committee will talk about different approaches to outreach, share their expert insight and provide hands-on demonstrations.

Nothing Academic: A Night of Science-Themed Improv

MONDAY, APRIL 24, 7:00–8:30 PM & 9:00–10:30 PM
THE COMEDY CLUBHOUSE (1462 N. ASHLAND)

Come see a humorous approach to science communication, featuring performers from the One Group Mind comedy collective.

SUNDAY APRIL 23

98 William C. Rose Award

AWARD LECTURE #bigtalks

8:45 AM – 9:15 AM CONVENTION CENTER, W183AB

8:45 Introduction.

8:50 **98.1** A Reductionist Approach to Understanding Membrane Fusion. W.T. Wickner, *Dartmouth Medical School*

99 Earl and Thressa Stadtman Distinguished Scientist Award

AWARD LECTURE #bigtalks

9:15 AM – 9:45 AM CONVENTION CENTER, W183AB

9:15 Introduction.

9:20 **99.1** Lessons Learned from PKA: From Motifs to the Dynamic Assembly of Isoform-Specific Macromolecular Switches. S.S. Taylor, *University of California, San Diego*

100 Pharmacological Modulation of the HIF Pathway

SYMPOSIUM #chembio

10:00 AM – 12:00 PM CONVENTION CENTER, W184BC

CHAIR: W. G. Kaelin

10:00 **100.1** Signaling Hypoxia by Protein Hydroxylation: Transcriptional Architecture of the HIF Response. P.J. Ratcliffe, *University of Oxford and Francis Crick Institute, United Kingdom*

10:30 **100.2** Visualizing the Drug-Binding Potentials of HIF-α Proteins Through X-Ray Crystallography. F. Rastinejad, *Sanford Burnham Prebys Medical Discovery Institute*

11:00 **100.3** Small Molecule HIF-2α Antagonists and Their Therapeutic Applications. E.M. Wallace, *Peloton Therapeutics*

11:30 **100.4** On-Target Efficacy of a HIF2a Antagonist in Preclinical Kidney Cancer Models. W. Kaelin, *Howard Hughes Medical Institute, Dana-Farber Cancer Institute, Brigham and Women's Hospital and Harvard Medical School*

101 New Approaches for Antibiotic Discovery

ISSUES IN DEPTH #antibiotics

10:00 AM – 12:00 PM CONVENTION CENTER, W185BC

CHAIR: A. Mankin

10:00 **101.1** Antibody-Antibiotic Conjugates: A New Platform for Treatment of Serious Bacterial Infections. E.J. Brown, *Genentech*

10:30 **101.2** Synthetic Biology for Tackling Antimicrobial Resistance. T. Lu, *Massachusetts Institute of Technology*

11:00 **101.3** To Kill a Bacterium, You Need to Think Like a Bacterium. E. Brown, *McMaster University, Canada*

11:30 **101.4** Engineered Bacteriophage Therapeutics Against Multidrug-Resistant Pathogens. M. Barbu, Y. DelRosario, B. Hubby, *Synthetic Genomics Vaccine*

102 Dynamics of Cytoskeletal Assembly

SYMPOSIUM #cellbio

10:00 AM – 12:00 PM CONVENTION CENTER,W186ABC

CHAIR: T. D. Pollard

10:00	102.1	Regulation of Microtubule Dynamics by Suppression of Microtubule Assembly Kinetics. M.K. Gardner, *University of Minnesota*
10:30	102.2	Strings Attached: Sound Perception and Brain Wiring Enabled by Cadherins. M. Sotomayor, *The Ohio State University*
11:00	102.3	Mechanics of the Actin Cytoskeleton. M. Gardel, *University of Chicago*
11:30	102.4	Molecular Mechanism of Cytokinesis. T.D. Pollard, *Yale University*

103 Life at Higher Resolution: Single Molecule and Single Cell Technologies

SYMPOSIUM #cellbio

10:00 AM – 12:00 PM CONVENTION CENTER,W187ABC

CHAIR: T. Ha

10:00	103.1	Transcriptional Dynamics of Mfd. M. Wang, *Cornell University, HHMI*
10:30	103.2	DNA Origami Supported Precision Measurements of Biomolecular Interactions and Structure. H. Dietz, *Technical University of Munich, Germany*
11:00	103.3	Playing a Tug of War with Integrin and Notch Receptors. T. Ha, *Whiting School of Engineering, Johns Hopkins School of Medicine, HHMI*
11:30	103.4	A 3D Code in the Human Genome. E. Lieberman Aiden, *Baylor College of Medicine, and Rice University*

104 Biochemistry, Physiology, and Pathophysiology of Sphingolipids

SYMPOSIUM #lipids

10:00 AM – 12:10 PM CONVENTION CENTER,W183C

CHAIR: Y.A. Hannun

10:00	104.1	Neutral Sphingomyelinase: Structure and Function. Y. Hannun, *Stony Brook University*
10:25	104.2	Regulation and Role of ER-Golgi Contact Sites. A. De Matteis, R. Venditti, M. Masone, L. Rega, E. Polishchuk, M. Santoro, G. Di Tullio, R. La Montagna, *Telethon Institute of Genetics and Medicine, Italy, Ospedale Pediatrico Bambino Gesù, Italy*
10:50	104.3	Sphingolipid Chaperone Proteins Modulate Signal Transduction and Pathophysiology. T. Hla, *Boston Children's Hospital, Harvard Medical School*
11:15	104.4	Lipid Homeostasis and Function. H. Riezman, J. Hannich, A. Galih, A.X. Santos, I. Riezman, J. Martinou, S. Gentina, *University of Geneva, Switzerland and Friedrich Miescher Institute, Switzerland*
11:40		Walter A. Shaw Young Investigator Award introduction and presentation.
11:45	104.5	Molecular Probes to Study the Subcellular Localization and Dynamics of Phospholipids and Cholesterol. G.D. Fairn, *St. Michael's Hospital, Canada and University of Toronto, Canada*

105 Enhancing STEM Student Success and Retention in the Academic Pipeline

SYMPOSIUM #ASBMBed

10:00 AM – 12:15 PM CONVENTION CENTER, W185A

CHAIR: S. E. Feeney

Sponsored by ASBMB Education and Professional Development Committee

Students, post-docs, and faculty are encouraged to attend this session focused on highlighting best practices for encouraging student success at each stage of their academic development and methods for retaining diverse STEM students. This will be a fantastic session for all to take away some new insights for how to propel student success in STEM classrooms.

10:00 Chair's Introduction.

10:05 **105.1** Socio-Cognitive Considerations to Broaden Participation and Support Student Success in STEM. G. Trujillo, *Stanford University*

10:30 **105.2** Engaging Students in the Large-Lecture Biology Classroom. L.K. Elfring, *The University of Arizona*

10:55 Improving Student Understanding of Pre-Requisite Knowledge and Long Term Understanding of Biochemical Concepts. A.T. Taylor, W.R. Novak, *Wabash College* **(588.3)**

11:10 Discussion.

11:15 **105.3** The t-STEM Initiative: Faculty Inquiry in the Context of Institutional Commitments to Student Success. S. Jewett, W. LaCourse, *University of Maryland, Baltimore County (UMBC)*

11:40 Proxies for Success— How Application Changes Correlate to PhD Path Pursuit for a Small Diversity Research Program. C.R. Shadding, D. Whittington, *Washington University in St. Louis - School of Medicine, Strategic Evaluations, Inc.* **(751.15)**

11:55 Discussion.

12:00 Mental Health Crisis in Graduate Education: The Data and Intervention Strategies. T.M. Evans, L. Bira, J. Beltran-Gastelum, L. Weiss, N. Vanderford, *UT Health San Antonio, St. Mary's University and University of Kentucky* **(750.7)**

106 Walter A. Shaw Young Investigator Award in Lipid Research

AWARD LECTURE #bigtalks

11:40 AM – 12:10 PM CONVENTION CENTER, W183C

Avanti Polar Lipids, Inc.

Presented in the session, "Biochemistry, Physiology and Pathophysiology of Sphingolipids," beginning at 10:00 a.m. Refer to session 104 for additional details.

11:40 Walter A. Shaw Young Investigator Award introduction and presentation.

11:45 **104.5** Molecular Probes to Study the Subcellular Localization and Dynamics of Phospholipids and Cholesterol. G.D. Fairn, *St. Michael's Hospital, Canada and University of Toronto, Canada*

107 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

12:30 PM – 1:00 PM CONVENTION CENTER, HALL F

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

A. De Matteis, *Telethon Institute of Genetics and Medicine;* H. Dietz, *Technical University of Munich;* G. Fairn, *St. Michael's Hospital, W. A. Shaw Young Investigator in Lipid Research Award;* M. Gardel, *University of Chicago;* M. Gardner, *University of Minnesota;* T. Ha, *Johns Hopkins School of Medicine, HHMI;* T. Pollard, *Yale University;* H. Riezman, *University of Geneva;* M. Sotomayor, *Ohio State University*

108 ASBMB Award for Exemplary Contributions to Education

AWARD LECTURE #bigtalks

12:30 PM – 1:30 PM CONVENTION CENTER, W184BC

Sponsored by ASBMB Education and Professional Development Committee

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

12:30 Introduction.

12:35 108.1 When Undergraduate Research Becomes the Curriculum. E. Dolan, *University of Georgia*

83 Tang Prize

AWARD LECTURE

1:00 PM – 3:00 PM CONVENTION CENTER, W183AB

Sponsored by Tang Foundation

1:00 The Bacterial CRISPR-Cas9 System: A Game Changer in Genome Engineering.
E. Charpentier, *Max Planck Institute for Infection Biology*

110 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

1:30 PM – 2:00 PM CONVENTION CENTER, HALL F

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

E. Brown, *Genentech;* E. Brown, *McMaster University;* F. Rastinejad, *Sanford Burnham Prebys Medical Discovery Institute;* P. Ratcliffe, *University of Oxford;* S. Taylor, *UCSD, Earl and Thressa Stadtman Distinguished Scientist Award;* E. Wallace, *Peloton Therapeutics;* W. Wickner, *Dartmouth Medical School, William C. Rose Award*

111 Bacterial Persistence, Toxin-Antitoxin Systems and PrAMPs

SPOTLIGHT SESSION #microbes

2:30 PM – 4:00 PM CONVENTION CENTER, W183C

CHAIR: R. Page

2:30 111.1 Toxin-Antitoxin Systems: Novel Mechanisms of Toxin Activity and Antitoxin Inhibition. R. Page, W. Peti, *University of Arizona*

2:45 Antimicrobial Peptide Turns the Ribosome Into a Release Factor Trap. T. Florin, C. Maracci, M. Graf, P. Karki, D. Klepacki, M.V. Rodnina, D.N. Wilson, N. Vázquez-Laslop, A.S. Mankin, *University of Illinois at Chicago, Max Planck Institute for Biophysical Chemistry, Germany, University of Munich, Germany and University of Hamburg, Germany* **(600.5)**

3:00 Gyrase Inhibition by Toxin-Antitoxin Modules. C.R. Bourne, J.C. White, S. Dabadi, M. Muthuramalingam, *University of Oklahoma* **(777.14)**

3:15 Determination of Protein Turnover in *E. coli* Cells During Exit from Persistence. M. Semanjski, E. Germain, K. Gerdes, B. Macek, *University of Tuebingen, Germany and University of Copenhagen, Denmark* **(915.2)**

3:30 Inhibition and Dispersion of Biofilms: Targeting Bacterial Response Regulators to Resensitize Multidrug Resistant Bacteria to Antibiotics. M.E. Milton, G.L. Draughn, E.A. Feldmann, R.J. Thompson, D. Jung, B. Kang, K.E. Theisen, D. Zeng, J.L. Lucas, C.C. Melander, J. Cavanagh, *RTI International, North Carolina State University, Agile Sciences, Inc. and MRIGlobal* **(939.15)**

3:45 Discrete Structural Dynamics of Pseudo-Palindromic Motifs Control DNA Binding of Bacterial Toxin-Antitoxin Complexes. D.E. Brodersen, K.L. Bendtsen, K. Xu, M. Luckmann, K. Winther, S.A. Shah, C.N. Pedersen, *Aarhus University, Denmark and University of Copenhagen, Denmark* **(777.2)**

112 Biocatalysts: Understanding Important Reactions and Pathways

SPOTLIGHT SESSION #enzymes

2:30 PM – 4:00 PM CONVENTION CENTER,W184A

CHAIR: J. DuBois

2:30 A Structure-Based Mechanism for Oxidative Decarboxylation Reactions Mediated by Amino Acids and Heme Propionates. A.I. Celis, *Montana State University* **(607.8)**

2:45 Protein-Based Models of Nickel Metalloenzymes. H.S. Shafaat, A.C. Manesis, C.R. Schneider, M.C. O'Connor, *The Ohio State University* **(605.4)**

3:00 Probing the Charge and Conformational Requirements of JmjC Demethylases. G.W. Langley, A. Brinkø, M. Münzel, L.J. Walport, C.J. Schofield, R.J. Hopkinson, *University of Oxford, United Kingdom and Aarhus University, Denmark* **(767.1)**

3:15 Effects of Isotopic Substitution in Enzyme and Co-Factor on Enzyme Catalyzed Hydride Transfer. C. Ranasinghe, P. Pagano, Q. Guo, C. Cheatum, A. Kohen, *The University of Iowa* **(764.1)**

3:30 Structural Insight Into Allosteric Inhibition of Mycobacterium tuberculosis Tryptophan Synthase. K. Michalska, S. Wellington, P.P. Nag, R. Jedrzejczak, N.I. Maltseva, S.L. Fisher, S.L. Schreiber, D.T. Hung, A. Joachimiak, *University of Chicago, Broad Institute of MIT and Harvard, Harvard Medical School, Massachusetts General Hospital and Harvard University* **(765.12)**

3:45 Structural and Biochemical Insights Into the Activation and Substrate Selectivity of Clostripain-Like Proteases Secreted from Commensal Gut Bacteria. E.J. Roncase, A.J. O'Donoghue, D.W. Wolan, *The Scripps Research Institute, University of California, San Diego* **(918.5)**

113 Chromatin Modification, Gene Expression and Epigenetic Mutations

SPOTLIGHT SESSION #chromatin

2:30 PM – 4:00 PM CONVENTION CENTER,W184BC

CHAIR: B. D. Strahl

2:30 **113.1** Role of H3K36 Methylation in Cell Cycle Control and Nutrient Stress Response. B. Strahl, *UNC School of Medicine*

2:45 INO80 Chromatin Remodeling Connects Metabolic Gene Expression to Cell Division. A.J. Morrison, G. Gowans, A. Schep, D. King, W. Greenleaf, *Stanford University* **(593.14)**

3:00 An Epigenetic Switch Regulates de Novo DNA Methylation at Pluripotency Gene Enhancers. H. Gowher, C.J. Petell, *Purdue University* **(593.15)**

3:15 Biochemical Insights Into the Mechanism of Oncohistones. P.W. Lewis, *University of Wisconsin-Madison* **(593.16)**

3:30 Identifying Dysregulated Epigenetic Enzymes in Castrate-Resistant Prostate Cancer Development. J. Lee, B.H. Yang, N.H. Damaschke, M.D. Boersma, W.H. Huang, E. Corey, D.F. Jarrard, J.M. Denu, *University of Wisconsin–Madison, Auburn University and University of Washington* **(755.14)**

3:45 Decipher and Target Cancer Cell Dependency on Epigenetic Mutations. G. Wang, *University of North Carolina at Chapel Hill* **(593.3)**

114 Systems Approaches to Signaling in Human Disease

SPOTLIGHT SESSION #omics

2:30 PM – 4:00 PM CONVENTION CENTER,W185BC

CHAIR: M. B. Yaffe

2:30 **114.1** Phosphoproteomic Analysis of DNA Damage Checkpoint Kinase Signaling Reveals Unexpected Links to Actin Cytoskeletal Remodeling, Cell Migration, and Chemoresistance. M. Yaffe, M. Hwang, S. Gordonov, J. Ivaska, D. Lauffenburger, F. Gertler, *MIT and University of Turku, Finland*

2:45 A High-Throughput Assay Platform for Quantifying Nucleo-Cytoplasmic Phosphatase Activity. M. Shah, S. Kinicki, Z. Chapman, D. Brautigan, K. Janes, *University of Virginia* **(926.8)**

3:00 Molecular Basis for Redox Regulation of the Src Kinase. C.M. Dustin, C. Liao, M. Hristova, B. Deng, Y. Lam, J. Li, A. van der Vliet, *University of Vermont* **(773.9)**

3:15 Therapeutic Targeting of MLL Degradation Pathways in MLL-Rearranged Leukemia. K. Liang, A.G. Volk, J.S. Haug, S.A. Marshall, A.R. Woodfin, E.T. Bartom, J.M. Gilmore, L. Florens, M.P. Washburn, K.D. Sullivan, J.M. Espinosa, J. Cannova, J. Zhang, E.R. Smith, J.D. Crispino, A. Shilatifard, *Northwestern University Feinberg School of Medicine, Stowers Institute for Medical Research, Northwestern University Feinberg School of Medicine, The University of Kansas Medical Center, University of Colorado, Oncology Institute, Loyola University Chicago* **(611.1)**

3:30 Proteotyping Gene Dosage Effects in Genetic Diseases. Y. Liu, R. Aebersold, *Institute of Molecular Systems Biology, ETH Zurich, Switzerland and Faculty of Science, Switzerland* **(926.3)**

3:45 DUOX1 Silencing in Lung Cancer Is Associated with Enhanced Nuclear EGFR Localization. A. Little, K. Danyal, D. Heppner, M. Hristova, A. van der Vliet, *University of Vermont* **(930.4)**

115 Lipid Signaling

SPOTLIGHT SESSION #lipids

2:30 PM – 4:00 PM CONVENTION CENTER, W186ABC

CHAIR: D. M. Raben

2:30 Crystal Structure of LCAT Bound to a Small Molecule Allosteric Activator Reveals Its Active Conformation. K.A. Manthei, S. Yang, L. Chang, L.A. Freeman, B. Baljinnyam, M. Shen, D.J. Maloney, A.T. Remaley, A. Jadhav, J.J. Tesmer, *University of Michigan and National Institutes of Health.* **(781.21)**

2:45 Readers, Writers and Erasers of Nuclear PIP3. R.D. Blind, *Vanderbilt University School of Medicine* **(946.11)**

3:00 **115.1** Diacylglycerol and Phosphatidic: Regulation of Levels and Roles in Synaptic Vesicle Cycling. D. Raben, H. Goldschmidt, C. Barber, *Johns Hopkins University School of Medicine*

3:15 Crystal Structure of Lysophosphatidic Acid Acyltransferase Reveals a Paired Reentrant Helix Membrane Anchor That Positions the Active Site Inside the Phospholipid Bilayer. S.W. White, R.M. Robertson, J. Yao, S. Gajewski, G. Kumar, C.O. Rock, *St. Jude Children's Research Hospital* **(630.13)**

3:30 Phosphatidic Acid-Protein Phosphatase 2A Interactions Regulate Haloptropic Bending in Rice. E. Han, D. Petrella, J. Lin, A. DeLong, J.J. Blakeslee, *The Ohio State University and Brown University* **(617.5)**

3:45 Single-Molecule Analysis of PKB/AKT-Lipid Interaction. N. Singh, E. Arauz, V. Aggarwal, T. Ha, J. Chen, *University of Illinois at Urbana Champaign* **(946.10)**

116 Cancer Metabolism

SPOTLIGHT SESSION #metabolism

2:30 PM – 4:00 PM CONVENTION CENTER, W187A

CHAIR: J. M. Ellis, F. Pascual

2:30 Pyruvate Carboxylase Is Essential for Breast Cancer Metastasis *in Vivo*. T.M. Wilmanski, A. Shinde, S.S. Donkin, J. Burgess, M. Wendt, D. Teegarden, *Purdue University* **(942.12)**

2:45 Repurposing P-Glycoprotein Inhibitors as Modifiers of Sphingolipid Metabolism— Therapeutic Implications in Cancer. M.C. Cabot, *East Carolina University, Brody School of Medicine* **(629.6)**

3:00 Syntaphilin Regulates Mitochondrial Dynamics and Tumor Cell Invasion. M. Caino, D.C. Altieri, *The Wistar Institute* **(631.3)**

3:15 Potential Role for a Phosphoserine Aminotransferase 1 and Pyruvate Kinase M2 (PSAT1:PKM2) Functional Interaction in Lung Cancer Cells. B.F. Clem, T. Kruer, J. Bradley, M. Merchant, J.O. Trent, R.B. Sit, *University of Louisville* **(942.9)**

3:30 Electrophilic Nitro-Oleic Acid Inhibits Triple Negative Breast Cancer Cell Migration via Suppression of NF-κB Activity. C. Woodcock, S. Woodcock, S. Salvatore, N. Davidson, Y. Huang, B. Freeman, *University of Pittsburgh and University of Pittsburgh Cancer Institute* **(934.1)**

3:45 Identification of Inhibitors of ACSVL3, a Therapeutic Target in Glioma. E. Clay, X. Shi, Y. Liu, C.C. DiRusso, P.N. Black, P.A. Watkins, *Johns Hopkins University School of Medicine, Kennedy Krieger Institute, University of Nebraska Lincoln* **(781.17)**

117 Plant Biochemistry and Metabolism (Session I)

SPOTLIGHT SESSION #plants

2:30 PM – 4:00 PM CONVENTION CENTER, W187B

CHAIR: E. B. Cahoon

SESSION II, SUNDAY, 4:15 PM, ROOM W178B.

2:30 Cracking the Interorganellar Communication Codes. A.J. de Souza, J. Svozil, J. Wang, H. Ke, Y. Xiao, W. Gruissem, K. Dehesh, *UC Riverside, ETH Zurich, Switzerland and UC Davis* **(617.2)**

2:45 Understanding Plant Energy Sensing and Homeostasis. S. Williams, J. Yen, G. Gillaspy, *Virginia Tech* **(628.11)**

3:00 Probing the Global Kinome and Phosphoproteome in Chlamydomonas reinhardtii via Sequential Enrichment and Quantitative Proteomics. E.G. Werth, E.W. McConnell, T.K. Gilbert, I.C. Lianez, C.W. Perez, C. Manley, L.M. Graves, J.G. Umen, L.M. Hicks, *University of North Carolina at Chapel Hill and Donald Danforth Plant Science Center* **(926.5)**

3:15 Molecular Basis of TyrA Substrate Specificity Underlying the Evolution of Alternative Tyrosine Biosynthetic Pathways. C. Schenck, C. Holland, M. Schneider, J. Jez, H. Maeda, *University of Wisconsin-Madison and Washington University in St. Louis* **(628.4)**

3:30 Regulation of the Arabidopsis thaliana $Ca2^{+}$-Dependent Protein Kinase, CPK28, by Autophosphorylation and Calmodulin-Binding. K.W. Bender, R.E. Zielinski, S.C. Huber, *University of Illinois at Urbana-Champaign and USDA-Agricultural Research Service* **(772.13)**

3:45 **117.1** ORM: A Central Regulator of Sphingolipid Homeostasis and Composition inArabidopsis. E. Cahoon, *University of Nebraska, Lincoln*

118 Protein Folding, Aggregation, and Chaperones: Emerging Frontiers

SPOTLIGHT SESSION #proteins

2:30 PM – 4:00 PM CONVENTION CENTER, W187C

CHAIR: X. Zhang

2:30 **118.1** A Fluorogenic Proteostasis Sensor to Monitor Proteome Stress in Real-Time. X. Zhang, Y. Liu, *Penn State University*

2:45 Identifying and Ameliorating Complex Collagen Misfolding Defects. M.D. Shoulders, *Massachusetts Institute of Technology* **(763.11)**

3:00 The Structural Basis for Polypeptide Translocation by the HSP104 Disaggregase. D.R. Southworth, A. Yokom, S. Gates, M. Jackerel, J. Shorter, *University of Michigan and University of Pennsylvania* **(604.3)**

3:15 Metal Induced Conformational Changes of Alpha-Synuclein and the Role of Ambient Oxygen. H.R. Lucas, *Virginia Commonwealth University* **(763.15)**

3:30 Understanding the Influence of Translation-Elongation Kinetics on Protein Structure and Function. E.P. O'Brien, *Penn State University* **(604.2)**

3:45 Translation of Heat Shock Proteins Is Regulated by Poly(A)-Binding Protein Assembly. C.D. Katanski, J. Riback, E. Pilipenko, D.A. Drummond, *University of Chicago* **(763.10)**

119 Immigration and Visa Issues for Foreign STEM Graduate Students and Postdoctoral Fellows

EDUCATION ROUNDTABLE #ASBMBed

2:30 PM – 4:45 PM CONVENTION CENTER,W185A

This will be an exciting panel session offered for the first time at the ASBMB annual conference that is aimed at all foreign STEM graduate students, post-doctoral fellows and their mentors who are seeking information on how to navigate immigration and VISA issues. Speakers all have personal or professional experience that they will share about the various visa and immigration processes. Please note that this is an informational session. Nothing said during this session should be taken as legal counsel. Attendees should seek their own legal help concerning their personal visa issues.

PANELISTS: R. Mukhopadhyay, *ACS;* J. Kerilla, *International Scholars, Johns Hopkins University;* N. Vizer, Nancy M. Vizer, *PC;* V. Wang, *Law Office of Vivian Wang*

120 High Resolution Imaging in Medicine

SEBM SYMPOSIUM #cellbio

3:00 PM – 5:00 PM CONVENTION CENTER,W184D

CHAIR: W. Zimmer

Guest Society: Society for Experimental Biology and Medicine

3:00		Chair's Introduction.
3:10		Illuminating biology at the nanoscale and systems scale using single-molecule and super-resolution imaging. X. Zhuang, *Howard Hughes Medical Institute*
3:45		In Vivo Heart Imaging Shows Single Myosins Under Tension Down Shift Step-Size. T. Burghardt, *Mayo Clinic*
4:15		Imaging subcellular dynamics in three dimensions. R. Ober, *Texas A&M University*
4:45		Discussion.

121 Natural Product Discovery and Biosynthesis

SPOTLIGHT SESSION #chembio

4:15 PM – 5:45 PM CONVENTION CENTER,W183C

CHAIR: R. Butcher

4:15	121.1	Discovery and Biosynthesis of Hybrid Polyketide-Nonribosomal Peptides in Nematodes. R.A. Butcher, L. Feng, Q. Shou, *University of Florida*
4:30		Polar Lipid in Human Blood Regulates Stage Differentiation in the Human Malaria Parasite Plasmodium falciparum. J.P. Gerdt, N.M. Brancucci, C. Wang, S.R. Adapa, M. Zhang, J.H. Adams, R.H. Jiang, M. Marti, J. Clardy, *Harvard Medical School, University of Glasgow, United Kingdom, Harvard T.H. Chan School of Public Health and University of South Florida* **(776.4)**
4:45		Characterization of an Unprecedented Hybrid Pteridine-Nonribosomal Peptide Synthetase-Like Biosynthetic Gene Cluster. C.E. Perez, H. Park, K.W. Barber, J. Rinehart, J.M. Crawford, *Yale University and Yale School of Medicine* **(766.19)**
5:00		High-Throughput Natural Products Discovery in Fungi Using FAC-MS Technology. K.D. Clevenger, J.W. Bok, R. Ye, G.P. Miley, M.H. Verdan, T. Velk, C. Chen, K. Yang, P. Gao, M. Robey, M. Lamprecht, P.M. Thomas, M.N. Islam, J. Palmer, C.C. Wu, N.P. Keller, N.L. Kelleher, *Northwestern University, University of Wisconsin at Madison, Intact Genomics, Inc and U.S. Forest Service* **(766.6)**
5:15		Biosynthetic Studies of the Antibiotic Uncialamycin. H. Hindra, T. Huang, D. Yang, X. Yan, H. Ge, B. Shen, *The Scripps Research Institute* **(766.2)**
5:30		The PepSAVI-MS Pipeline for Natural Product Bioactive Peptide Discovery. C.L. Kirkpatrick, D. Pritchard, N. Parsley, Y. Liu, D.W. Hoskin, L.N. Shaw, L.M. Hicks, *University of North Carolina, Chapel Hill, Dalhousie University, Canada and University of South Florida* **(609.6)**

I22 Signal Transduction and Protein Modifications

SPOTLIGHT SESSION #cellsignal

4:15 PM – 5:45 PM CONVENTION CENTER, W184A

CHAIR: J. Zhang

4:15 Elucidation of Molecular Signaling Battles Between the Eukaryotic Host and a Bacterial Pathogen. K. Orth, M. de Souza Santos, D. Salomon, *HHMI, UT Southwestern Medical Center, UT Southwestern Medical Center* **(614.12)**

4:30 Novel Physiological Targets of Fic-Mediated Adenylylation/AMPylation. S. Mattoo, A. Sanyal, *Purdue University* **(602.8)**

4:45 Multi-Generational Silencing Dynamics Control Cell Aging. N. Hao, Y. Li, M. Jin, R. O'Laughlin, L. Tsimring, L. Pillus, J. Hasty, *University of California San Diego* **(614.6)**

5:00 Uncovering Novel Substrates and Functions for the Calcineurin Phosphatase in Human Cells. C.P. Wigington, J. Roy, N.P. Damle, S. Ei Cho, N. Davey, Y. Ivarsson, C. Wong, A. Gingras, M.S. Cyert, *Stanford University, University College Dublin, Ireland, Uppsala University, Sweden and University of Toronto, Canada* **(771.1)**

5:15 PASsing on Signals: Activation of PAS Kinase by mTOR Orchestrates Epigenetic Processes of Stem Cell Differentiation. C.K. Kikani, X. Wu, J. Rutter, *University of Utah School of Medicine* **(614.28)**

5:30 The Secret Life of Kinases: Insights into Non-Catalytic Functions from Pseudokinase. J.M. Murphy, E.J. Petrie, K. Davies, M.C. Tanzer, A.V. Jacobsen, J.M. Hildebrand, I.S. Lucet, J. Silke, P.E. Czabotar, *Walter and Eliza Hall Institute of Medical Research, Australia* **(770.17)**

I23 DNA Replication, Recombination and Repair (Session I)

SPOTLIGHT SESSION #DNA

4:15 PM – 5:45 PM CONVENTION CENTER, W184BC

CHAIR: H. Merrikh

SESSION II, MONDAY AT 2:30 PM, ROOM W185BC.

4:15 **123.1** Resolution of Head-On Replication-Transcription Conflicts in Bacteria. H. Merrikh, A. Hall, K. Lang, *University of Washington*

4:30 Defining Lagging-Strand Polymerase Dynamicsin Vivo. D. Smith, *New York University* **(753.3)**

4:45 Role of the Excluded Strand in DNA Unwinding by Hexameric Helicases. M. Trakselis, *Baylor University* **(592.1)**

5:00 *Escherichia coli* DinB and Replication-Transcription Collisions. T. Tashjian, J.A. Halliday, C. Herman, V. Godoy, *Northeastern University and Baylor College of Medicine* **(591.3)**

5:15 The Epsilon Subunit of DNA Polymerase III in the Bacterial Response to Quinolones. Z. Whatley, N. Sy, S. DiDomenico, A. Finck, *Gettysburg College* **(592.7)**

5:30 Dynamics of the *E. coli* Beta Clamp and Its Influence on DNA Loading. B. Koleva, J. Baez, J. Conway, A. Wu, P. Beuning, *Northeastern University and Colgate University* **(592.4)**

I24 Emerging Technologies in Proteomics

SPOTLIGHT SESSION #omics

4:15 PM – 5:45 PM CONVENTION CENTER, W185BC

CHAIR: L. Huang

4:15 **124.1** Structural Analysis of the 26S Proteasome Complex to Understand Its Function and Regulation. L. Huang, *UC, Irvine*

4:30 Structure and Function of the Nuclear Pore Complex Cytoplasmic mRNA Export Platform. Y. Shi, J. Fernandez-Martinez, S. Kim, U. Paula, R. Pellarin, M. Gagnon, I. Chemmama, J. Wang, I. Nudelman, W. Zhang, R. Williams, W. Rice, D. Strokes, D. Zenklusen, A. Sali, M.P. Rout, B.T. Chait, *Rockefeller University, University of Pittsburgh School of Medicine, UCSF, NYU School of Medicine and University of Montreal, Canada* **(926.7)**

4:45 Analysis of Proteins and Protein Interactions by Size Exclusion Chromatography— High Resolution Mass Spectrometry. F.M. Busch, A. Sahasrabuddhe, Z. vanAernum, B. Rivera, V.H. Wysocki, *The Ohio State University and Phenomenex* **(926.9)**

5:00 Native Proteomics: A New Approach to Protein Complex Discovery and Characterization. P.D. Compton, O. Skinner, N. Haverland, L. Fornelli, P. Doubleday, H. Seckler, L. Schachner, N. Kelleher, *Northwestern University* **(760.2)**

5:15 Detecting Lipid Induced Structural Changes of Marburg Virus-VP40 Protein Using Hydrogen-Deuterium Exchange Mass Spectroscopy (HDX-MS). K.J. Wijesinghe, S. Urata, S. Li, R.V. Stahelin, *University of Notre Dame, University of California-San Diego and Indiana University School of Medicine-South Bend* **(761.1)**

5:30 Phosphoproteins in Extracellular Vesicles as Candidate Markers for Breast Cancer. W.A. Tao, I. Chen, A. Iliuk, *Purdue University* **(926.4)**

125 Regulation of Intracellular Cholesterol Transport

SPOTLIGHT SESSION #lipids

4:15 PM – 5:45 PM CONVENTION CENTER, W186ABC

CHAIR: A. Radhakrishnan

4:15 Structure of Human Niemann-Pick C1 (NPC1) Protein and NPC1-NPC2 Complex. X. Li, *Rockefeller Univeristy* **(629.2)**

4:30 NPC1-Mediated Cholesterol Export from Lysosomes. S.R. Pfeffer, *Stanford University* **(948.1)**

4:45 OlyA— A Tool to Study Sphingomyelin-Cholesterol Interactions in Plasma Membranes. S. Endapally, A. Radhakrishnan, *UT Southwestern Medical Center* **(629.4)**

5:00 Homeostatic Regulation of Serine Palmitoyltransferase (SPT) Is Mediated by a Direct Interaction of Ceramide with the SPT/ORMDL Complex. D. Davis, B. Wattenberg, *Virginia Commonwealth University* **(946.1)**

5:15 Sac1 Degrades Its Lipid Substrate PI4P in the ER to Maintain a Steep Electrochemical Gradient on Donor Membranes. G. Hammond, R. Wills, J. Zewe, *University of Pittsburgh* **(948.4)**

5:30 Control of PI4P Turnover by Endogenous OSBP for Fast Cholesterol Transport at Membrane Contact Sites. B. Mesmin, J. Bigay, J. Polidori, S. Lacas-Gervais, B. Antonny, *Institut de Pharmacologie Moléculaire et Cellulaire–CNRS, France and Université Nice Sophia Antipolis, France* **(629.9)**

126 Glycans and Glycobiology

SPOTLIGHT SESSION #glyco

4:15 PM – 5:45 PM CONVENTION CENTER, W187A

CHAIR: K. G. Ten Hagen

4:15 126.1 Imaging Developmentally Regulated Secretory Granule Biogenesis and Exocytosis. K. Ten Hagen, D.T. Tran, S. Ji, *NIH*

4:30 Glycosylation Quality Control by the Golgi Structure. Y. Wang, S. Huang, Y. Haga, H.K. Kweon, H. Hirayama, P. Andrews, T. Suzuki, *University of Michigan and RIKEN, Japan* **(784.1)**

4:45 The Expanding Glycouniverse: Diverse Glycan Modifications in Lower Eukaryotes. I.B. Wilson, S. Yan, A. Hykollari, B. Eckmair, J. Vanbeselaere, K. Paschinger, *Universitaet fuer Bodenkultur Wien, Austria* **(784.5)**

5:00 Glycoproteins in the Midgut Microvilar Membrane of *Spodoptera frugiperda* (Lepidoptera: Noctuidae). F.J. Fuzita, K.B. Chandler, J.R. Haserick, C. Ferreira, W.R. Terra, C.E. Costello, *University of Sao Paulo, Brazil and Boston University* **(784.6)**

5:15 Identification of a Post-Translational Modification with Ribitol-Phosphate and Its Defect in Muscular Dystrophy: Roles of ISPD, Fukutin, and FKRP in α-Dystroglycan Glycosylation. M. Kanagawa, K. Kobayashi, M. Tajiri, H. Manya, A. Kuga, Y. Yamaguchi, Y. Wada, T. Endo, T. Toda, *Kobe University, Japan, Osaka Medical Center and Research Institute for Maternal and Child Health, Japan, Tokyo Metropolitan Geriatric Hospital and Institute of Gerontology, Japan and RIKEN Global Research Cluster, Japan* **(753.3)**

5:30 Structural Effects of Skp1 Glycosylation. D.F. Thieker, G. Chalmers, X. Xu, M.O. Sheikh, J.N. Glushka, J.H. Prestegard, R. Woods, C.M. West, *University of Georgia* **(952.3)**

127 Plant Biochemistry and Metabolism (Session II)

SPOTLIGHT SESSION #plants

4:15 PM – 5:45 PM CONVENTION CENTER, W187B

CHAIR: A. P. Alonzo

SESSION I, SUNDAY, 2:30 PM, ROOM W187B.

4:15 Deficiencies in RNS2-Mediated Ribosomal RNA Turnover Cause Changes in the Pentose Phosphate Pathway Flux and Alter Cell Growth in *Arabidopsis*. G.C. MacIntosh, S. Morriss, X. Liu, D. Bassham, *Iowa State University* **(911.3)**

4:30 Structural Basis for Regulation of Rhizobial Nodulation and Symbiosis Gene Expression by the Regulatory Protein NolR. S. Lee, J. Jez, *Washington University in St. Louis* **(623.3)**

4:45 A Prokaryotic-Like Lysophosphatidic Acid Acyltransferase Reveals Unique Features of Triacylglycerol Biosynthesis in Microalgae. Y. Kim, E.L. Terng, W. Riekhof, E.B. Cahoon, H. Cerutti, *University of Nebraska-Lincoln* **(629.28)**

5:00 Engineering Biochemical Bypass to Photorespiration to Improve Photosynthesis and Crop Production. P. South, D.R. Ort, *USDA-ARS / University of Illinois and USDA-ARS* **(628.3)**

5:15 Characterizing Lipid Production in*Chlorella vulgaris* Exposed to Sethoxydim, an Acetyl-CoA Carboxylase Inhibitor. A.L. Smythers, A.T. Holland, A. Roberts, D.R. Kolling, *Marshall University* **(629.30)**

5:30 127.1 Application of Metabolomics and Fluxomics to Study Fatty Acid Synthesis in Alternative Crops. A. Alonso, E. Tsogtbaatar, J. Cocuron, *The Ohio State University*

128 Non-Coding RNA Functional Diversity

SPOTLIGHT SESSION #RNA

4:15 PM – 5:45 PM CONVENTION CENTER, W187C

CHAIR: J. D. Kohtz

4:15 128.1 *TheEvf2* Enhancer lncRNA Links Chromosomal Interactions and Interneuron Diversity. J. Kohtz, I. Cajigas, K.R. Swyter, M. Bastidas, A. Chakraborty, E. Morris, F. Ay, *Northwestern University, Feinberg School of Medicine and La Jolla Institute for Allergy & Immunology*

4:30 A Cellular Non-Coding RNA Activator of Human 2′-5′-Oligoadenylate Synthetase 1. B.M. Calderon, G.L. Conn, *Emory University* **(599.6)**

4:45 Role of Long Non-Coding RNA *Alive* in Response to Angiotensin Ii in Vascular Smooth Muscle Cells. V. Amaram, S. Das, A. Leung, A. Reddy, L. Lanting, R. Natarajan, *City of Hope* **(757.8)**

5:00 New Biotechnology to Inhibit microRNA Activity *in Vivo* and *in Vitro*. B. Amendt, H. Cao, W. Yu, T. Sharp, S. Eliason, *University of Iowa* **(757.15)**

5:15 Targeting High-Mobility Group Box2 by miR-127 Modulates Pluripotency of Mouse Embryonic Stem Cells and Contributes to Aggressiveness of Hepatocellular Carcinoma. Y. Zhao, Z. Yang, L. Wang, *University of Connecticut, Veterans Affairs Connecticut Healthcare System and Yale University* **(757.1)**

5:30 Transcriptome-Wide Mapping of the miR-122 Targetome Revealed Its Mechanistic Role in the Maintenance of Liver Homeostasis. J.M. Barajas, J. Luna, K. Teng, R. Darnell, K. Ghoshal, *The Ohio State University and The Rockefeller University* **(757.14)**

129 Organizing A Successful ASBMB Student Chapter

WORKSHOP #ASBMBed

5:00 PM – 5:45 PM CONVENTION CENTER, W185A

Sponsored by ASBMB Student Chapters Steering 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 successful chapter activities and best practices.

130 Grant Success Demystified

WORKSHOP #profdev

6:15 PM – 7:45 PM CONVENTION CENTER, W184BC

CHAIR: S. Barbour, S. Flores

Sponsored by ASBMB Minority Affairs Committee

This workshop will provide participants with an effective set of tools to enhance their grantsmanship and demystify the grant submission and review process. The workshop presenters have extensive knowledge of all aspects of the process for NIH and NSF submissions, and will focus on practical methods that have been used with great success in the more extensive two-day program for Interactive Mentoring Activities for Grantsmanship Enhancement.

131 High-Performance Mass Spectrometry for Proteomics

WORKSHOP #profdev

6:15 PM – 7:45 PM CONVENTION CENTER, W185BC

CHAIR: J. Brodbelt, J. Coon

The improvements in performance metrics of mass spectrometers, coupled with the development of new MS/MS methods and new strategies for quantitation, have significantly accelerated the field of proteomics, to the point where nearly every protein in a human cell can be quantified. This workshop will showcase some of the latest mass spectrometry technologies for identifying proteins and their posttranslational modifications, as well as forefront applications of bottom-up and top-down proteomic approaches to untangling the multi-faceted networks that regulate complex organisms and their diseases.

132 Beyond DNA Methylation and Histone Modifications

WORKSHOP #profdev

6:15 PM – 7:45 PM CONVENTION CENTER, W186ABC

CHAIR: W. Li, K. Tan

Epigenetic mechanisms, such as DNA methylation and histone modifications, can change gene expression and cause diseases without changing the underlying DNA sequence. Next-generation sequencing has been transforming the field of epigenetics, generating large datasets of BS-seq, ChIP-seq and RNA-seq information. This poses great challenges for data analysis, requiring knowledge of best ways to distill high-dimensional information into comprehensible conclusions. This workshop will present several cutting-edge analytical frameworks for epigenomic data analysis and demonstrate how to integrate multidimensional epigenomic datasets to construct condition-specific transcriptional regulatory networks.

133 ASBMB Welcome Reception

Sponsored by the Minority Affairs Committee

SPECIAL EVENT #profdev

7:30 PM – 9:00 PM HYATT REGENCY, REGENCY BALLROOM C

This annual professional networking event has an emphasis on encouraging mentoring relationships and includes an opportunity to view and discuss ASBMB Graduate Student Travel Award research posters. ASBMB members and biochemistry registrants welcome.

MONDAY APRIL 24

253 Mildred Cohn Award in Biological Chemistry

AWARD LECTURE #bigtalks

8:45 AM – 9:15 AM CONVENTION CENTER, W183AB

8:45 Introduction.

8:50 253.1 A New Paradigm for Catalysis of Nucleotidyltransfer Reactions. W. Yang, Y. Gao, N. Samara, J. Wu, *NIDDK, NIH*

254 ASBMB Young Investigator Award

AWARD LECTURE #bigtalks

9:15 AM – 9:45 AM CONVENTION CENTER, W183AB

9:15 Introduction.

9:20 254.1 What Lurks Beneath (The Membrane): A Mechanistic Exploration of Rhomboid Proteolysis. S. Urban, *Johns Hopkins University School of Medicine*

255 New Insights Into Nuclear Structure and Function

SYMPOSIUM #cellbio

10:00 AM – 12:00 PM CONVENTION CENTER, W183C

CHAIR: D. L. Spector

10:00 255.1 The Nuclear Lamins Are Major Determinants of Nuclear Architecture. R. Goldman, S.A. Adam, A.E. Goldman, T. Shimi, M. Kittisopikul, K. Jaqaman, Y. Turgay, O. Medalia, *Feinberg School of Medicine, Northwestern University, University of Texas Southwestern Medical Center and University of Zurich, Switzerland*

10:30 255.2 The Role of Long Non-Coding RNAs in Nuclear Organization and Disease. D.L. Spector, *Cold Spring Harbor Laboratory*

11:00 255.3 Pre-mRNA Splicing, Histone Modification, and the Coordinated Control of Gene Expression. T.L. Johnson, M. Hossain, *University of California, Los Angeles*

11:30 255.4 Single Molecule Transcription Factor Dynamics in Mammalian Cells and the Syncytial *Drosophila* Embryo. X. Darzacq, M. Mir, *University of California, Berkeley*

256 Basis of Longevity and Age-Related Diseases

SYMPOSIUM #cellsignal

10:00 AM – 12:00 PM CONVENTION CENTER, W184BC

CHAIR: A. Brunet

10:00 256.1 Repurposing Drugs to Ameliorate Aging. L. Partridge, *Max Planck Institute for Biology of Ageing, Germany*

10:30 256.2 Orchestrating Aging Across a Troubled Soma. A. Dillin, *University of California, Berkeley and HHMI*

11:00 256.3 Understanding and Modeling Aging. A. Brunet, *Stanford University School of Medicine*

11:30 256.4 Targeting mTOR Signaling to Promote Healthy Longevity. M. Kaeberlein, *University of Washington*

257 New Insights Into Mechanisms of Antibiotic Action

ISSUES IN DEPTH #antibiotics

10:00 AM – 12:00 PM CONVENTION CENTER,W185BC

CHAIR: E. Brown

10:00 257.1 Bacterial Metabolism and Antibiotic Efficacy. J.J. Collins, *MIT and Harvard University*

10:30 257.2 Antibiotics from the Microbial Dark Matter. K. Lewis, *Northeastern University*

11:00 257.3 Structures and Functions of Nonribosomal Peptide Synthetases, Natural Antibiotic Factories. M. Schmeing, *McGill University, Canada*

11:30 257.4 Context-Specific Action of Ribosomal Antibiotics. N. Vazquez-Laslop, A. Mankin, *University of Illinois at Chicago*

258 Discovery and Development of New Enzyme Chemistry

SYMPOSIUM #enzymes

10:00 AM – 12:00 PM CONVENTION CENTER,W186ABC

CHAIR: J. M. Bollinger, Jr.

10:00 258.1 Mechanistic Pathways to Unusual Outcomes in Reactions of Iron-Dependent Oxygenases. J. Bollinger, Jr., C. Krebs, *Penn State University*

10:30 258.2 Chemical Discovery in the Microbial World. E.P. Balskus, *Harvard University*

11:00 258.3 Radical Strategies for Biological Methylation. S.J. Booker, *The Pennsylvania State University and HHMI*

11:30 Evolution of heme proteins for expanding the chemistry of the biological world. J. Kan, *California Institute of Technology*

259 Supramolecular Complexes

SYMPOSIUM #proteins

10:00 AM – 12:00 PM CONVENTION CENTER,W187ABC

CHAIR: A-C. Gingras

10:00 259.1 In Vivo Mapping of Protein Complex Organization. A. Gingras, *Lunenfeld-Tanenbaum Research Institute at Mount Sinai Hospital, Canada*

10:30 259.2 Evolution and the Proteome: Insights Into Protein Function from Deeply Conserved Gene Modules. E. Marcotte, *University of Texas, Austin*

11:00 259.3 Probing Protein Assemblies and Interactions by Hybrid Mass Spectrometry Approaches. A.J. Heck, *Utrecht University, Netherlands*

11:30 259.4 Electron Cryomicroscopy of Rotary Atpases. J.L. Rubinstein, *The Hospital for Sick Children, Canada*

260 A 21st Century Approach to STEM Teaching and Research Mentoring

SYMPOSIUM #ASBMBed

10:00 AM – 12:15 PM CONVENTION CENTER,W185A

CHAIR: M. Carroll

This session is for students, trainees and faculty who want to maximize their efforts in STEM teaching and mentoring. Recent innovations in such topics such as graduate education and professional development will be discussed with the purpose of providing attendees with new insights and ideas to bring back to their home institutions to amplify their own program's success.

10:00 Chair's Introduction.

10:05 Design of a Robust Undergraduate Biochemistry Laboratory Course Based on a Modified and Expanded Bovine Serum Albumin Purification Scheme. T. Odunuga, N. Cheatwood, J. Mullins, M. Harris, *Stephen F. Austin State University* **(752.9)**

10:20 CRISPR in the Undergraduate Classroom: A CURE. H.J. Evans Anderson, *Winthrop University* **(589.6)**

10:35 Discussion.

10:40 A Framework for Assessing Molecular Visualization Skills and Competencies. D.R. Dries, P.A. Craig, D. Dean, H.V. Jakubowski, W.R. Novak, A.I. Roca, C.R. Terrell, M.A. Franzen, *Juniata College, Rochester Institute of Technology, University of Saint Joseph, College of St. Benedict/St. John's University, Wabash College, ProfileGrid.org, University of Minnesota, Rochester and Milwaukee School of Engineering* **(588.9)**

10:55 260.1 Innovations in Biotechnology Graduate Education. D.S. Jamison-McClung, *University of California, Davis*

11:20 Discussion.

11:25 260.2 Group Coaching, Grounded in Theory and Evidence, Deployed Through the National Research Mentoring Network (NRMN) to Complement Research Mentoring and Increase Diversity. R. McGee; Jr., *Northwestern University Feinberg School of Medicine*

11:50 260.3 Maximizing Career and Professional Development During Doctoral Training. S.E. Feeney, *University of California, Davis*

261 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

12:30 PM – 1:00 PM CONVENTION CENTER, HALL F

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

A. Brunet, *Stanford University School of Medicine;* X. Darzacq, *UC, Berkeley;* R. Goldman, *Northwestern University Feinberg School of Medicine;* M. Kaeberlein, *University of Washington;* L. Partridge, *Max Planck Institute for Biology of Ageing;* D. Spector, *Cold Spring Harbor Lab*

262 Advocacy Town Hall

SPECIAL EVENT #profdev

12:30 PM – 2:00 PM CONVENTION CENTER, W184D

Sponsored by ASBMB Public Affairs Advisory Committee

You've got questions, and we've got answers. The ASBMB Public Affairs Advisory Committee, PAAC, invites you to participate in our science policy town hall. Join our expert panelists as they discuss what impact President Trump and the new Congress will have on the biomedical research enterprise. Mr. Corb will provide highlights and perspectives as the ASBMB voice to political leaders in Capitol Hill, in the White House, and at the federal science funding agencies. Dr. Sundquist will share what ASBMB has done in the important space of sustaining the biomedical research community, and Dr. Lauer will provide NIH perspectives on key policy issues.

Your questions will be taken live, as well as on twitter, #PolicyTownHall.

Boxed lunches will be available to the first 50 attendees, beginning at 12:20 p.m.

PANELISTS: B. Corb, *ASBMB Public Affairs Director;* M. Lauer, *NIH Director of External Research;* W. Sundquist, *PAAC Chair, University of Utah*

263 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

1:30 PM – 2:00 PM CONVENTION CENTER, HALL F

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

E. Balskus, *Harvard University;* S. Booker, *Pennsylvania State University;* A. Heck, *Utrecht University;* E. Marcotte, *UT, Austin;* S. Urban, *Johns Hopkins University School of Medicine, ASBMB Young Investigator Award;* N. Vasquez-Laslop, *University of Illinois at Chicago*

264 Signal Transduction: Building Blocks and Scaffolds

SPOTLIGHT SESSION #cellsignal

2:30 PM – 4:00 PM CONVENTION CENTER, W183C

CHAIR: A. Bennett

2:30 TAK1/TRAF6 Signalling in Regulation of Skeletal Muscle Mass. A. Kumar, S.M. Hindi, *University of Louisville School of Medicine* **(614.7)**

2:45 mTORC1 Balances Cellular Amino Acid Supply with Demand for Protein Synthesis Through Post-Transcriptional Control of ATF4. C.C. Thoreen, Y. Park, *Yale School of Medicine* **(614.32)**

3:00 The (AAA+) ATPases PSMC5 and VCP/p97 Control ERK1/2 Signals Transmitted Through the Shoc2 Scaffolding Complex. E. Galperin, E. Jang, D. Anderson, H. Jang, *University of Kentucky and Cleave Bioscience* **(930.1)**

3:15 A Filamin Phosphorylation Gateway to GPCR Function. S. Ithychanda, K. Dou, S. Karnik, J. Qin, *Cleveland Clinic* **(614.24)**

3:30 **264.1** MAPK Substrate Phosphoproteomics Screen Identifies GRAB as a Novel MKP-5-Regulated MAPK Substrate. A.M. Bennett, *Yale Univeristy School of Medicine*

3:45 Structure of a GEM-Complexed Gai Protein Provides Novel Insights Into the Emerging Human GEMiome. I. Kufareva, N. Kalogriopoulos, S.D. Rees, N. Sun, N. Aznar, G. Chang, P. Ghosh, *University of California, San Diego* **(619.8)**

265 Chemical Tools to Solve Biological Puzzles

SPOTLIGHT SESSION #chembio

2:30 PM – 4:00 PM CONVENTION CENTER, W184BC

CHAIR: Y. J. Zhang

2:30 **265.1** Nature's Imitation Game: Decipher the Combinatorial CTD Code for Eukaryotic Transcription. Y. Zhang, *UT Austin*

2:45 Drugging the Undruggable Steroid Receptor Coactivators J. Wang, *Baylor College of Medicine* **(608.2)**

3:00 Earmarking Target-Specific Redox Trajectories for Wound Healing in Zebrafish. Y. Aye, *Cornell University and Weill Cornell Medical College* **(608.14)**

3:15 Mechanistic Comparison of Structurally Divergent Transcriptional Coactivators Through Covalent Activator-Coactivator Complexes. A.R. Henderson, M. Beyersdorf, N. Foster, K. Sanford, M. Henley, A. Mapp, *University of Michigan* **(608.11)**

3:30 PTEN Regulation by WWP2. Z. Chen, D. Dempsey, W. Xu, X. Li, D. Dempsey, P. Devreotes, C. Wolberger, S. Gabelli, P. Cole, *Johns Hopkins University* **(608.5)**

3:45 Characterization of a Cardiac Drug-Inactivating Enzyme from the Prominent Human Gut Microbe, *Eggerthella lenta*. N. Koppel, J. Bisanz, P. Turnbaugh, E.P. Balskus, *Harvard University and UCSF* **(608.3)**

266 DNA Replication, Recombination and Repair (Session II)

SPOTLIGHT SESSION #DNA

2:30 PM – 4:00 PM CONVENTION CENTER, W185BC

CHAIR: J. Loparo

SESSION I, SUNDAY, 4:15 PM – 5:45 PM, W184BC

2:30 **266.1** Visualizing DNA Double Strand Break Repair with Single-Molecule Microscopy. J. Loparo, T. Graham, J. Walter, *Harvard Medical School*

2:45 DDI1- and DDI2-Dependent Removal of Replication Termination Factor Domain Containing 1 (RTFDC1) from Replication Forks Is Necessary for Proper Response to Replication Stress. M.C. Kottemann, B. Conti, F.P. Lach, A. Smogorzewska, *The Rockefeller University* **(591.1)**

3:00 Genetic and Environmental Factors That Regulate Tandem Repeat Variation in Coding Regions. S.M. Fuchs, *Tufts University and Allen Discovery Center at Tufts* **(591.4)**

3:15 Activation of Intra-S Phase Checkpoint Facilitates Tolerance of Replication Stress Caused by Mismatch Repair Processing of DNA Damage. D. Gupta, B. Lin, C.D. Heinen, *UConn Health* **(906.3)**

3:30 Molecular Mechanisms of Mutagenesis Induced by DNA Repair. B. Shen, J. Chapman, A.V. Furano, *NIH* **(906.15)**

3:45 Structure and Mechanism of a Viral Genome Packaging Motor. B. Kelch, *University of Massachusetts Medical School* **(591.8)**

267 Lipids, Metabolism and the Central Nervous System

SPOTLIGHT SESSION #metabolism

2:30 PM – 4:00 PM CONVENTION CENTER,W186ABC

CHAIR: J. M. Ellis

2:30 Up-Regulation of Atrial and Neuronal Kir3 Activity by Cholesterol. A. Rosenhouse-Dantsker, A.N. Bukiya, *University of Illinois at Chicago and The University of Tennessee Health Science Center* **(772.4)**

2:45 Potential Role of Hepatic Lipase in the Accrual of Docosahexaenoic Acid (DHA) in the Brain. S. Dhavamani, P. Yang, D. Ng, S. Khetarpal, C. Vitali, D. Rader, P. Subbaiah, *University of Illinois, University of Toronto, Canada and University of Pennsylvania* **(781.4)**

3:00 Different Lipids in Synaptic Vesicle and Synaptosome Membrane. K.T. Lewis, K.R. Maddipati, A.R. Naik, B.P. Jena, *Wayne State University* **(629.8)**

3:15 AGPAT4 Is a Mitochondrial Lysophosphatidic Acid Acyltransferase That Regulates Learning and Memory in Mice. R. Bradley, E.B. Mardian, A.S. Mitchell, D. Bloemberg, P. Marvyn, E. Bombardier, K. Moes, A. Tupling, J. Quadrilatero, R.E. Duncan, *University of Waterloo, Canada* **(781.12)**

3:30 Subcellular Localization and Functional Characterization of cAMP-Dependent Protein Kinase A Isoforms: Painting Specificity by Mosaic Brain Mapping. R. Ilouz, V. Lev Ram, M. Ellisman, S. Taylor. *UCSD* **(770.5)**

3:45 The Transmembrane Sequences of Amyloid Precursor Protein Family Members Regulate Their Ectodomain Shedding. G. Multhaup, L. Schauenburg, M. Mayer, C. Walter, M. Eravci, C. Weise, F. Liebsch, *McGill, Canada and FU Berlin, Germany* **(941.7)**

268 Gems From Genome Database Mining

SPOTLIGHT SESSION #omics

2:30 PM – 4:00 PM CONVENTION CENTER,W187A

CHAIR: W. van der Donk

2:30 Discovery of Antibiotic Peptides from Novelty-Prioritized Natural Product Genome Mining. C.J. Schwalen, D. Mitchell, *University of Illinois at Urbana-Champaign* **(939.8)**

2:45 Global Substrate Specificity of Mycobacterial Serine Hydrolases. R. Johnson, B. Bassett, B. Waibel, A. White, H. Hansen, D. Stephens, A. Koelper, G. Hoops, *Butler University* **(767.110**

3:00 Individualized Proteogenomics in Analysis of Resistance to BRAF Inhibition in Malignant Melanoma. M. Schmitt, N. Nalpas, A. Maass, B. Macek, *University of Tuebingen, Germany* **(934.3)**

3:15 HeteroPath: A Pathway-Based Computational Modeling Approach to Identify Tissue-Specific Gene Expression Networks. A. Jambusaria, J. Klomp, Z. Hong, S. Rafii, A.B. Malik, J. Rehman, *University of Illinois at Chicago and Cornell University* **(927.4)**

3:30 PathQuant: A Bioinformatic Tool to Quantitatively Annotate the Relationship Between Genes and Metabolites Through Metabolic Pathway Mapping. S. Therrien-Laperrière, S. Cherkaoui, G. Boucher, T. Consortium, F. Jourdan, G. Lettre, J. Rioux, C. Des Rosiers, *Montreal Heart Institute, Canada, University of Montreal, Canada, Institute of Molecular Systems Biology, ETH Zürich, Switzerland, INRA and Toulouse University, France* **(769.3)**

3:45 Characterizing the Functions of Structural Genomics Proteins Through Computed Chemical Properties and Experimental Chemistry. C.L. Mills, P.J. Beuning, M. Ondrechen, *Northeastern University* **(927.6)**

269 Protein Interactions and Assemblies

SPOTLIGHT SESSION #proteins

2:30 PM – 4:00 PM CONVENTION CENTER, W187B

CHAIR: K. Fleming

2:30 Designed Proteins Induce Formation of Nanocage-Containing Vesicles. J. Votteler, C. Ogohara, S. Yi, Y. Hsia, U. Nattermann, D.M. Belnap, N.P. King, W.I. Sundquist, *University of Utah and University of Washington* **(783.5)**

2:45 Chaperoning the Proteome. W.A. Houry, *University of Toronto, Canada* **(604.6)**

3:00 SOX18 Transcription Factor Interactome: Protein-Protein Interaction a New Road for Anti-Cancer Drug Discovery. M.D. Moustaqil, F. Fontaine, J. Overman, N.D. Giles, A.D. Bhumkar, A.D. O'Caroll, M. Francois, Y.D. Gambin, E.D. Sierecki, *EMBL, Australia and Institute of Molecular Bioscience, Australia* **(908.1))**

3:15 Proximity Labeling and Interactomic Study of Primary Cilia. M. Rinschen, P. Kohli, T. Benzing, B. Schermer, *University Hospital Cologne, Germany* **(926.6)**

3:30 Novel Protein Interactions Provide Insight Into the Regulation of the Polymerase Associated Factor Complex in Acute Myeloid Leukemia. J. Ropa, J. Serio, L. Chen, W. Chen, M. Mysliwski, D. Mellacheruvu, V. Basrur, A. Nesvizhskii, A. Muntean, *University of Michigan* **(604.6)933.3)**

3:45 Periplasmic Chaperones Play Hot Potato with Unfolded Outer Membrane Proteins. K.G. Fleming, S.M. Costello, A.M. Plummer, P.J. Fleming, *Johns Hopkins University* **(604.8)**

270 Alice and C. C. Wang Award in Molecular Parasitology

AWARD SESSION #bigtalks

2:30 PM – 4:10 PM CONVENTION CENTER, W184A

2:30 Alice and C.C. Wang Award presentation and speaker introduction.

2:40 **270.1** Genetic Analysis of Pathogenesis in*Toxoplasma gondii*. L.D. Sibley, *Washington University School of Medicine, St. Louis*

3:05 **270.2** Targeting Epigenetic Regulation of Malaria Blood-Stage Infections. M. Duraisingh, *Harvard T. H. Chan School of Public Health*

3:30 **270.3** Using Kinase Regression to Elucidate Host Signaling Pathways That Control Infection. N. Arang, H.S. Kain, E.K. Glennon, D.R. Dudgeon, E.NF. Walter, T.S. Gujral, A. Kaushansky, *Center for Infectious Disease Research*

3:45 **270.4** Opposing Transcriptional Forces Underlie Chronic Disease Caused by*Toxoplasma gondii*. M. White, D. Hong, D. Worth, S. Huang, J. Radke, W. Sullivan, E. Wilson, *University of South Florida, University of California Riverside and Indiana School of Medicine*

271 Tenure and Promotion across the STEM Academic Landscape

EDUCATION ROUNDTABLE #ASBMBed

2:30 PM – 4:45 PM CONVENTION CENTER, W185A

This panel session is for all interested in pursuing or are currently employed as faculty in academia. Speakers are highly successful STEM faculty at an array of academic institutions. They will be sharing advice gained from their own journey and answering attendee's questions.

PANELISTS: A. Aguanno, *Marymount Manhattan College;* T. Baird, Jr., *San Francisco State University;* T. Baldwin, *UC, Riverside;* V. Bandarian, *University of Utah;* M. Carroll, *Medgar Evers College/CUNY*

272 Progress Toward Adoption of Microphysiological Systems in Biology and Medicine

SEBM SYMPOSIUM #cellbio

3:00 PM – 5:00 PM CONVENTION CENTER,W184D

CHAIR: J.Wikswo

Guest Society: Society for Experimental Biology and Medicine

3:00 Chair's Introduction.

3:10 Evolution of a Human Liver MPS Platform. L. Taylor, *University of Pittsburg Drug Discovery Institute*

3:35 Programming microphysiological systems for children's health protection. T. Knudsen, *U.S. Environmental Protection Agency*

4:00 Integrating the female reproductive tract organs through hormonal control using microfluidics. J. Burdette, *University of Illinois at Chicago*

4:25 Assembly of stem cell-derived human tissues for screening applications. W. Murphy, *University of Wisconsin-Madison*

4:50 Conclusion.

273 Structural Dynamics of Enzymes

SPOTLIGHT SESSION #enzymes

4:15 PM – 5:45 PM CONVENTION CENTER,W183C

CHAIR: D. D. Boehr

4:15 Dynamics Underlying Cytochrome P450cam Regioselectivity via 2D IR Spectroscopy. M. Thielges, E. Basom, *Indiana University* **(762.9)**

4:30 Altered Protein Dynamics Modified the Chemical Step in Thymidylate Synthase. A.K. Ghosh, T. Abeysinghe, A. Kohen, *The University of Iowa* **(762.5)**

4:45 Conformational Motions Impacting Function in an Enzyme Superfamily. C. Narayanan, D.N. Bernard, K. Bafna, O.P. Choudhary, C.S. Chennubhotla, P.K. Agarwal, N. Doucet, *INRS - University of Quebec, Canada, University of Knoxville* **(762.6)**

5:00 **273.1** Amino Acid Networks in Enzyme Catalysis. D. Boehr, K.F. O'Rourke, J.M. Axe, D. Sahu, R. D'Amico, *Penn State University*

5:15 Unmixing Enzyme Allostery. S. Meisburger, N. Ando, A.B. Taylor, C.A. Kahn, S. Zhang, P.F. Fitzpatrick, *Princeton University and University of Texas Health Science Center* **(607.6)**

5:30 Probing Carrier Domain Movement and Location During Catalytic Turnover by Pyruvate Carboxylase. M. St Maurice, Y. Liu, J.H. Hakala, *Marquette University* **(607.4)**

274 Lighthouses Inside Cells: Applications of Biosensors

SPOTLIGHT SESSION #chembio

4:15 PM – 5:45 PM CONVENTION CENTER,W184BC

CHAIR: Y. J. Zhang

4:15 Identifying a Serine Protease Network Involved in Ovarian Cancer Progression Using Activity-Based Protein Profiling (ABPP). C. Mehner, A. Hockla, D.C. Radisky, E.S. Radisky, *Mayo Clinic* **(918.3)**

4:30 Constructing Red-Shifted Fluorescent Protein Sensors of Cellular Redox Status. S. Norcross, K. Trull, J. Snaider, S. Doan, K. Tat, L. Huang, M. Tantama, Purdue *University* **(767.14)**

4:45 Stay on Target: Deconvoluting Mixed Redox Messages Through Precision Redox Targeting. Y. Aye, *Cornell U & Weill Cornell Med* **(774.4)**

5:00 Real Time Imaging of Tri-Molecular Protein Interactions in Live Cells by Förster Resonance Energy Transfer (FRET) Microscopy. H. Kuo, N. Chang, *National Cheng Kung University College of Medicine, Taiwan* **(952.1)**

5:15 Multiplexing Metabolomic-Based Disease Diagnosis by Surface Enhanced Raman Spectroscopy (SERS) Platform. Y. Chen, L.D. Ziegler, *Boston University* **(767.8)**

5:30 Investigation of Cellular Signaling and Epigenetic Dynamics via Optogenetic Control of Nuclear Cytoplasmic Distribution. H. Yumerefendi, B. Kuhlman, *University of North Carolina at Chapel Hill* **(763.5)**

275 Chromatin and Gene Expression

SPOTLIGHT SESSION #chromatin

4:15 PM – 5:45 PM CONVENTION CENTER, W185BC

CHAIR: C. Kaplan, P. Grant

4:15 Fine-Tuning of FACT by the Ubiquitin Proteasome System in Regulation of Transcriptional Elongation. S.R. Bhaumik, R. Sen, J. Ferdoush, A. Kaja, *Southern Illinois University School of Medicine* **(593.17)**

4:30 Role of the ELL Complex in Transcriptional Regulation in *S. pombe*. S. Gopalan, D. Gibbon, C. Seidel, Y. Zhang, L. Florens, M. Washburn, J. Conaway, R. Conaway, *Stowers Institute and University of Kansas Medical Center* **(593.12)**

4:45 Dissecting the Mechanism of H3K36 Methylation in Regulating Pre-mRNA Splicing. C. Leung, S. Douglass, T. Johnson, *UCLA* **(596.12)**

5:00 Argonaute2 Cooperates with Laminb to Repress Transcription at Lamin-Associated Domains in *Drosophila melanogaster*. E. Nazer, M. Chinen, R. Dale, E. Lei, *National Institute of Diabetes and Digestive and Kidney Diseases and National Institutes of Health* **(593.11)**

5:15 GPS2 Regulates Mitochondrial Biogenesis via Mitochondria Retrograde Signaling and Modulation of Nuclear-Encoded Mitochondrial Genes Core Promoter Accessibility. M.D. Cardamone, B. Tanasa, C.T. Cederquist, J. Huang, K. Mahdaviani, J.L. Orofino, C. Lentucci, W. Li, M.G. Rosenfeld, M. Liesa, V. Perissi, *Boston University, Stanford University, University of California Los Angeles and University of California, San Diego* **(755.15)**

5:30 Understanding the role of the histone demethylase LID in the SIN3 histone modifying comples in Drosophila melanogaster. A. Chaubal, L. Pile, *Wayne State University* **(755.18)**

276 Cardiac Metabolism and Function

SPOTLIGHT SESSION #metabolism

4:15 PM – 5:45 PM CONVENTION CENTER, W186ABC

CHAIR: F. Pascual

4:15 276.1 Metabolic and Transcriptional Alterations Observed in the Early Stages of Cardiac Substrate Switching Hint at Novel mTOR-Regulated Hypertrophy Signaling Pathways. F. Pascual, J.C. Schisler, T.J. Grevengoed, R.A. Coleman, *UNC*

4:30 Decreased Insulin Signaling Causes Loss of PFK-2 and Impaired Glycolysis in the Heart. K. Humphries, L. Bockus, C. Eyster, *Oklahoma Medical Research Foundation* **(624.3)**

4:45 NAD^+ replacement Therapy with Nicotinamide Riboside Does Not Improve Cardiac Function in a Model of Mitochondrial Heart Disease. A.R. Stram, P.M. Pride, R.M. Payne, *Indiana University School of Medicine* **(602.15)**

5:00 A Severe Inherited Arrhythmia Syndrome Highlights the Role of Fatty Acid Metabolism in the Regulation of Cardiac Electrical Activity. R. Gelinas, P. Goyette, A. Forest, B. Bouchard, I. Robillard Frayne, L. Pruneau, M. Ruiz, L. Villeneuve, J. Thompson-Legault, M. Talajic, C. Des Rosiers, J.D. Rioux, *Montreal Heart Institute, Canada and Université de Montréal, Canada* **(782.14)**

5:15 276.2 The Role of Fatty Acid Oxidation in Cardiac Remodeling and Acylation. J. Ellis, *Purdue University*

5:30 Cardiac Myocyte KLF5 Regulates Adiposity via Alteration of Cardiac FGF21. C.J. Pol, N.M. Pollak, M.J. Jurczak, I. Karagiannides, P. Ntziachristos, D.A. Scerbo, I. Aifantis, G.I. Shulman, I.J. Goldberg, K. Drosatos, *LKSM Temple University, University of Graz, Austria, Yale University School of Medicine, David Geffen School of Medicine at UCLA, NYU School of Medicine, Columbia University and NYU-Langone School of Medicine* **(624.2)**

277 Systems Biology/Proteomics in Health and Disease

SPOTLIGHT SESSION #omics

4:15 PM – 5:45 PM CONVENTION CENTER,W187A

CHAIR: Y.Yu

4:15 Mass Spectrometric Approaches Toward Site-Specific Characterization of the ADP-Ribosylated Proteome. Y. Yu, *UT Southwestern Medical Center* **(926.17)**

4:30 Dissecting the Proteome of *Drosophila* Hybrids. T.C. Bamberger, M. Montgomery, S. Martínez-Bartolomé, J.R. Yates III, *The Scripps Research Institute* **(926.2)**

4:45 Landscape of the Regulatory Elements for Lysine 2-Hydroxyisobutyrylation Pathway. H. Huang, Z. Luo, S. Qi, J. Huang, L. Dai, J. Dai, Y. Zhao, *The University of Chicago, Tsinghua University, People's Republic of China, Sichuan University, People's Republic of China* **(926.1)**

5:00 A High-Throughput Approach to Annotate the Lysine Methylome. E.M. Cornett, B.M. Dickson, K. Krajewski, M.W. Cowles, Z. Sun, S.B. Rothbart, *Van Andel Research Institute, University of North Carolina and EpiCypher* **(602.11)**

5:15 O-GlcNAcylation of the Human Kinome. X. Liu, G. Han, A. Pandey, G. Hart, *Johns Hopkins University* **(770.2)**

5:30 Role of Sumoylated SOD2 in Alcoholic Liver Disease and Liver Cancer. Y. Spissu, C. Cossu, A. Floris, M. Tomasi, *Cedars-Sinai Medical Center* **(602.10)**

278 Protein Folding, Aggregation, and Chaperones: New Applications

SPOTLIGHT SESSION #proteins

4:15 PM – 5:45 PM CONVENTION CENTER,W187B

CHAIR: A. M. Ring

4:15 Engineering Hsp104 Variants to Counter Protein Misfolding. M. Jackrel, J. Shorter, *University of Pennsylvania* **(763.3)**

4:30 Protein Aggregation Small Molecule Inhibitor Discovery and Mechanisms. B. Xu, *Virginia Tech* **(763.13)**

4:45 New Insights from High-Throughput Biophysical Screening of Protein-Sequence and Coding-Sequence Libraries. B. Allen, *Penn State University* **(604.21)**

5:00 Heat Shock Protein 90 Is Critical for*Plasmodium* Parasite Liver Stage Development. A.I. Keim, D. Posfai, T.A. Haystead, E.R. Derbyshire, *Duke University* **(604.1)**

5:15 Propagation of Tau Prions from Alzheimer's Disease and Chronic Traumatic Encephalopathy Patients in Cultured Cells. A.L. Woerman, A. Aoyagi, S. Patel, S.A. Kazmi, I. Lobach, L.T. Grinberg, A.C. McKee, W.W. Seeley, S.H. Olson, S.B. Prusiner, *University of California San Francisco, Daiichi Sankyo Co., Ltd. and Boston University* **(763.12)**

5:30 278.1 Directed Evolution of Nanobody Chaperones that Stabilize GPCR:G-Protein Complexes. A. Manglik, A.C. Kruse, A. Koehl, B.K. Kobilka, A.M. Ring, *Yale University and Havard University.*

279 Microbial Signaling and Pathogenesis

SPOTLIGHT SESSION #microbes

4:15 PM – 5:45 PM CONVENTION CENTER,W187C

CHAIR: M. J. Federle

4:15 Recognition and Selectivity of Peptide Pheromones by ComR in the Regulation of Natural Competence Among *Streptococcus* Species. G. Prehna, E. Shanker, D.A. Morrison, A. Talagas, S. Nessler, M.J. Federle, *University of Illinois at Chicago and University of Paris-Sud, France*

4:30 Yersiniabactin Is a Recyclable Copper Importer in Pathogenic *E. coli*. A.E. Robinson, E. Koh, N. Bandara, B.E. Rogers, J.P. Henderson, *Washington University*

4:45 Metabolic Stress Drives Keratinocyte Defenses Against *Staphylococcus aureus* Infection. M.A. Wickersham, S. Wachtel, T. Wong Fok Lung, R. Jacquet, G. Soong, A. Richardson, D. Parker, A. Prince, *Columbia University and University of Pittsburgh*

Monday

5:00 *Streptococus mitis* and *Streptococcus oralis* Mutate an "Essential" Gene upon Exposure to Daptomycin. H. Adams, L. Joyce, Z. Guan, R. Akins, K. Palmer, *University of Texas at Dallas, Duke University Medical Center and Methodist Charlton Medical Center*

5:15 Structural, Biochemical, and Cellular Studies of TarA, the Novel Wall Teichoic Acid Glycosyltransferase, for the Discovery of Gram-Positive Bacterial Inhibitors. M. Kattke, J. Gosschalk, R. Clubb, *UCLA*

5:30 Small-Molecule Inhibitors Against Type 1 Pili Selectively Target Uropathogenic *E. coli* in the Gut and Bladder. C.N. Spaulding, A.L. Kau, R.D. Klein, J.W. Janetka, J.I. Gordon, S.J. Hultgren, *Washington University in St. Louis*

280 ASBMB Accreditation Workshop

WORKSHOP #ASBMBed

5:00 PM – 5:45 PM CONVENTION CENTER, W185A

Learn about the ASBMB Accreditation Program, its requirements, how to apply, and how to best prepare students for the certification exam. Members of the ASBMB Education and Professional Development committee will share their advice and answer questions about the program.

281 CRISPR-Based Versatile Tools and Their Major Application Area

WORKSHOP #microbes

6:15 PM – 7:45 PM CONVENTION CENTER, W184BC

CHAIR: M. Adli, J. Corn

This workshop will present leading-edge CRISPR/Cas9-based technologies and their applications. The wide range of versatile CRISPR-based tools will be covered, with focus given to the design of experiments, downstream analysis and major pitfalls. Specific applications of CRISPR to genome-scale knockout screening and locus-specific epigenetic editing approaches will also be presented.

282 Academic Drug Discovery: Charting A Roadmap for Moving Basic Ideas Into the Clinic

WORKSHOP #chembio

6:15 PM – 7:45 PM CONVENTION CENTER, W185BC

CHAIR: Z-Y. Zhang, S. Wang

So you have identified a biological target or a pathway. Now what? This workshop is designed to teach academic investigators how to navigate the challenging but highly rewarding process of small molecule drug discovery. The workshop will cover major techniques and steps in drug discovery, and present specific examples of moving targets and molecules through the drug-discovery process. The workshop leaders will share their best practices and lessons learned.

283 How to Get A Life in the Life Sciences

WORKSHOP #profdev

6:15 PM – 7:45 PM CONVENTION CENTER, W186ABC

CHAIR: W.T. Wickner, R. Schekman

Every scientist can benefit from helpful and entertaining tips on how to navigate graduate school, postdoctoral positions, job hunts and steady funding while finding personal fulfillment. Two "chronologically gifted" biochemists, William Wickner of Dartmouth University and Nobel laureate Randy Schekman at the University of California, Berkeley, share how lifelong friendships grown in the lab and bold and feasible directions for your science can lead to long, fulfilling scientific careers.

284 Nothing Academic: A Night of Science-Themed Improv

SPECIAL EVENT #profdev

7:00 PM – 8:30 PM & 9:00 PM – 10:30 PM THE COMEDY CLUBHOUSE, 1462 N.ASHLAND

What happens when improv comedians try to tackle the world of science? Come find out at The Comedy Clubhouse when three teams of comedians take a single scientifically-themed suggestion from the audience and improvise three completely different comedic performances. You've never seen a science presentation like this before!

- Cost- $10, Doors open 30 minutes prior to show start time.
- Patrons under the age of 18 must be accompanied by an adult.

285 Young Experimental Scientists Mixer

SPECIAL EVENT

9:00 PM – 11:00 PM HILTON CHICAGO

The Young Experimental Scientists, Y.E.S., Mixer is hosted for the enjoyment of our young researchers. You must wear your badge and present ID to gain admittance. Dance, relax and network while enjoying complimentary snacks and soft drinks. Alcohol will not be served to anyone under the age of 21.

TUESDAY APRIL 25

400 Avanti Award in Lipids

AWARD LECTURE #bigtalks

8:45 AM – 9:15 AM CONVENTION CENTER, W183AB

8:45 Introduction.

8:50 400.1 Phosphoinositide Conversion in the Endolysosomal System. V. Haucke, K. Ketel, A. Wallroth, A.L. Marat, W. Lo, C. Schultz, *Leibniz Institut für Molekulare Pharmakologie, Germany and EMBL, Germany*

401 Ruth Kirschstein Diversity in Science Award

AWARD LECTURE #bigtalks

9:15 AM – 9:45 AM CONVENTION CENTER, W183AB

Sponsored by ASBMB Minority Affairs Committee

9:15 Introduction.

09:20 401.1 From Dividing Cells to Helping Students Overcome Socio-Economic Barriers. D.N. Robinson, *Johns Hopkins School of Medicine*

402 Organelle Trafficking and Signaling

SYMPOSIUM #cellbio

10:00 AM – 12:00 PM CONVENTION CENTER, W183C

CHAIR: G. K. Voeltz

10:00 402.1 Unraveling the Mechanism of ER-Associated Organelle Fission. G.K. Voeltz, *University of Colorado Boulder*

10:30 402.2 Why Mammalian Cells Respire?. N.S. Chandel, *Northwestern University Feinberg School of Medicine*

11:00 402.3 Nuclear Envelope Rupture Is Induced by Actin-Based Nucleus Confinement. M. Hetzer, E. Hatch, *The Salk Institute for Biological Studies and Fred Hutchinson Cancer Research Center*

11:30 402.4 Dynamics of Autophagy and Mitophagy in Neurons. E.L. Holzbaur, *Perelman School of Medicine and University of Pennsylvania*

403 Biochemical Basis of Cellular Processes

SYMPOSIUM #cellbio

10:00 AM – 12:00 PM CONVENTION CENTER, W184BC

CHAIR: X. Wang

10:00 403.1 Dynamic Regulation of DNA Methylation. B. Zhu, *Institute of Biophyisics, Chinese Academy of Sciences, People's Republic of China*

10:30 403.2 A Novel Enzymatic DNA Modification on Methylcytosine. G. Xu, *Institute of Biochemistry and Cell Biology, Chinese Academy of Sciences, People's Republic of China*

11:00 403.3 Pyroptosis in Anti-Bacteria Immunity: Sensing and Execution. F. Shao, *National Institute of Biological Sciences, Beijing, People's Republic of China*

11:30 403.4 Mitochondrial Pathway of Apoptosis. X. Wang, *National Institute of Biological Sciences, Beijing, People's Republic of China*

404 Antibiotic Resistance

ISSUES IN DEPTH #antibiotics

10:00 AM – 12:00 PM CONVENTION CENTER, W185BC

CHAIR: K. Lewis

10:00 **404.1** Networks of Exchanging Antibiotic Resistance Between Environmental, Commensal, and Pathogenic Microbes. G. Dantas, *Washington University School of Medicine*

10:30 **404.2** Remarkable Functional Convergence: Type I and II Toxin-Antitoxins Induce Multidrug Tolerance by (p)ppGpp-Dependent Mechanisms. K. Gerdes, *University of Copenhagen, Denmark*

11:00 **404.3** Systems Chemical Biology: A Novel Approach to Antibiotic Discovery. D.T. Hung, *Harvard and MGH*

11:30 **404.4** Modeling the Gut Microbiota with Mathematical Ecology. J. Xavier, *Memorial Sloan Kettering Cancer Center*

405 Glycobiology, Glycan Receptors and Functional Glycomics

SYMPOSIUM #glyco

10:00 AM – 12:00 PM CONVENTION CENTER, W186ABC

CHAIR: N. M. Dahms

10:00 **405.1** Deciphering the ZIP Codes of a Cell. N.M. Dahms, *Medical College of Wisconsin*

10:30 **405.2** Glycan-Binding Proteins as Microbial Detectors. L.L. Kiessling, *University of Wisconsin - Madison*

11:00 **405.3** O-Glycan Recognition and Function in Mice and Humans. R.D. Cummings, *Beth Israel Deaconess Medical Center and Harvard Medical School*

11:30 **405.4** Antibody Glycosylation: An Emerging Biomarker of Disease Activity/Protection. G. Alter, *Ragon Institute of MGH, MIT and Harvard*

406 Metal Homeostasis

SYMPOSIUM #cellbio

10:00 AM – 12:00 PM CONVENTION CENTER, W187ABC

CHAIR: A. C. Rosenzweig

10:00 **406.1** Bacterial Copper Acquisition. A.C. Rosenzweig, G.E. Kenney, L.M. Dassama, S.Y. Ro, *Northwestern University*

10:00 **406.2** Mechanisms of Zinc Metallostasis in Bacterial Pathogens. D. Giedroc, D.A. Capdevila, J.E. Martin, K.A. Edmonds, H. Wu, *Indiana University*

10:00 **406.3** Metals and Immunity. E.M. Nolan, *Massachusetts Institute of Technology*

10:00 **406.4** Regulation of Manganese Homeostasis and Detoxification by the Efflux Transporter SLC30A10. S. Mukhopadhyay, *The University of Texas at Austin*

407 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

12:30 PM – 1:00 PM CONVENTION CENTER, HALL F

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

N. Chandel, *Northwestern University Feinberg School of Medicine;* V. Haucke, *Leibniz Institut für Molekulare Pharmakologie, Avanti Award in Lipids;* M. Hetzer, *Salk Institute for Biological Studies;* E. Holzbaur, *University of Pennsylvania Perelman School of Medicine;* D. Robinson, *Johns Hopkins School of Medicine, Ruth Kirschstein Diversity in Science Award;* F. Shao, *National Institute of Biological Sciences, Beijing;* G. Voeltz, *University of Colorado, Boulder;* B. Zhu, *Inst of Biophysics, Chinese Academy of Science*

408 NIH and NSF Funding Opportunities

WORKSHOP #profdev

12:30 PM – 2:00 PM CONVENTION CENTER, W185BC

The Antibacterial Research and the Carb-X Initiative. T. Guina, A. Sheoran, *NIAID*

Alzheimers Disease Research. A. Yang, *NIA, NIH*

NSF Funding Opportunities. D. Rockcliffe, *Chemistry of Life Processes, NSF*

409 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

1:30 PM – 2:00 PM CONVENTION CENTER, HALL F

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

N. Dahms, *Medical College of Wisconsin;* G. Dantas, *Washington University School of Medicine;* K. Gerdes, *University of Copenhagen;* S. Mukhopadhyay, *UT, Austin;* E. Nolan, *MIT;* A. Rosenzweig, *Northwestern University*

410 Microbiomes and Their Evolution During Infection and Disease

SPOTLIGHT SESSION #microbes

2:30 PM – 4:00 PM CONVENTION CENTER, W183C

CHAIR: R. Page

2:30 Chronic Diabetic Wounds: Longitudinal Profiling of the Evolving Microbiome and Metabolic Landscape in Diabetic Patients.. M.B. Ammons, A.L. Fuchs, B.P. Tripet, V. Copie, A.J. Weaver, A. Braaksma, E. Johnson, C. Yeoman, *Montana State University and Bozeman Deaconess Health Hospital* **(944.9)**

2:45 Probiotic *Escherichia coli* Nissle 1917 Uses Zinc Transporters and the Siderophore Yersiniabactin to Acquire Zinc in the Inflamed Gut and Outcompete *Salmonella typhimurium*. J. Behnsen, J. Liu, M. Valeri, E. Hoover, J. Tjokrosurjo, N.P. Montaldo, S. Treacy-Abarca, O. Garibay, B.A. Gilston, R.A. Edwards, W. Chazin, E.P. Skaar, M. Raffatellu, *University of California, Irvine, University of Illinois at Chicago, College of Medicine and Vanderbilt University* **(622.6)**

3:00 Bladder and Vaginal Microbiomes Have a Corresponding Shift Following Estrogen Treatment in Post-Menopausal Women. K. Thomas-White, S. Taege, D. Johansen, E.E. Hilt, C. Brincat, E.R. Mueller, L. Brubaker, A.J. Wolfe, *Loyola University Chicago* **(940.4)**

3:15 The Metatranscriptome of the Rhesus Macaque: Investigating Potential Causes of Idiopathic Chronic Diarrhea. S.T. Westreich, A. Ardeshir, M.E. Kable, I. Korf, D.G. Lemay, *University of California, Davis and USDA ARS Western Human Nutrition Research Center* **(940.7)**

3:30 Bacterial and Fungal Microbiota Changes Distinguish *C. difficile* Infection from Other Forms of Diarrhea: Results of a Prospective Inpatient Study. J.N. Hackman, W. Sangster, J.P. Hegarty, K.M. Schieffer, J.R. Wright, D.R. Toole, R. Drucker, D.B. Stewart Sr., R. Lamendella, *Juniata College, The Pennsylvania State University, Wright Labs, LLC* **(940.8)**

3:45 Probiotics Alter Avian Serum Profile to Stimulate Energy Consumption and Change of Gene Expression in Immune Cells. A. Ballou, R. Ali, M. Koci, *NC State University* **(940.11)**

411 Beyond the Code: Chemistry of Nucleotide and Amino Acid Modifications

SPOTLIGHT SESSION #cellsignal

2:30 PM – 4:00 PM CONVENTION CENTER,W184A

CHAIR: L. Saleh

2:30 Novel Thymidine Hypermodifications in Viruses Encoding a 5-Hydroxymethyl-5′-Deoxyuridine DNA Kinase. P.R. Weigele, S. Müller, Y. Lee, S. Walsh, C. Guan, N. Dai, I. Correa, *New England Biolabs* **(606.6)**

2:45 A Shared Structural Recognition Element in mRNA Substrates of the tRNA Modifying Enzyme Pseudouridine Synthase I. T.M. Carlile, T.A. Bell, M.F. Rojas-Duran, B. Zinshteyn, H. Shin, C. Mason, W.V. Gilbert, *MIT* **(595.3)**

3:00 *In Vitro* Development of Synthetic Chromatin Proteins That Function in Live Cells. K.A. Haynes, S. Tekel, D.A. Vargas, *Arizona State University* **(922.8)**

3:15 Deciphering the Logic of Natural Product Biosynthesis. B. Li, *University of North Carolina at Chapel Hill* **(607.9)**

3:30 New Roles for Dithiolopyrrolones in Disrupting Bacterial Metal Homeostasis and Inhibiting Metalloenzymes. A.N. Chan, A.L. Shiver, W.J. Wever, S.Z. Razvi, M.F. Traxler, *University of North Carolina at Chapel Hill, University of California, San Francisco, University of North Carolina at Chapel Hill, Eshelman School of Pharmacy, Duke University, University of California, Berkeley* **(766.15)**

3:45 YTHDC2 Regulates Spermatogenesis Through Promoting the Translation of N^6-Methyladenosine-Modified RNA. P.J. Hsu, Y. Zhu, H. Ma, Y. Cui, X. Shi, G. Luo, Z. Lu, H. Shi, Q. Dai, M. Clark, B. Shen, C. He, *The University of Chicago, State Key Laboratory of Reproductive Medicine, Nanjing Medical University, People's Republic of China* **(595.10)**

412 Molecular Mechanisms of Regulation in Proteolysis

SPOTLIGHT SESSION #proteins

2:30 PM – 4:00 PM CONVENTION CENTER,W184BC

CHAIR: E. S. Radisky

2:30 412.1 Substrate Conformational Dynamics in Proteolysis. E.S. Radisky, *Mayo Clinic Cancer Ctr*

2:45 Phosphorylation Regulates Apoptotic Caspase Function Through Diverse Molecular Mechanisms. J.A. Hardy, B.P. Serrano, S.J. Eron, *University of Massachusetts* **(602.3)**

3:00 Proteasome Activation via a Functional Switch of the Rpt6 C-Terminal Tail Following Chaperone-Dependent Assembly. S. Park, F. Li, V. Sokolova, *University of Colorado Boulder* **(917.4)**

3:15 Structure of hRpn13 at the Proteasome. X. Lu, F. Liu, U. Nowicka, V. Sridharan, M. Dyba, S.G. Tarasov, K.J. Walters, *Center for Cancer Research, National Cancer Institute* **(603.5)**

3:30 The Intrinsically Disordered Membrane Enzymes Selenoprotein S and Selenoprotein K. S. Rozovsky, J. Liu, Z. Zhang, *University of Delaware* **(773.1)**

3:45 The Cellular Demand for Protein Synthesis Influences the Ribosome Maintenance Program *in Vivo*. J.C. Price, *Brigham Young University* **(759.4)**

413 RNA: Synthesis, Regulation, and Processing

SPOTLIGHT SESSION #RNA

2:30 PM – 4:00 PM CONVENTION CENTER,W185A

CHAIR: C. Kaplan

2:30 413.1 Mechanism and Regulation of RNA Polymerase II. C.D. Kaplan, *Texas A&M*

2:45 Inhibiting Pathways Involved in B-Cell Development Enhances Sensitivity of B-Cell Acute Lymphoblastic Leukemia to Glucocorticoids. M.A. Pufall, K. Kruth, M.A. Fang, D. Shelton, O. Abu-Halawa, S.K. Tasian, M. Kampmann, *University of Iowa, Bio-Rad, Coe College, Children's Hospital of Philadelphia, University of California San Francisco* **(756.20)**

3:00 Regulation of RNA Polymerase Translocation by the RNA and DNA Hybridization at the Upstream Edge of the Transcription Bubble. M. Kireeva, C. Trang, G. Matevosyan, L. Lubkowska, M. Kashlev, *NCI* **(597.3)**

3:15 Activation of Transcription-Coupled 5′-RNA Capping by TFIIH. M. Noe-Gonzalez, J. Conaway, R. Conaway, *Stowers Institute and Kansas University Medical Center* **(907.1)**

3:30 The Role of the Essential Splicing Factor Prp2 in Ribosome Biogenesis. S. Edwards, A. Hossain, T. Johnson, *University of California and Los Angeles* **(596.13)**

3:45 Nonstop Decay in *C. elegans*: Examination of a Possible Role for Small Noncoding RNAs. E.M. Youngman, *Villanova University* **(757.21)**

414 Therapeutics: Targets and Design

SPOTLIGHT SESSION #chembio

2:30 PM – 4:00 PM CONVENTION CENTER, W185BC

CHAIR: K. Dalby

2:30 Mechanism and in Vivo Activity of a Covalent Inhibitor of ERK Docking. K.N. Dalby, E.V. Anslyn, D. Zamora-Olivares, T. Kaoud, *UT Austin* **(608.13)**

2:45 Elucidation of the Cell Death Pathways Induced by Aqueous-Stable Titanium(IV) Compounds as Potential Anticancer Agents. Y. Delgado, A. Vázquez, M. Kowaleff, M. Saxena, Z. Torres, A. Tinoco, *University of Puerto Rico Rio Piedras Campus and City University of New York* **(609.12)**

3:00 *In Vivo* Drug Discovery for Progressive Supranuclear Palsy Using a Novel Zebrafish Model. E.A. Burton, Q. Bai, *University of Pittsburgh* **(609.13)**

3:15 Insight Into the Mechanism and Structural Basis for Autoinhibition of PTEN by Phosphorylation of Its C-Terminal Tail. D.R. Dempsey, Z. Chen, S. Thomas, D. Hayward, D. Bolduc, P. Cole, *Johns Hopkins University* **(771.1)**

3:30 Trehalose-6-Phosphate Phosphatase Structure and Inhibitor Design. C. Harvey, C. Liu, D. Globisch, K. Janda, D. Dunaway-Mariano, K. Allen, *Boston University, University of New Mexico and The Scripps Research Institute* **(923.5)**

3:45 Carbohydrate-Linked Cisplatin Analogue: Reactivity Studies with RNA and DNA. S.D. Thalalla Gamage, N. Muthunayake, A. Sonousi, D. Crich, C. Chow, *Wayne State University* **(608.8)**

415 The Integration of Metabolism and Epigenetics

SPOTLIGHT SESSION #metabolism

2:30 PM – 4:00 PM CONVENTION CENTER, W186ABC

CHAIR: M. Hirschey

2:30 **415.1** Epigenetic Control of Gene Expression by Lipid Metabolism. M. Hirschey, *Duke University*

2:45 Regulation of Histone Methylation via Methionine Metabolism. S.A. Haws, J.M. Denu, *University of Wisconsin-Madison, Wisconsin Institute for Discovery and University of Wisconsin-Madison School of Medicine and Public Health* **(755.9)**

3:00 Metabolic Regulation of Gene Expression by Histone Lysine β-Hydroxybutyrylation. D. Zhang, Z. Xie, D. Chung, Z. Tang, H. Huang, L. Dai, S. Qi, J. Li, G. Colak, Y. Chen, C. Peng, H. Ruan, D. Wang, L.M. Jensen, O. Kwon, S. Lee, S.D. Pletcher, M. Tan, D.B. Lombard, K.P. White, H. Zhao, J. Li, R.G. Roeder, X. Yang, Y. Zhao, *Medical University of South Carolina, Laboratory of Biochemistry and Molecular Biology, The Rockefeller University, State Key Laboratory of Drug Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, People's Republic of China, University of Minnesota Twin Cities, Yale University School of Medicine, University of Michigan, Kyungpook National University, Republic of Korea, Yale University and Yale School of Medicine* **(755.2)**

3:15 Hepatic Fat Accumulation Regulates Carnitine Palmitoyltransferase 1 (Cpt1a) Expression Through Coordinated Epigenetic Mechanisms. L. Moody, P.M. Jung, A. Kriska, H. Chen, Y. Pan, *University of Illinois Urbana Champaign* **(626.1)**

3:30 Obesity-Mediated Regulation of the Cardiac Acetylome. S.S. Romanick, A. Hostler, K. Schlauch, D. Quilici, Y. Feng, B. Ferguson, *University of Nevada Reno* **(602.14)**

3:45 Effects of Acute Aerobic Exercise on Whole Genome Nucleosome Maps and Gene Expression in Skeletal Muscle of Lean vs. Overweight/Obese Men. P.M. Devarshi, A.D. Jones, W.W. Campbell, E.M. Taylor, T.M. Henagan, *Purdue University* **(943.3)**

416 Intrinsic Disorder and Recognition

SPOTLIGHT SESSION #proteins

2:30 PM – 4:00 PM CONVENTION CENTER,W187A

CHAIR: B. Hill

2:30 Multidimensional Chemical Control of CRISPR-Cas9. C.L. Moore, B. Maji, A. Choudhary, M. Shoulders, *MIT, Broad Institute and Harvard Medical School* **(909.5)**

2:45 BECN Homologs and ATG14 Form a Metastable Coiled-Coil to Mediate Autophagy. S. Sinha, M. Su, Y. Li, B. Levine, C. Colbert, *North Dakota State University, Howard Hughes Medical Research Institute and University of Texas Southwestern Medical Center* **(760.24)**

3:00 Fis1 Activity in Pre- and Post-Assembly of the Yeast Mitochondrial Fission Machinery. M.C. Harwig, R.B. Hill, *Medical College of Wisconsin* **(634.8)**

3:15 The Conformation of Apolipoprotein E4 on Discoidal and Spherical High Density Lipoproteins Using Chemical Crosslinking and Fluorescence Spectroscopy. N. Bala, K. Taiwo, V. Narayanaswami, *California State University, Long Beach* **(761.26)**

3:30 Insights Into HuR RRM1-2 Tandem Domains Self-Association and mRNA Recognition. A.S. Pinheiro, C. Lixa, K.A. Jendiroba, L.T. Lima, M.T. de Magalhães, F.C. Almeida, *Federal University of Rio de Janeiro, Brazil and Federal University of Minas Gerais, Brazil* **(598.5**

3:45 Toxic PR Poly-Dipeptides Encoded by the C9orf72 Repeat Expansion Target LC Domain Polymers. Y. Lin, *University of Texas Southwestern Medical Center* **(760.4)**

417 Nutrition Impact On Bacteria and Host Health: From Basic Science to Global View

SEBM SYMPOSIUM #microbes

3:00 PM – 5:00 PM CONVENTION CENTER,W184D

CHAIR: C. Allred

Guest Society: Society for Experimental Biology and Medicine

3:00 Chair's Introduction.

3:10 Microbial Tryptophan Metabolites and Gut Health. A. Jayaraman, *Texas A&M University*

3:35 Host-Microbe Interactions in the Human Infant: Impact of Nutrition. S. Donovan, *University of Illinois*

4:00 Legumes and gut health. M. Manary, *Washington University*

4:25 Diet Drives Colon Cancer Risk by its Effect on the Microbiota. S. O'Keefe, *University of Pittsburg Medical Center*

4:50 Discussion.

418 Advances in Glycobiology

SPOTLIGHT SESSION #glyco

4:15 PM – 5:45 PM CONVENTION CENTER,W183C

CHAIR: K. Ribbeck

4:15 418.1 Probing Microbial Interactions with the Mucus Barrier. K. Ribbeck, *MIT*

4:30 *Bifidobacterium dentium* Regulates Intestinal Mucus Production and Glycosylation. M.A. Engevik, B.K. Luk, C. Visuthranukul, J. Versalovic, *Baylor College of Medicine, Texas Children's Hospital and King Chulalongkorn Memorial Hospital, Thailand* **(954.5)**

Tuesday

4:45 Microbiota-Sensing O-GlcNAc Signaling in Intestinal and Metabolic Homeostasis. H. Ruan, M. Zhao, *University of Minnesota* **(784.4)**

5:00 Toward Facile Automated Glycan Synthesis: Current Progress and Remaining Challenges. N.L. Pohl, *Indiana University* **(784.10)**

5:15 Glycolipid Storage and Phenotypes in a New Rat Model of Fabry Disease. J.J. Miller, K. Aoki, C.A. Murphy, C.L. Stucky, I.S. Kassem, M. Tiemeyer, N.M. Dahms, *Medical College of Wisconsin and University of Georgia* **(953.2)**

5:30 Imaging Specific Glycan Epitopes on Cells Using Glycosyltransferases via Click Chemistry. Z.L. Wu, A. Person, M. Anderson, B. Burroughs, R. Sackstein, T. Geders, *Bio-techne, Brigham & Women's Hospital and Harvard Medical School* **(784.7)**

419 Chemical Probes and Metabolite Biosensors

SPOTLIGHT SESSION #metabolism

4:15 PM – 5:45 PM CONVENTION CENTER, W184A

CHAIR: M. Hirschey

4:15 Designing Highly Specific Protein-Based Small Molecule Biosensors. S. Raman, *University of Wisconsin-Madison* **(765.3)**

4:30 Development of Algorithmic Techniques for Designing Electrochemical DNA Biosensors. A.J. Bonham, A.J. Bulow, *Metropolitan State University of Denver* **(767.2)**

4:45 Development of Red Fluorescent Protein pH Sensors. M. Rajendran, E. Haynes, B. Claywell, U. Scales, C. Henning, M. Tantama, *Purdue University* **(767.3)**

5:00 Sensitive and Specific Detection of Ligands Using Engineered Riboswitches. J.P. Laney, D.P. Morse, *United States Naval Academy* **(907.4)**

5:15 Bead-Based Enzymatic Assay On-A-Chip. S.J. Karnik, S. Cahoon, A. Bhushan, *Illinois Institute of Technology* **(924.5)**

5:30 Lanthanide-Based FRET Biosensors for Time-Gated Imaging and Detection of Protein-Protein Interactions in Live Mammalian Cells. T. Chen, H. Pham, L. Miller, *UIC* **(767.6)**

420 Cancer Signaling and Therapeutics

SPOTLIGHT SESSION #cellsignal

4:15 PM – 5:45 PM CONVENTION CENTER, W184BC

CHAIR: K. Wood

4:15 Leveraging Synthetic Lethality to Target Convergent Therapeutic Resistance. K.C. Wood, *Duke University* **(775.4)**

4:30 CEBPD Is an Early Endoplasmic Reticulum Stress Response Gene Implicated in Breast Cancer Cell Survival. N. Sheshadri, S. Sharan, E. Sterneck, *National Cancer Institute* **(758.2)**

4:45 Manipulating the Bone Marrow Microenvironment to Prevent Survival of AML Cells. R.M. Sterner, K.N. Kremer, A. Dudakovic, J.J. Westendorf, A.J. van Wijnen, K.E. Hedin, *Mayo Clinic* **(775.3)**

5:00 Deconstructing the Peptide Specificity of TCR Recognition. T.P. Riley, J. Mendoza, L. Hellman, K. Garcia, B. Baker, *University of Notre Dame and Stanford School of Medicine* **(760.1)**

5:15 Mortalin Modulates MEK/ERK Activity by Regulating the Physical Interaction Between MEK1/2 and Protein Phosphatase 1 Alpha. P. Wu, *Medical College of Wisconsin* **(775.1)**

5:30 At the Crossroads Between TYR and SER/THR Signaling: A New Paradigm in the Regulation of PP2A by SRC Kinase. E. Sontag, J. Sontag, R.J. Gomez, A. Hoffman, G. Taleski, M.D. Mazalouskas, S.K. Hanks, I. Frohner, E. Ogris, B.E. Wadzinski, *University of Newcastle, Australia, Vanderbilt University School of Medicine and Medical University of Vienna, Austria* **(771.2)**

421 Chromatin Structure and Epigenetic Regulation

SPOTLIGHT SESSION #chromatin

4:15 PM – 5:45 PM CONVENTION CENTER,W185A

CHAIR: P. Grant

4:15 421.1 The Replication Kinase Cdc7 Marks Histones to Regulate Biosynthesis Genes. P. Grant, *University of Virginia School of Medicine*

4:30 Chromatin Accessibility of the Dosage Compensated *Drosophila* Male X-Chromosome Is Established by a Context-Specific Role for the CLAMP Zinc Finger Protein. E. Larschan, J. Urban, G. Kuzu, *Brown University* **(593.10)**

4:45 Epigenetic Manipulation of Inactive X Chromosome for Rett Syndrome Therapeutics. S. Bhatnagar, *University of Virginia School of Medicine* **(593.4)**

5:00 Architecture of the Nucleosome Remodeling and Deacetylase (NuRD) Complex. J.K. Low, A.P. Silva, M. Sharifitabar, M. Torrado, J. Schmidberger, S.R. Webb, H. Saathoff, B.L. Parker, B. Paudel, A. van Oijen, M.J. Landsberg, N.E. Shepherd, J.P. Mackay, *The University of Sydney, Australia, The University of Wollongong, Australia and The University of Queensland, Australia* **(594.3)**

5:15 Role of Chromatin Remodeling and Spacing Factor 1 in Histone H2A Ubiquitination Mediated Gene Silencing. H. Wang, Z. Zhang, A.E. Jones, M.B. Renfrow, C. Liu, W. An, J. Luo, W. Wu, Y. Kang, Y. Tong, *University of Alabama at Birmingham, Nanyang Technological University, Singapore, University of Southern California, Chinese Academy of Sciences, People's Republic of China, and University of Toronto, Canada* **(593.6)**

5:30 Epigenetic Regulation Through UHRF Proteins. S.B. Rothbart, R.M. Vaughan, E.M. Cornett, B.M. Dickson, *Van Andel Research Institute* **(595.4)**

422 Lipid Transport and Processing

SPOTLIGHT SESSION #lipids

4:15 PM – 5:45 PM CONVENTION CENTER,W186ABC

CHAIR: A. Radhakrishnan

4:15 Probing the Lipid Composition at the Site of Influenza Virus Assembly and Budding with High-Resolution SIMS. M.L. Kraft, A.N. Yeager, P.K. Weber, J. Zimmerberg, *University of Illinois at Urbana-Champaign, Lawrence Livermore National Laboratory, National Institute of Child Health and Human Development, National Institutes of Health and Eunice Kennedy Shriver National Institute of Child Health and Human Development* **(629.20)**

4:30 Macrophage Catabolism of Aggregated Lipoproteins Using a Novel Extracellular Compartment Regulates Lipid Accumulation During Atherosclerosis. R.K. Singh, A.S. Haka, V.C. Barbosa-Lorenzi, A. Asmal, F. Lund, Y. Xiong, H.F. Chin, I. Grosheva, T. Hla, F.R. Maxfield, *Weill Cornell Medical College* **(782.17)**

4:45 Macrophage Cholesterol Efflux and Atherosclerosis in Psoriasis: A Role for microRNA-33. D. Karunakaran, G. Dwevidi, K. Rayner, *University of Ottawa Heart Institute, Canada* **(947.7)**

5:00 Identification of NPC1 as the Target of U18666A, an Inhibitor of Lysosomal Cholesterol Export and Ebola Infection. F. Lu, M. Brown, J. Goldstein, *University of Texas Southwestern Medical Center* **(630.17)**

5:15 Ceramide-1-Phosphate: Characterizing a Fluorescent Lipid and Discovering New Binding Proteins. C.M. Shirey, R.V. Stahelin, *University of Notre Dame and Indiana University School of Medicine-South Bend* **(629.24)**

5:30 A Novel Hemolysin with Anti-Cancer and Anti-Fungal Properties Binds to Serum Glycoproteins and Cholesterol. C. Welch, N. Fan, R. Brown, M. Talaga, A. Fueri, K. Driscoll, K. Lawry, A. Vizurraga, R. Rekhi, P. Bandyopadhyay, T. Dam, *Michigan Technological University* **(953.4)**

423 Molecular Machines of Protein Synthesis and Degradation

SPOTLIGHT SESSION #proteins

4:15 PM – 5:45 PM CONVENTION CENTER, W187A

CHAIR: K. Walters

4:15 ALS and Ubiquilin-2: Effects of ALS Mutations on Ubiquilin-2 Structure and Function C. Castaneda, T. Dao, *Syracuse University* **(914.11)**

4:30 Repeat Expanded Ataxin-1 mRNA and Protein Is Co-Regulated at PML Bodies. D. Fanslow, A. Cogswell, C. Strojny, A. Garza-Gongora, E. Smith, S. Kosak, *Northwestern University* **(915.7)**

4:45 Inter-Domain Interactions in Nascent Polypeptides Interfere with Productive Protein Folding. K. Liu, K. Maciuba, C. Kaiser, *Johns Hopkins University* **(604.10)**

5:00 A Neuronal-Specific Surface-Exposed Membrane Proteasome Complex Modulates Neuronal Signaling Through Extracellular Signaling Peptides. K.V. Ramachandran, S.S. Margolis, *Johns Hopkins School of Medicine* **(915.4)**

5:15 Nitrogen Starvation and Rapamycin Both Induce Autophagic Degradation of Proteasome Complexes. J. Roelofs, K.A. Waite, G. Vontz, A. De La Mota-Peynado, *Kansas State University* **(917.6)**

5:30 Multivalent Interactions Between a Ubiquitin Ligase and Its Substrates Mediate Their Recruitment to Liquid Membrane-Less Organelles. T. Mittag, J. Bouchard, E. Martin, J. Otero, S. Marada, S. Ogden, *St. Jude Children's Research Hospital* **(916.3)**

424 Protein and Enzyme Allostery

SPOTLIGHT SESSION #enzymes

4:15 PM – 5:45 PM CONVENTION CENTER, W187B

CHAIR: W. Peti

4:15 Using Dynamics and Structure to Understand Allostery in Signaling Enzymes. W. Peti, *University of Arizona* **(607.2)**

4:30 Allosteric Landscape of a Stress-Inducible Human Hsp70 Molecular Chaperone. W. Meng, E.M. Clerico, N. McArthur, L.M. Gierasch, *University of Massachusetts and Amherst* **(604.14)**

4:45 A Common Mechanism of Proteasome Impairment by Neurodegenerative Disease-Associated Oligomers. T.A. Thibaudeau, R. Anderson, D.M. Smith, *West Virginia University and School of Medicine* **(763.8)**

5:00 Phospholipase A_2: A Unique Paradigm of Allosteric Regulation by Membranes. V. Mouchlis, J. McCammon, E. Dennis, *UC San Diego* **(765.9)**

5:15 Correlation of Fitness Landscapes from Three Orthologous TIM Barrels Originates from Sequence and Structure Constraints. Y.H. Chan, S.V. Venev, K.B. Zeldovich, C.R. Matthews, *UMass Medical School* **(761.27)**

5:30 Allosteric Regulation and Enzymatic Mechanism of YopJ Family of Bacterial Effectors. J. Song, Z. Zhang, K. Ma, L. Gao, W. Ma, *University of California, Riverside* **(765.4)**

425 Lipidic Cubic Phase Crystallography

WORKSHOP #profdev

6:15 PM – 7:45 PM CONVENTION CENTER, W184BC

JBC JOURNAL OF BIOLOGICAL CHEMISTRY LI-COR

CHAIR: A. Kruse, A. Manjlik

Lipidic cubic phase crystallography and related methods have transformed membrane-protein structural biology. They have led us to most of the known structures of G-protein-coupled receptors, as well as structures of many other membrane proteins, enzymes and transporters. This workshop will focus on how to crystallize membrane proteins by the lipidic cubic phase method and will include a live hands-on demonstration of the technique.

426 Publishing in the *JBC* 101: Advice From the Experts

WORKSHOP #profdev

6:15 PM – 7:45 PM CONVENTION CENTER,W185BC

CHAIR: F. P. Guengerich, K. Sakabe

Interested in publishing your research in the *Journal of Biological Chemistry*? Make sure you are presenting your research rigorously, clearly and compellingly! The *JBC* editors discuss important aspects authors need to consider when preparing their manuscripts for submission. Topics to be discussed include clarity of the text, including title and abstract, data presentation, database compliance, and transparency.

427 Principles and Applications of Modern Kinetic and Equilibrium Analysis

WORKSHOP #profdev

6:15 PM – 7:45 PM CONVENTION CENTER,W186ABC

CHAIR: K. Johnson

This workshop will teach attendees how to answer important questions about enzyme mechanisms by designing the right experiments and interpreting them quantitatively. It will present basic foundations and applications of kinetic analysis, then cover topics ranging from chemical kinetics and enzymology to pharmacokinetics and cell biology. It will demonstrate the use of KinTek computer simulation software to fit multiple data sets simultaneously, including kinetic and equilibrium measurements. Attendees will learn how to perform a wide range of experiments and interpret them rigorously, without simplifying approximations and errors inherent in fitting data using equations. The workshop will be taught by Kenneth Johnson at The University of Texas and founder of KinTek Corporation, a leader in precision stepped-flow and quench-flow instruments for rapid transient reaction kinetics.

428 ASBMB Women Scientists Mentoring and Networking Event

SPECIAL EVENT #profdev

7:30 PM – 9:00 PM HYATT REGENCY, GRANT PARK B

Join us for lively conversation focusing on the importance of mentors and sponsors at the various stages of career development and factors that affect the success of mentoring relationships. ASBMB members and biochemistry attendees welcome.

WEDNESDAY APRIL 26

523 ASBMB-Merck Award

AWARD LECTURE #bigtalks

8:45 AM – 9:15 AM CONVENTION CENTER, W183AB

8:45 Introduction.

8:50 523.1 Proteostasis Function and Disfunction: The Delicate Art of Maintaining a Healthy Proteome. J. Frydman, *Stanford University*

524 Delano Award for Computational Biosciences

AWARD LECTURE #bigtalks

9:15 AM – 9:45 AM CONVENTION CENTER, W183AB

9:15 Introduction.

9:20 524.1 Structure-Based Discovery of New Chemotypes Conferring New Biology. B. Shoichet, *University of California, San Francisco*

525 Low Complexity Domain Proteins and the Making of Germ Cells

SYMPOSIUM #proteins

10:00 AM – 12:00 PM CONVENTION CENTER, W183C

10:00 525.1 RNA Granule Organization. R. Lehmann, T. Trcek, M. Grosch, H. Shroff, T. Lionnet, *Skirball Institute, NYU School of Medicine, HHMI, National Institute of Biomedical Imaging and Bioengineering, Janelia Research Campus and Howard Hughes Medical Institute*

10:30 525.2 Organelles Without Membranes: Intrinsically Disordered Proteins Bring Order to the Cytoplasm. G. Seydoux, J. Smith, D. Calidas, H. Schmidt, D. Rasoloson, *Johns Hopkins University School of Medicine and HHMI*

11:00 525.3 A Liquid Crystalline Interface Between Chromosomes Regulates Meiotic Recombination. A.F. Dernburg, S. Köhler, L. Zhang, W.T. Stauffer, J.D. Robinson, O. Rog, *University of California, Berkeley, HHMI and University of Utah*

11:30 525.4 Amyloid-Mediated Translational Control Is Required for Meiosis. L.E. Berchowitz, M.R. Walker, G.L. Kabachinski, T.U. Schwartz, A. Amon, *Massachusetts Institute of Technology, HHMI*

526 Molecular Quality Control

SYMPOSIUM #cellbio

10:00 AM – 12:05 PM CONVENTION CENTER, W184BC

CHAIR: D. Ron

10:00 526.1 Regulation of Translational Fidelity and Neurodegeneration. S.L. Ackerman, *UCSD and HHMI*

10:25 526.2 A Versatile Chaperone Network Promoting the Aggregation and Disaggregation of Misfolded Proteins. B. Bukau, N. Nillegoda, A. Wentink, S. Ungelenk, C. Ho, A. Mogk, *Zentrum für Molekulare Biologie der Universität Heidelberg, Germany*

10:50 526.3 Structures and Functions of the Ribosome Quality Control Complex or RQC. A. Frost, *University of California, San Francisco*

11:15 526.4 RNA Decay and Quality Control by the Eukaryotic RNA Exosome. C.D. Lima, *Memorial Sloan Kettering Cancer Center/HHMI*

11:40 526.5 Tuning an Endoplasmic Reticulum Chaperone to the Cell's Needs. D. Ron, *University of Cambridge, United Kingdom*

527 New Insights in Regulated Lipid Metabolism

SYMPOSIUM #lipids

10:00 AM – 12:00 PM CONVENTION CENTER, W185BC

CHAIR: R. Zechner

10:00 527.1 The Role of Intracellular Lipolysis in Thermogenesis and Metabolic Disease. R. Zechner, M. Schweiger, R. Breinbauer, R. Zimmermann, *University of Graz, Austria and Graz University of Technology, Austria*

10:30 527.2 New Insights Into Intravascular Lipolysis and New Causes of Hypertriglyceridemia. S.G. Young, A. Beigneux, L. Fong, M. Ploug, *UCLA and Finsen Laboratory, Denmark*

11:00 527.3 Novel Mechanisms of Regulation of Bioactive Sphingolipids in Cancer Biology. L.M. Obeid, C. Senkal, M. Pulkoski-Gross, *Stony Brook University School of Medicine and Stony Brook University*

11:30 527.4 Geranylgeranyl-Regulated, ER-to-Golgi Transport of UBIAD1: Implications for Cholesterol Homeostasis and Schnyder Corneal Dystrophy. R.A. DeBose-Boyd, *UT Southwestern Medical Center*

528 Redox Signaling and the Metabolome

SYMPOSIUM #metabolism

10:00 AM – 12:00 PM CONVENTION CENTER, W186ABC

CHAIR: R. Banerjee

10:00 528.1 Mechanism and Control in Radical SAM Enzymes. J.B. Broderick, *Montana State University*

10:30 528.2 Biocatalyst Discovery from the Secondary Metabolome. D.H. Sherman, S. Li, A.N. Lowell, S.A. Newmister, F. Yu, R.M. Williams, *Life Sciences Institute, University of Michigan, Colorado State University*

11:00 528.3 Redox Control of the Metabolome and the Aging Process. V. Gladyshev, *Harvard Medical School and Brigham & Women's Hospital*

11:30 528.4 Signaling Through Hydrogen Sulfide. R. Banerjee, *University of Michigan, Medical School*

529 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

12:30 PM – 1:00 PM CONVENTION CENTER, SKYLINE BALLROOM

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

A. Amon, *MIT, HHMI;* R. DeBose-Boyd, *UT Southwestern Medical Center at Dallas;* A. Dernburg, *UC, Berkeley;* R. Lehmann, *HHMI, NYC;* G. Seydoux, *Johns Hopkins University School of Medicine; HHM;*, B. Shoichet, *UCSF, Delano Award for Computational Sciences;* R. Zechner, *Institute of Molecular Biosciences, Karl Franzens Universität Graz*

530 ASBMB Meet the Speakers

SPECIAL EVENT #profdev

1:30 PM – 2:00 PM CONVENTION CENTER, SKYLINE BALLROOM

Join us in the exhibit hall, across from ASBMB booth #1214. Meet up with the morning presenters for continued scientific discussion and networking in an informal environment.

AS OF PRESS TIME, CONFIRMED SPEAKERS INCLUDE:

S. Ackerman, *UCSD, HHMI;* R. Banerjee, *University of Michigan Medical School;* B. Bukau, *Zentrum für Molekulare Biologie der Universität Heidelberg;* A. Frost, *UCSF;* C. Lima, *Memorial Sloan Kettering Cancer Center;* D. Ron, *University of Cambridge;* D. Sherman, *University of Michigan*

EB2017 Career Resource Center (CRC) Events

Resume Critiquing available by appointment, April 22 – 26		
Saturday, April 22		REGISTRATION AREA
Sunday, April 23	9:00 AM – 5:00 PM	EXHIBIT HALL, F2
Monday, April 24	9:00 AM – 5:00 PM	EXHIBIT HALL, F2
Tuesday, April 25	9:00 AM – 4:00 PM	EXHIBIT HALL, F2
Wednesday, April 26	9:00 AM – 12:00 PM	SKYLINE BALL ROOM W375A

The FASEB Office of MARC and Professional Development Programs in association with the Experimental Biology 2017 Management Committee will sponsor career development seminars and NIH Grant Seminar Workshops in the Career Resource Center located in Hall F2 (Rooms CRC 1-4). There is no fee or pre-registration associated with the workshops and seminars.

Check the EB2017 app or visit the Career Resource Center onsite for the most current events schedule.

Workshops, located in the Exhibit Hall, F2

SUNDAY APRIL 23

9:00 AM – 10:00 AM

CRC-1 **Networking: Optimizing Your Time at EB2017**

PRESENTER: J. Tringali

You surely have heard that *networking* is a key component of the successful job search. The term itself often conjures up negative thoughts and reactions to the uninitiated, sometimes to the point of paralysis. Professional conferences (such as EB 2017) provide endless networking opportunities. If, however, your perception of networking means tackling someone at the coffee station while thrusting your CV in his/her hands, you may want to stop in on this session. The practice of networking has become so much easier with the advent of the internet. We will discuss what you hope to get out of your presence at the meeting, how to set objectives beforehand, and how to meet those objectives once you arrive (while minimizing anxiety).

9:00 AM – 10:00 AM

CRC-4 **Get Up With Something on Your Mind**

PRESENTER: H. Adams

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.

9:30 AM – 10:30 AM

CRC-2 **How to Choose Your Ideal Career**

PRESENTER: B. Lindstaedt

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.

10:00 AM – 11:00 AM

CRC-3 **Negotiation Strategies for Scientists**

PRESENTER: D. Behrens

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.

10:30 AM – 11:30 AM

CRC-1 **Understanding Search Committees & Finding Job Announcements**

PRESENTER: A. Green

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.

11:00 AM - 12:00 PM

CRC-2 **But I have no Skills! Exploring Myths and Exploring Career Options for PhDs**

PRESENTER: J. Lombardo

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.

11:00 AM – 12:00 PM

CRC-4 **Making Mistakes When Speaking: How to Handle Them**

PRESENTER: J. Blumenthal

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.

1:00 PM – 2:00 PM

CRC-1 **Job Hunting in Biotech Part 1 of 3: Finding & Applying for Scientist Positions**

PRESENTER: B. Lindstaedt

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. Each seminar can be taken separately but together they provide comprehensive information about the industry job search process.

After this seminar you will understand how to conduct the four job hunting techniques that comprise a comprehensive job search in the biotech industry.

1:00 PM – 2:00 PM

CRC-3 **Creating Effective CV's, Cover Letters, Research & Teaching Statements**

PRESENTER: A. Green

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.

1:00 PM – 2:00 PM

CRC-4 **Networking With Strangers Is Required for Your Future**

PRESENTER: J. Blumenthal

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.

EB2017 Career Resource Center (CRC) Events SUNDAY continued

1:00 PM – 2:30 PM

CRC-2 **Handshakes, Eye Contact, Small Talk: Networking Successfully as a Student or Postdoc**

PRESENTER: N. Saul

In this interactive session, we'll learn how to initiate, organize and maintain your network to promote your academic and professional success. You will practice starting conversations about your professional interests and goals, and we will discuss professional etiquette and strategies to network. You will also sketch your own networking plan for a conference.

2:30 PM – 3:30 PM

CRC-4 **Networking: A Required Life Skill**

PRESENTER: H. Adams

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. Key topics to be covered include: 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.

3:00 PM – 4:00 PM

CRC-1 **Job Hunting in Biotech Part 2 of 3: Interviewing for Scientist Positions**

PRESENTER: B. Lindstaedt

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. Each seminar can be taken separately but together they provide comprehensive information about the industry job search process.

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.

3:30 PM – 4:30 PM

CRC-2 **Networking: Optimizing Your Time at EB2017**

PRESENTER: J. Tringali

You surely have heard that networking is a key component of the successful job search. The term itself often conjures up negative thoughts and reactions to the uninitiated, sometimes to the point of paralysis. Professional conferences (such as EB 2016) provide endless networking opportunities. If, however, your perception of networking means tackling someone at the coffee station while thrusting your CV in his/her hands, you may want to stop in on this session. The practice of networking has become so much easier with the advent of the internet. We will discuss what you hope to get out of your presence at the meeting, how to set objectives beforehand, and how to meet those objectives once you arrive (while minimizing anxiety).

3:30 PM – 4:30 PM

CRC-3 **Making the Grade: Job Talk/Chalk Talk**

PRESENTER; D. Behrens

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

4:00 PM – 5:00 PM

CRC-4 **Nailing the Job Talk & Interview Prep**

PRESENTER: A. Green

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

MONDAY APRIL 24

9:00 AM – 10:00 AM

CRC-1 **Beyond the Bench: Preparing for Your Career Transition in the Life Sciences**

PRESENTER: J. Tringali

Is there a way to move your skills from the bench to a related career? There is, assuming one is focused and willing to invest some time in making the switch. We will explore different paths to alternative scientific careers.

9:00 AM – 10:00 AM

CRC-4 **Goal Setting, Prioritizing, Time Management**

PRESENTER: H. Adams

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.

9:00 AM - 10:30AM

CRC-2

NIH (K) Awards

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.

10:00 AM – 11:30 AM

CRC-3

Interviewing While Pregnant: Successful Strategies

PRESENTER: N. Saul

Students/postdocs who are job/postdoc seeking pregnant can find it difficult to know when and how to disclose their pregnancy during a hiring process. The decision of how and when to discuss a pregnancy a personal one; based on a candidate's personal values, how visible their pregnancy is, their tolerance for risk, their awareness of how family friendly their potential employer is, and their level of confidence about their ability to negotiate this situation skillfully.

In this interactive session, we'll give you the information and framework to determine the best time to disclose your pregnancy during the hiring process, as well as the language to discuss your pregnancy professionally. So whether you or someone you know is presently pregnant, you are thinking about expanding your family in the future, or plan to lead a team in the future and would like to know how to manage this skillfully, this session is for you!

By the end of this session, you will be able to:

- Describe factors that make it challenging to know when and how to discuss your pregnancy during a hiring process
- Explain the protections and limits of The Pregnancy Discrimination Act (PDA)/ Title VII of the Civil Rights Act of 1964
- Distinguish the five stages of a hiring process, and formulate a plan about what stage to discuss your pregnancy during the hiring process
- Practice the professionally appropriate language to disclose your pregnancy to an employer

10:30 AM – 11:30 AM

CRC-1

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

PRESENTER: B. Lindstaedt

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? Each seminar can be taken separately but together they provide comprehensive information about the industry job search process.

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.

10:30 AM – 11:30 AM

CRC-4

Identifying Your Options using ScienceCareers.org, Linked In & More

PRESENTER: A. Green

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.

11:00 AM – 12:00 PM

CRC-2

Developing Your Core Message/ "Elevator Pitch"

PRESENTER: J. Lombardo

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 will enhance your professional presence and stature, boost self-confidence, and reduce anxiety. It helps you establish your identity as a professional scientist, and it helps open doors for connection, collaboration, and employment. This seminar will provide guidance in a safe place to develop and practice your statement.

1:00 PM – 2:00 PM

CRC-1

Job Hunting in Biotech Part 1 of 3: Finding & Applying for Scientist Positions

PRESENTER: B. Lindstaedt

See Sunday's listing for description.

EB2017 Career Resource Center (CRC) Events MONDAY continued

1:00 PM – 2:00 PM

CRC-3 **Successful Behaviors for Winning an Interview**

PRESENTER: J. Blumenthal

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.

1:00 PM – 2:00 PM

CRC-4 **Building Your Skills, Networking& Informational Interviews**

PRESENTER: A. Green

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.

1:00 PM - 2:30 PM

CRC-2 **NIH Fellowship (F) Awards**

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.

2:30 PM – 3:30 PM

CRC-1 **Job Search in Academia & Industry: Timelines and Effective Strategies**

PRESENTER: D. Behrens

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.

2:30 PM – 3:30 PM

CRC-3 **Ten Tough Industrial Interview Questions (and Ten Pretty Good Responses)**

PRESENTER: J. Tringali

You've been invited to interview with that drug development company that you've always wanted to work for. You've soaked up the position description, and are confident in your ability to do the job, as well as answer any/all technical questions during the interview process. The day is yours... until that first question catches you by surprise and your confidence begins to wilt. Be prepared for those non-technical questions that you will almost certainly hear at some point, know why they are asked, and learn what good (if not great) responses to those questions might be in this workshop.

2:30 PM – 3:30 PM

CRC-4 **Making the Case for Graduate School**

PRESENTER: H. Adams

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.

3:00 PM – 4:00 PM

CRC-2 **Ten Ways to Get Lucky in the Job Search**

PRESENTERS: P. Clifford and J. Lombardo

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.

4:00 PM – 5:00 PM

CRC-1 **Job Hunting in Biotech Part 2 of 3: Interviewing for Scientist Positions**

PRESENTER: B. Lindstaedt

See Sunday's listing for description.

4:00 PM – 5:00 PM

CRC-3 **Making the Grade: Job Talk/Chalk Talk**

PRESENTER: D. Behrens

See Sunday's listing for description.

4:00 PM – 5:00 PM

CRC-4 **Attitude & Behaviors: How are you Perceived?**

PRESENTER: J. Blumenthal

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.

TUESDAY APRIL 25

9:00 AM – 10:00 AM

CRC-1 **Attitudes in Academic and Employment Achievement**

PRESENTERS: J. Blumenthal and J. Lombardo

Attitude is one of the strongest non-verbal determinants of academic and employment achievement especially in competitive settings, yet it is rarely addressed as an important behavior for applicants to focus on. Attitudes are complex circular designs since each established attitude creates a perception, which establishes an attitude, and the cycle continues. Attitude and dyadic interactions are known to be complex. Add group and panel interviews to this, and attitudes of the applicant can catapult the individual to a successful outcome, or discontinue the applicant's competition early in the process. The authors will present a behavioral analysis of an attitude, teach how to modify or change attitudes for success and effectiveness, and present cases they experienced pertaining to attitudes in academic and employment competition. Attendees will learn how to generalize the material to their own social function opportunities that can provide additional benefits to competition in their respective settings. They will learn highly effective attitudes and how to develop them for competitive job search and educational promotion situations for professionals.

9:00 AM – 10:00 AM

CRC-4 **What You Seek is What You Get**

PRESENTER: H. Adams

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.

10:00 AM – 11:00 AM

CRC-3 **Translating Your Credentials on Paper (CV=>Resume) and in Person**

PRESENTER: A. Green

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.

9:00 AM - 10:30 AM

CRC-2 **NIH (K) Awards**

See Monday's listing for description.

10:30 AM – 11:30 AM

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

PRESENTER: B. Lindstaedt.

See Monday's listing for description.

10:30 AM – 11:30 AM

CRC-4 **But I have no Skills! Exploding Myths and Exploring Career Options for PhDs**

PRESENTER: J. Lombardo

See Sunday's listing for description.

1:00 PM – 2:00 PM

CRC-1 **How to Choose Your Ideal Career**

PRESENTER: B. Lindstaedt

See Sunday's listing for description.

1:00 PM – 2:00 PM

CRC-4 **Navigating Doctoral Work Protocols/ Milestones/Requirements**

PRESENTER: H. Adams

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.

1:00 PM - 2:30 PM

CRC-2 **NIH Fellowship (F) Awards**

See Monday's listing for description.

1:00 PM – 2:30 PM

CRC-3 **Talking About Yourself: How to Interview Well**

PRESENTER: N. Saul

In this session, we will help you learn how to interview successfully, by looking at the interview process from employer's perspective. We will discuss the overall hiring process and the all-day interview format, as well as the steps to prepare for an interview, effectively use the different types of interview questions to both present your skills and experience, and assess the employer's needs, and criteria to ultimately determine if the position is a good fit for you.

2:30 PM – 3:00 PM

CRC-4 **Selling Yourself to the Life Sciences Industry**

PRESENTER: J. Tringali

The industrial employer is often looking for a different set of skills, attitudes, and interview responses than those sought by academic or government research institutions. In this workshop, we will explore the who, what and why of the pharmaceutical and biotechnology industries as they pertain to their hiring processes. Discussions will focus on the development and positioning of your marketing message in order to improve the odds of a successful industry job search.

3:00 PM – 4:00 PM

CRC-1 **Global Interview Skills: A Practice Workshop for International Candidates**

PRESENTER: D. Behrens

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.

3:00 PM – 4:00 PM

CRC-2 **The Strategic Postdoc: How to Find & Leverage Your Postdoc Experience**

PRESENTER: A. Green

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.

2017 ASBMB career development opportunities

Webinars

Careers beyond the bench in industry
May 11

Building your C.V. to get "know"ticed
June 14

Interviewing, negotiating and salaries
July – date TBD

No registration fee!

Space is limited. Register at
www.asbmb.org/webinars

Online resources

- Short tutorials on career topics such as informational interviews
- Videos describing the types of careers open to Ph.D.s
- Online course, The Art of Science Communication

www.asbmb.org/careers

Workshops

Interactive Mentoring Activities for Grantsmanship Enhancement
June 22–24 | Washington, D.C.
Assistant professors and postdocs transitioning into independent faculty positions receive feedback on their research proposals and mentoring. **Apply by May 5.**

Save the date: Catalyze Your Career
Sept. 21–22 | Portland, Ore.
Learn about careers open to Ph.D.s; improve your communication skills, application materials and interview skills; network; and plan for your career.

Save the date: Preparing Science Professionals
Sept. 29–30 | Lexington, Ky.
Gain insight into different STEM career paths and take part in interactive training in communication, outreach and professional development.

Save the date: Catalyze Your Career
Oct. 20–21 | Tucson, Ariz.
Learn about careers open to Ph.D.s; improve your communication skills, application materials and interview skills; network; and plan for your career.

More information at
www.asbmb.org/workshops

ASBMB
American Society for Biochemistry and Molecular Biology

ASBMB Posters

SUNDAY
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

Poster manning: times:

ODD BOARD NUMBERS: 12:00 – 1:15 pm EVEN BOARD NUMBERS: 1:15 – 2:30 pm

BOARD NUMBER	SESSION TITLE
B1-B15	Undergraduate Education (ASBMB)
B16-B28	Learning Tools in Molecular Biology and Biochemistry Undergraduate Education
B29-B36	Expanding Undergraduate Research Opportunities
B37-B42	Experimental Biology and Medicine
B43-B52	Genome Dynamics: DNA Replication, Repair and Recombination
B53-B62	DNA Polymerases, Replicases and Replisomes
B63-B79	Chromatin Structure and Gene Expression
B80-B85	Chromatin Structure, Remodeling and Assembly
B97-B114	Epigenetic Modifications of DNA and RNA
B115-B127	RNA: Processing, Transport, and Regulatory Mechanisms
B128-B131	RNA Polymerases
B132-B139	RNA Binding Proteins
B140-B145	RNA Structure, Folding and Dynamics
B146-B159	Mechanisms and Regulation of Protein Synthesis
B160-B173	Protein Interactions and Binding (I)
B174-B188	Protein Modifications
B189-B212	Protein Structure and Biophysics (I)
B213-B233	Protein Folding and Chaperones
B234-B237	Biomolecular Catalysis
B238-B257	Enzyme Mechanisms, Kinetics and Energetics (I)
B258-B266	Structural Dynamics of Enzymes
B267-B280	Chemical Biology, Drug Discovery and Bioanalytical Methods

BOARD NUMBER	SESSION TITLE
B281-B296	Drug Screening and Development
B297-B306	Protein and Peptide Chemistry
B307-B312	Systems Biology Technologies and Applications
B313-B323	Genomics
B324-B327	Pharmacogenomics and Toxicogenomics
B328-B365	Signal Transduction and Cellular Regulation
B365-B374	Growth Factor and Cytokine Signaling
B375-B380	Hormone and Nuclear Hormone Signaling
B381-B386	Plant Hormones and Signaling
B387-B390	Extracellular Matrix and Cell Signaling
B391-B413	G Proteins and Small Gtpases
B414-B417	Microbial Systems and Parasitology
B418-B420	Bacterial Communication
B421-B435	Microbe-Host Interactions
B436-B444	Plant-Microbe Interactions
B445-B452	Metabolism and Bioenergetics
B453-B456	Metabolic Networks and Regulation
B457-B465	Amino Acid Metabolism
B467-B478	Plant Metabolism and Biosynthetic Pathways
B479-B508	Lipids and Membranes
B509-B528	Membrane Proteins and Lipid Interactions
B529-B531	Cell and Organelle Dynamics
B532-B533	Nuclear Dynamics
B534-B537	Endoplasmic Reticulum
B538-B549	Mitochondria in Health and Disease

SUNDAY APRIL 23

587

Undergraduate Education (ASBMB)

B1 587.1 A Multiweek Tyrosinase Inhibitor Synthesis and Analysis Project: A Capstone Experiment for the Undergraduate Biochemistry Laboratory Course. P.S. Mertz, C.N. Streu, R.D. Reif, K.Y. Neiles, A.J. Schech, *St. Mary's College of Maryland, Albion College and University of Mary Washington*

B2 587.2 Research and Writing to Promote Critical Thinking in Undergraduate Education. R.P. Rogers, *Wentworth Institute of Technology*

B3 587.3 Development of Learning Progressions Through the Chemistry Curriculum to Biochemistry. A.J. Wolfson, A.M. Mercer, E.G. Offerdahl, J.E. Lewis, *Wellesley College, University of South Florida and Washington State University*

B4 587.4 Improving STEM Student Retention via Early Research Engagement: A Pilot. P.G. Bouyer, M. Watters, *Valparaiso University*

B5 587.5 Teaching Chemical Biology at a Primarily Undergraduate Institution. A.M. Danowitz, *Mercyhurst University*

B6 587.6 Using an Alternate Reality Learning Experience (ARLE) to Teach Molecular Biology Techniques and Concepts in a Genetics Laboratory. C.L. Clauson-Kozina, J.D. Borden, S. Rheinschmidt, G. Kunzweiler, *Saint Leo University*

B7 587.7 Understanding the Phenomenological and Ontological Identity of the Black Seminole in Southwest Texas as a Means for Historical Preservation and Formation of a Community Narrative. P. Torres, M. Trevino, B. Villasenor, K. Pena, G. Villareal, D. Rincon, I. Vasquez, J. Barrera, J. Verastegui, N. Carrillo, C. Williams, R. Escamilla, R. Pena, C. De La Cerda, J. Porras, E. Ramirez, J. Riojas, V. Williams, D. Johnson; Jr., *Southwest Texas Junior College*

B8 587.8 What the Biochemistry Education Research Literature Can Tell University-Level Biochemistry Instructors. F.K. Lang, G.M. Bodner, *Purdue University*

B9 587.9 Integration of Literature-Based Activities to Enhance the Learning of Content, Scientific Process, and Quantitative Analysis in Biochemistry Courses. H. Masuda, *Indiana University Kokomo*

B10 587.10 Teaching Cell Signaling Through Research: The Freshman Research Initiative at the University of Texas at Austin. G. Clark, S. Rodenbusch, S. Roux, *University of Texas at Austin*

B11 587.11 Execution and Assessment of a Mindset Intervention in an Introductory Biochemistry Class. D.J. Hall, *Lawrence University*

B12 587.12 Introduction of Enzymatic Polymer Degradation to Enhance the Undergraduate Polymer Chemistry Curriculum. A.E. Neely, N.Y. Davis, M.H. Weiland, *Armstrong State University*

B13 587.13 Northwest Biosciences Consortium RCN-UBE: Organization and Development of a Faculty Network Leadership Team. A. Kruchten, E. Baumgartner, A. Beadles-Bohling, J. Brown, J. Duncan, L. Kayes, S. Kiser, S. Seidel, W. Shriner, S. Stavrianeas, C. Tillberg, *The College of Saint Scholastica, Western Oregon University, University of Portland, Linfield College, Willamette University, Oregon State University, Lane Community College, Pacific Lutheran University and Mount Hood Community College*

B14 587.14 Investigating Variations in Instructor-Generated Feedback as a Mediating Factor for Student Learning. E. Offerdahl, J. Boyer, M. McConnell, J. Momsen, R. Salter, K. Williams, L. Wiltbank, *Washington State University and North Dakota State University*

B15 587.15 Phylogenetic Analysis of RuBIsCO: An Active Learning Strategy for Teaching Plant Evolution. M. Van Stry, *Lane College*

B530 631.2 Stressing Interdisciplinarity to Mold the Undergraduate Experience. C.M. Keller, B.E. Bridges, J.N. Roney, D.R. Dries, *Juniata College*

588

Learning Tools in Molecular Biology and Biochemistry Undergraduate Education

B16 588.1 A Process for Defining and Validating Learning Competencies for Course-Based Undergraduate Research Experiences in a Biochemistry Laboratory Course. S.M. Irby, N.J. Pelaez, T.R. Anderson, *Purdue University*

B17 588.2 A Model for a Scientific Literature and Data Analysis Driven Undergraduate Course. K.K. Resendes, *Westminster College*

B18 588.3 Improving Student Understanding of Pre-Requisite Knowledge and Long Term Understanding of Biochemical Concepts. A.T. Taylor, W.R. Novak, *Wabash College*

B19 588.4 Transition to a Course-Based Undergraduate Research Experience (CURE). P.A. Craig, J.L. Mills, R. Roberts, M. Pikaart, C. Daubner, S. Irby, T. Anderson, *Rochester Institute of Technology, Ursinus College, Hope College, St. Mary's University and Purdue University*

B20 588.5 How Four Research Scientists Integrate Methods, Mechanisms, Context, Analogies, and Theory to Communicate Explanations About Protein Folding and Dynamics. K.A. Jeffery, N. Pelaez, T.R. Anderson, *Purdue University*

B21 588.6 Computational Studies of the Nudix Hydrolase Superfamily and Nitrophenyl Phosphatase Subfamily of the Had Superfamily. K. O'Donovan, J. Nulsen, P. Craig, S. O'Handley, *Rochester Institute of Technology*

B22 588.7 Variation in the Effectiveness of Clicker Use Based on Cohort Composition in a Small Upper Division Cell and Molecular Biology Course. K.K. Resendes, *Westminster College*

B23 588.8 Experiences of Undergraduate Students Identifying Proteins of Unknown Function as Part of a Teaching Laboratory in a Biochemistry Course. S. Daubner, J. Beckman, J. Beltran Gastelum, S. Mallet, E. Vogt, *St. Mary's University*

B24 588.9 A Framework for Assessing Molecular Visualization Skills and Competencies. D.R. Dries, P.A. Craig, D. Dean, H.V. Jakubowski, W.R. Novak, A.I. Roca, C.R. Terrell, M.A. Franzen, *Juniata College, Rochester Institute of Technology, University of Saint Joseph, College of St. Benedict/St. John's University, Wabash College, ProfileGrid.org, University of Minnesota, Rochester and Milwaukee School of Engineering*

B25 588.10 Assigning and Testing Function from Structure of Uncharacterized Proteins. M. Pikaart, S. Bettag, M. Cunningham, C. Da Silva, C. Gager, M. Glover, K. Jacobs, L. Kennington, J. Knol, N. Ladd, K. Mader, M.M. Magan, Y. Mao, E. Marinelli, L. Miller, R. Nickels, S. Ratliff, A. Rhodes, C. Schaar, M. Turner, *Hope College*

B26 588.11 Glutamic Acid 446 and Arginine 447 in Heat Shock Protein 70 (hsp70) Are Critical for Regulating Superoxide Dismutase-2 (SOD2) Function. A.J. Afolayan, R.J. Teng, G.G. Konduri, *Medical College of Wisconsin*

B27 588.12 Modeling Interdisciplinary Collaborations Through a Course-Based Undergraduate Research Experience (CURE). R. Roberts, J. Koeppe, S. Price, B. Allwein, T. Anderson, S. Daubner, S. Irby, J. Mills, M. Pikaart, P. Craig, *Ursinus College, SUNY College at Oswego, Purdue University, St Mary's University San Antonio, Rochester Institute of Technology and Hope College*

B28 588.13 Assessing Learning Gains Through ePortfolios in an Undergraduate Biochemistry Lab. J.L. Mills, A. DiCola, R. Roberts, M. Pikaart, C. Daubner, S. Irby, T. Anderson, H.J. Bernstein, P.A. Craig, *RIT, Ursinus College, Hope College, St. Mary's University and Purdue University*

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B29 589.1 Approaching Undergraduate Research with Students Who Are Deaf and Hard of Hearing. A.U. Gehret, J.W. Trussell, L.V. Michel, *National Technical Institute for the Deaf/Rochester Institute of Technology and Rochester Institute of Technology*

B30 589.2 Examining the Research Experiences of Undergraduate Biochemistry Students: A Case Study Approach. S.L. Johnson, G.M. Bodner, *Purdue University*

B31 589.3 Rheostat or Toggle: Examining the Role of Non-Conserved Mutations to LURE Students Into Research. A.K. Ayella, B.R. Moriah, *McPherson College and Wichita State University*

B32 589.4 Successes and Teachable Moments During a Partnership to Create a Research-Like Experience in a 2 Year College Organic Chemistry II Laboratory. N. Jaco, C. Lutz, J. Grant, *University of Wisconsin-Stout and Anoka-Ramsey Community College*

B33 589.5 Integrating Human Cell Culture Into Undergraduate Research Projects. C.E. Taylor, *Mercyhurst University*

B34 589.6 CRISPR in the Undergraduate Classroom: A CURE. H.J. Evans Anderson, *Winthrop University*

B35 589.7 The Council on Undergraduate Research (CUR): What's in It for Post-Docs and New Faculty? Advancing Your Research Career with/Through the Council on Undergraduate Research. M. Wolyniak, L. Wimmers, *Hampden-Sydney College and Towson University*

B36 589.8 Year-Long Research Experiences in Drug Discovery May Lead to Positive Outcomes for Transfer Students. J. Beckham, L. Strong, *The University of Texas at Austin*

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Experimental Biology and Medicine

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B37 590.1 Live Cell Microscopy of Intestinal Organoid Oxygenation. R.I. Dmitriev, I.A. Okkelman, T. Foley, D.B. Papkovsky, *University College Cork, Ireland*

B38 590.2 Quantitative Multi-Parametric Microscopy Analysis of Live 3D Cell Models. R.I. Dmitriev, J. Jenkins, I.A. Okkelman, N. O'Donnell, *University College Cork, Ireland*

B39 590.3 Full-Thickness Engineered Skin Tissue with 3D Biomimetic Micro-Topography. J. Yu, E. Korkmaz, P. LeDuc, B. Ozdoganlar, *Carnegie Mellon University*

B40 590.4 An Integrated Biomimetic Adipose Tissue Microchip. Y. Chen, L. Ramalingam, J. Wu, N. Moustaid-Moussa, W. Li, *Wuhan Institute of Technology, People's Republic of China, and Texas Tech University*

B41 590.5 Dried Plums Modify the Colon Luminal Metabolome in a Rat Model of Colon Carcinogenesis.. V. Seidel, S.S. Taddeo, M.A. Azcarate-Peril, R.J. Carroll, N.D. Turner, *Texas A&M University and University of North Carolina School of Medicine*

B42 590.6 Bisphenol-A and 17-β Estradiol Alter Colon Microbial Metabolites and Exacerbate Dextran Sodium Sulfate-Induced Colitis in Mice. J.A. DeLuca, R. Menon, R. Riordan, K.F. Allred, A. Jayaraman, C.D. Allred, *Texas A&M University*

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Genome Dynamics: DNA Replication, Repair and Recombination

B43 591.1 DDI1- and DDI2-Dependent Removal of Replication Termination Factor Domain Containing 1 (RTFDC1) from Replication Forks Is Necessary for Proper Response to Replication Stress. M.C. Kottemann, B. Conti, F.P. Lach, A. Smogorzewska, *The Rockefeller University*

B44 591.2 Investigating the Regulation of *recA* in the Emerging Pathogen]*Acinetobacter baumannii*. C. Ching, K. Gozzi, B. Heinemann, V.G. Godoy, *Northeastern University*

B45 591.3 *Escherichia coli* DinB and Replication-Transcription Collisions. T. Tashjian, J.A. Halliday, C. Herman, V. Godoy, *Northeastern University and Baylor College of Medicine*

B46 591.4 Genetic and Environmental Factors That Regulate Tandem Repeat Variation in Coding Regions. S.M. Fuchs, *Tufts University and Allen Discovery Center at Tufts*

B47 591.5 The Effects of Replication Fork Restart on CAG Repeat Instability in *S. pombe*. M. Gold, K. Freon, A. Su, S. Lambert, C. Freudenreich, *Tufts University and Curie Institute, France*

B48 591.6 Potent DNA Strand Annealing Mediated by the T7 Single-Stranded DNA Binding Protein gp2.5. A.J. Hernandez, C.C. Richardson, *Harvard Medical School*

B49 591.7 The Replication Factor A2 N-Terminus Is Required for Proper Progression Through Meiotic Divisions. A. Adsero, T. Wilson, S. Haring, *North Dakota State University*

B50 591.8 Structure and Mechanism of a Viral Genome Packaging Motor. B. Kelch, *University of Massachusetts Medical School*

B51 591.9 Mutagenesis of HEK293 Cells Reveals Phenotypic and Genotypic Variants Involved in Hsp90-Mediated Glucocorticoid Signaling. T.M. Forst, S.M. Ryan, N. Pelle, P.J M. Murphy, *Seattle University*

B52 591.10 Genetic Variations at 15 Forensically Relevant Microsatellite Loci (STRs) in the Three Major Ethno-Linguistic Population Groups in Nigeria. B.U. Agbo, O.A T. Ebuehi, A.A. Osuntoki, *University of Lagos, Nigeria*

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DNA Polymerases, Replicases and Replisomes

B53 592.1 Role of the Excluded Strand in DNA Unwinding by Hexameric Helicases. M. Trakselis, *Baylor University*

B54 592.2 Y-Family DNA Polymerase Human Pol Kappa Is More Tolerant of Changes to Its Active Site Loop Than DinB. N.M. Antczak, M. Packer, J. Walsh, P. Ippoliti, P.J. Beuning, *Northeastern University*

B55 592.3 Residues of *Escherichia coli* Thioredoxin Critical for Interaction with Phage T7 DNA Polymerase to Increase Processivity. S. Lee, N. Tran, C.C. Richardson, *Harvard Medical School*

B56 592.4 Dynamics of the *E. coli* Beta Clamp and Its Influence on DNA Loading. B. Koleva, J. Baez, J. Conway, A. Wu, P. Beuning, *Northeastern University and Colgate University*

B57 592.5 Understanding Conformational Changes During Translesion Synthesis: *In Silico* Studies of DinB. E. Perez, B. Sampoli Benitez, *Marymount Manhattan College*

B58 592.6 Role of Pol κ and DinB Distal Residues on Extension Step of TLS. H.R. Stern, C.L. Mills, M.J. Ondrechen, P.J. Beuning, *Northeastern University*

B59 592.7 The Epsilon Subunit of DNA Polymerase III in the Bacterial Response to Quinolones. Z. Whatley, N. Sy, S. DiDomenico, A. Finck, *Gettysburg College*

B60 592.8 Investigating the Mechanism of Trans-Lesion Synthesis by Human DNA Polymerase Kappa. T.B. Allen, Z. Younger, B. Sampoli Benitez, *Marymount Manhattan College*

B61 592.9 Role of Exo1 Nuclease in Telomere DNA Degradation in *yku70*/*yku80* Mutants of *S. cerevisiae*. J.A. Ream, L.K. Lewis, *Texas State University*

B62 592.10 Inflammation, Global DNA Methylation and Telomeres in Healthy Adolescents Y. Dong, Y. Huang, B. Gutin, Y. Dong, H. Zhu, *Medical College of Georgia*

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Chromatin Structure and Gene Expression

B63 593.1 Interactions Between Variant Histone H2A.Z and Linker Histone H1 in Budding Yeast. J. Riggs, J. Huang, L. Winston, M. Sica, S. Holmes, *Wesleyan University*

B64 593.2 Epigenetics and Gene Expression—Pathways, Pathway Suites and Networks at RGD's Pathway Portal. V. Petri, G. Hayman, J.R. Smith, M. Tutaj, J. Thota, J. De Pons, M.R. Dwinell, M. Shimoyama, *Medical College of Wisconsin*

B65 593.3 Decipher and Target Cancer Cell Dependency on Epigenetic Mutations. G. Wang, *University of North Carolina at Chapel Hill*

B66 593.4 Epigenetic Manipulation of Inactive X Chromosome for Rett Syndrome Therapeutics. S. Bhatnagar, *University of Virginia School of Medicine*

B67 593.5 L3MBTL2 Is Required for Spermatogenesis and the Maintenance of Male Fertility C. Meng, *The Chinese University of Hong Kong, People's Republic of China*

B68 593.6 Role of Chromatin Remodeling and Spacing Factor 1 in Histone H2A Ubiquitination Mediated Gene Silencing. H. Wang, Z. Zhang, A.E. Jones, M.B. Renfrow, C. Liu, W. An, J. Luo, W. Wu, Y. Kang, Y. Tong, *University of Alabama at Birmingham, Nanyang Technological University, Singapore, University of Southern California, Chinese Academy of Sciences, People's Republic of China, and University of Toronto, Canada*

B69 593.7 Interaction of Protein Occupancy, Chromosome Structure, and Gene Regulation in *E. coli*. G.M. Kroner, S. Scholz, T.J. Goss, X. Lin, P.L. Freddolino, *University of Michigan*

B70 593.8 The Role of CCCTC Binding Factor (CTCF) in Epithelial to Mesenchymal Transition (EMT). A. Bhattacharya, J. Hur, A. Dhasarathy, *UND School of Medicine and Health Sciences*

B71 593.9 Toward the Molecular Identification of *Afr2*, a Gene Implicated in Liver Cancer. Z. Grimes, R. Seipelt-Thiemann, M. Paterson, B. Spear, *Middle Tennessee State University and University of Kentucky*

B72 593.10 Chromatin Accessibility of the Dosage Compensated *Drosophila* Male X-Chromosome Is Established by a Context-Specific Role for the CLAMP Zinc Finger Protein. E. Larschan, J. Urban, G. Kuzu, *Brown University*

B73 593.11 Argonaute2 Cooperates with Laminb to Repress Transcription at Lamin-Associated Domains in *Drosophila melanogaster*. E. Nazer, M. Chinen, R. Dale, E. Lei, *National Institute of Diabetes and Digestive and Kidney Diseases and National Institutes of Health*

B74 593.12 Role of the ELL Complex in Transcriptional Regulation in *S. pombe*. S. Gopalan, D. Gibbon, C. Seidel, Y. Zhang, L. Florens, M. Washburn, J. Conaway, R. Conaway, *Stowers Institute and University of Kansas Medical Center*

B75 593.13 Characterization of the SUN Domain Protein Mps3 Function in Gene Expression. L. Antoniacci, R. Lukasak, *Marywood University*

B76 593.14 INO80 Chromatin Remodeling Connects Metabolic Gene Expression to Cell Division. A.J. Morrison, G. Gowans, A. Schep, D. King, W. Greenleaf, *Stanford University*

B77 593.15 An Epigenetic Switch Regulates *de Novo* DNA Methylation at Pluripotency Gene Enhancers. H. Gowher, C.J. Petell, *Purdue University*

B78 593.16 Biochemical Insights Into the Mechanism of Oncohistones. P.W. Lewis, *University of Wisconsin-Madison*

B79 593.17 Fine-Tuning of FACT by the Ubiquitin Proteasome System in Regulation of Transcriptional Elongation. S.R. Bhaumik, R. Sen, J. Ferdoush, A. Kaja, *Southern Illinois University School of Medicine*

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B80 594.1 Retention of CENP-A Nucleosomes During DNA Replication E. Zasadzinska, J. Huang, A.O. Bailey, N.S. Lee, K.A. Wong, M.R. Jakubaszek, L. Guo, B.E. Black, D.R. Foltz, *Northwestern University, University of Virginia and University of Pennsylvania*

B81 594.2 Determination of Altered Bromodomain Function of Cancer-Associated Missense Mutations in Polybromo-1. C. Goetz, E. Dykhuizen, B. Smith, *Medical College of Wisconsin and Purdue University*

B82 594.3 Architecture of the Nucleosome Remodeling and Deacetylase (NuRD) Complex. J.K. Low, A.P. Silva, M. Sharifitabar, M. Torrado, J. Schmidberger, S.R. Webb, H. Saathoff, B.L. Parker, B. Paudel, A. van Oijen, M.J. Landsberg, N.E. Shepherd, J.P. Mackay, *The University of Sydney, Australia, The University of Wollongong, Australia and The University of Queensland, Australia*

B83 594.4 Roles of PARP-1-Dependent Poly(ADP-Ribosyl)ation in Regulation of the Catalytic Activity of Human ALC1 Chromatin Remodeling Enzyme. S. Ooi, *Stowers Institute for Medical Research*

B84 594.5 Complementary Roles of *Pseudomonas aeruginosa* Condensins in Global Chromosome Organization. B.K. Bhowmik, V.V. Rybenkov, *University of Oklahoma*

B85 594.6 Sequence Analysis of Mutant Chick Embryo DNA. J. Vo, J. Byk, S.R. Smith, M.A. Benore, *University of Michigan Dearborn*

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Epigenetic Modifications of DNA and RNA

B97 595.1 Withdrawn. **B98 595.2** Epigenetic Regulation of Alternative Developmental Trajectories. A.L. Romney, J.E. Podrabsky, *Portland State University*

B99 595.3 A Shared Structural Recognition Element in mRNA Substrates of the tRNA Modifying Enzyme Pseudouridine Synthase 1. T.M. Carlile, T.A. Bell, M.F. Rojas-Duran, B. Zinshteyn, H. Shin, C. Mason, W.V. Gilbert, *MIT*

B100 595.4 Epigenetic Regulation Through UHRF Proteins. S.B. Rothbart, R.M. Vaughan, E.M. Cornett, B.M. Dickson, *Van Andel Research Institute*

B101 595.5 Profiling of DNA Methylation Patterns in Response to Inorganic Arsenic Exposure and Reversal of Exposure. M.L. Eckstein, M. Rea, R. Eleazer, Y. Fondufe-Mittendorf, *University of Kentucky*

B102 595.6 Spatio-Temporal Dynamics of Sphingosine-1-Phosphate Receptor 1 Activity in Endothelial Cells During Lung Injury and Resolution. M. Akhter, D. Mehta, *Department of Pharmacology, College of Medicine and University of Illinois at Chicago*

B103 595.7 DNA Cytosine Methyltransferase Promotes Stationary Phase Fitness in *Escherichia coli*. O. Kambhampati, L. Finnerty-Haggerty, R. Huss, R. Knapp, K. Militello, *SUNY Geneseo*

B104 595.8 Ciglitazone Prevent Inflammation in Skeletal Muscle Induced by Hyperhomocysteinemia. A. Majumder, J. Behera, S. C Tyagi, *University of Louisville*

B105 595.9 Bisulfite DNA Sequencing Analyses to Detect Methylation Patterns in the P73 Gene Promoter in Prostate Cancer Cell Lines. N. Braganca, L.M. Carastro, J.J. Schabort, J.Y. Park, *The University of Tampa and H. Lee Moffitt Cancer Center & Research Institute*

B106 595.10 YTHDC2 Regulates Spermatogenesis Through Promoting the Translation of N^6-Methyladenosine-Modified RNA. P.J. Hsu, Y. Zhu, H. Ma, Y. Cui, X. Shi, G. Luo, Z. Lu, H. Shi, Q. Dai, M. Clark, B. Shen, C. He, *The University of Chicago, State Key Laboratory of Reproductive Medicine, Nanjing Medical University, People's Republic of China*

BI07 595.11 Free Hemoglobin Change Gene Expression Involving in Cell-Cell Signaling Through Different DNA Methylation in THP-1-Derived Macrophages. M. Cha, M. Lee, *Korea Institute of Oriental Medicine, Republic of Korea*

BI08 595.12 Methylation Status of the Gene Encoding Akt2 in Cinnamon Extract Treated MCF-7 Cells. M. Hill, R. Bulko, A. Aulthouse, D. Kinder, A. Stockert, *Ohio Northern University*

BI09 595.13 MCF-7 Morphological Changes Upon Treatment with Aqueous Cinnamon Extract. R. Bulko, R. Aljahani, A. Aulthouse, D. Kinder, A. Stockert, *Ohio Northern University*

BI10 595.14 Combinatorial Effects of PK11195 and 5-Azacytidine as an Epigenetic Modulator for MPC1. D. Duran, R.W. O'Donnell, *SUNY Geneseo*

BI11 595.15 Upregulating Human Leukocyte Antigen Expression in Multiple Cancer Cells Through Epigenetic Modulators. N.T. Terrigino, D.J. Nicholas, R.E. Powers, S. Dutta, R.W. O'Donnell, *SUNY Geneseo*

BI12 595.16 DNMIi Decitabine Induces a Type I Interferon Response in Leukemia Cell Lines. D.J. Nicholas, P. Srivastava, A. AlShangity, M.J. Nemeth, *SUNY Geneseo and Roswell Park Cancer Institute*

BI13 595.17 Deciphering the Dynamics of UHRF1-Dependent DNA Methylation. R.L. Tiedemann, P.A. Jones, S.B. Rothbart, *Van Andel Research Institute*

BI14 595.18 Investigating the Heritability of a Learned Pathogen Avoidance Behavior in *Caenorhabditis elegans*. L.E. Meissner, G.A. Manilla, T.G. Brown, E.M. Youngman, *Villanova University*

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RNA: Processing, Transport, and Regulatory Mechanisms

BI15 596.1 Nuclear Export Factor 3 Regulates Localization of SnoRNAs. M. Li, J. Lee, A. Sletten, K. Pyles, J. Schaffer, *Washington University in St. Louis School of Medicine*

BI16 596.2 Nuclear Phosphoinositide Signalling Coupled Variant Poly(A) Polymerase Star-PAP Regulates Metastatic Invasion. S. Ap, R.S. Laishram, *Rajiv Gandhi Centre for Biotechnology, India*

BI17 596.3 Withdrawn.

BI18 596.4 The Role of mRNA Degradation in Dynamic Nitrogen Environments in *Saccharomyces cerevisiae*. C.S. Rodriguez-Tirado, D. Gresham, F. Abdul-Rahman, *University of Puerto Rico, Puerto Rico and New York University*

BI19 596.5 Potential Therapeutic Targets and Biomarkers for Seizure: Genome-Wide DE miRNA Expression Profiling of Rat Brain Following Exposure to Soman. X. Feng, A. Gautam, R. Kumar, G. Dimitrov, B. Sowe, F. Rossetti, J.L. Meyerhoff, L.A. Lumley, R. Hammamieh, M. Jett, *Geneva/USACEHR, USACEHR, Walter Reed Army Institute of Research and U.S. Army Medical Research Institute of Chemical Defense*

BI20 596.6 Export of Discarded, Splicing Intermediates Provides Insight Into mRNA Export. Y. Zeng, J. Staley, *The University of Chicago*

BI21 596.7 Engineering of an Immunogenic Pre-*Trans*-Splicing RNA (iPTR) to Block Growth and Express a Glioblastoma Specific Epitope. S.C. Falotico, N. Sivetz, P. Nekrasov, M.J. Hicks, *Monmouth University*

BI22 596.8 Unraveling the Role of Helicases in Nonfunctional rRNA Decay. V. Yu, F. LaRiviere, *Washington and Lee University*

BI23 596.9 A Genetic Interaction Between DED1 and HAT1 in Saccharomyces cerevisia Suggests a Role for Hat1p in Mrna Storage. A. Hilliker, A. Kindsfather, A. Winters, N. Rothbard, S. Robins, L. Fronek, *University of Richmond*

BI24 596.10 Post-Transcriptional Modulation of aENaC mRNA Stability in Alveolar Epithelial Cells: Involvement of Conserved Domains on Its 3′ Untranslated Region. F. Gagnon, F. Migneault, Y. Berthiaume, A. Dagenais, *Institut de Recherches Cliniques de Montreal, Canada*

BI25 596.11 Differential Alternative Splicing in Clinical Strains of *Cryptococcus neoformans*. M.C. Merryman, E. McClelland, R. Seipelt-Thiemann, *Middle Tennessee State University*

BI26 596.12 Dissecting the Mechanism of H3K36 Methylation in Regulating Pre-mRNA Splicing. C. Leung, S. Douglass, T. Johnson, *UCLA*

BI27 596.13 The Role of the Essential Splicing Factor Prp2 in Ribosome Biogenesis. S. Edwards, A. Hossain, T. Johnson, *University of California, Los Angeles*

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RNA Polymerases

BI28 597.1 P-TEFb Regulates Oocyte Maturation and Embryonic Genome Activation by Pol II CTD Phosphorylation and Ribosomal RNA Processing in Mammals. D.I. Jin, R.K. Oqani, T. Lin, J.E. Lee, S.Y. Kim, *Chungnam National University, Republic of Korea*

BI29 597.2 Early Elongation Control of RNA Polymerase II Transcription by TFIIS. S. Peck, M. Fox, W. Smith-Kinnaman, H. Gao, Y. Liu, A. Mosley, *Indiana University School of Medicine*

BI30 597.3 Regulation of RNA Polymerase Translocation by the RNA and DNA Hybridization at the Upstream Edge of the Transcription Bubble. M. Kireeva, C. Trang, G. Matevosyan, L. Lubkowska, M. Kashlev, *NCI*

BI31 597.4 PAF53 Is Essential in Mammalian Cells: CRISPR/Cas9 Fails to Eliminate PAF53 Expression. L. Rothblum, E. Chang, K. Rothblum, *OUHSC*

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RNA Binding Proteins

BI32 598.1 Role of Cystines in the Structure and Function of the RNA-Binding Protein LARP6. E.L. Peña, L.F. Lane, E. Salas, J.M. Castro, K.A. Lewis, *Texas State University*

BI33 598.2 Alternative Splicing of hnRNPA2/B1 by SRSF2 and Its Effects on Stress Granule Formation in Myelodysplasia. A. Ardasheva, R. Vasic, S. Halene, *Juniata College and Yale University School of Medicine*

BI34 598.3 Effect of Histidine Rich Sequence Motifs on the RNA Binding Activity of LARP6. C. Toner, F.C. Betancourt, K. Lewis, *Texas State University*

BI35 598.4 Biochemical Characterization of Evolutionary Divergent Vertebrate LARP6 Proteins. J.M. Castro, D.A. Horn, K.A. Lewis, *Texas State University and Agilent Technologies*

BI36 598.5 Insights Into HuR RRM1-2 Tandem Domains Self-Association and mRNA Recognition. A.S. Pinheiro, C. Lixa, K.A. Jendiroba, L.T. Lima, M.T. de Magalhães, F.C. Almeida, *Federal University of Rio de Janeiro, Brazil and Federal University of Minas Gerais, Brazil*

BI37 598.6 Understanding the Role of Post-Translational Modifications on the Splicing Activity of Two Related RNA Binding Proteins. J.M. Reynaga, J. Pina, N. Keppetipola, *California State University Fullerton*

BI38 598.7 Identification and Characterization of a Minimal Functional Splicing Regulatory Protein, PTBP1. R.J. Ontiveros, J. Doan, E. Adams, A.L. Hernandez, D.L. Black, N.M. Keppetipola, *California State University, Fullerton, University of California, Los Angeles*

BI39 598.8 Mechanism of PWI Domain Binding to Nucleic Acids. B.R. Szymczyna, H. Chanzu, N. Jandaghijafari, E.I. Lopez, D. Flores, *Western Michigan University*

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RNA Structure, Folding and Dynamics

B140 599.1 Thermodynamic Analysis of a 4x4 Internal Loop in Magnesium Riboswitch. E. Gilbertson, *Colorado College*

B141 599.2 Structural Probing of the Cap-Independent Vascular Endothelial Growth Factor Messenger RNA. W. Huang, H. Scott, W. Merrick, D. Bhattacharyya, S. Basu, D. Taylor, *Case Western Reserve University and Kent State University*

B142 599.3 Synthesis and Characterization of Nucleic Acid Aptamers Targeted at *Aspergillus* Surface Carbohydrates. J.A. Bush, M. Sheridan, D.R. Engelke, C.E. Rohlman, *Albion College and The University of Michigan*

B143 599.4 Unique Structures in the 3' UTR of Blackcurrant Reversion Nepovirus Genomic RNA 1 Promote Translation Initiation. L.D. Baquero-Galvis, E. Shields, M.E. Filbin-Wong, *Metropolitan State University of Denver*

B144 599.5 Thermodynamic Examination of the Bulged-G Motif in the 23S Ribosomal RNA. Z. Aman, *Colorado College*

B145 599.6 A Cellular Non-Coding RNA Activator of Human 2'-5'-Oligoadenylate Synthetase 1. B.M. Calderon, G.L. Conn, *Emory University*

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Mechanisms and Regulation of Protein Synthesis

B146 600.1 Analysis of Eukaryotic Translation Initiation Factor (eIF) Phosphorylation by Mass Spectrometry. K. Beglinger, N. Villa, A. Andaya, J. Leary, C. Fraser, *University of California, Davis*

B147 600.2 Regulation of Protein Translation Initiation by Estrogen. M.K. Holz, *Yeshiva University*

B148 600.3 Phosphorylation of eIF2 Directs Multiple Mechanisms of Preferential Translation for Cell Adaptation to Environmental Stress. R.C. Wek, S.K. Young, J.A. Willy, M.E. Fusakio, *Indiana University School of Medicine*

B149 600.4 Protein Synthesis Regulation by Soy Isoflavones Metabolite Equol in Metastatic Breast Cancer Cells. A.M. Cruz-Collazo, C. de la Parra, R.J. Schneider, S.M. Dharmawardhane, *University of Puerto Rico - Medical Sciences Campus, Puerto Rico and New York University School of Medicine*

B150 600.5 Antimicrobial Peptide Turns the Ribosome Into a Release Factor Trap. T. Florin, C. Maracci, M. Graf, P. Karki, D. Klepacki, M.V. Rodnina, D.N. Wilson, N. Vázquez-Laslop, A.S. Mankin, *University of Illinois at Chicago, Max Planck Institute for Biophysical Chemistry, Germany, University of Munich, Germany and University of Hamburg, Germany*

B151 600.6 Mediating Protein Synthesis in Developing Neurons: Netrin Receptor Deleted in Colorectal Cancer (DCC) Binds Eukaryotic Ribosomes to Prevent Translation of Messages Independent of Initiation Mechanism. M.E. Filbin-Wong, T. Gonen, J.S. Kieft, *Metropolitan State University of Denver, Howard Hughes Medical Institute and University of Colorado School of Medicine*

B152 600.7 Characterization of CD38 mRNA, Protein, and Enzyme Activity in the Cell Types of the Heart. J. Boslett, J.L. Zweier, *Ohio State University*

B153 600.8 Differentiation of Human Keratinocytes Requires Translational Control by the eIF2 Kinase GCN2. A. Collier, R. Wek, D. Spandau, *Indiana University School of Medicine*

B154 600.9 The N-Terminus of Secis Binding Protein 2 Is Required for Processive Selenocystine Incorporation in Selenoprotein P. M.H. Pinkerton, M. Vetick, S.P. Shetty, P.R. Copeland, *Rutgers University*

B155 600.10 Messenger RNA Stability Drives the Expression of Antibiotic Resistance Methyltransferase Independently of Ribosome Stalling. K. Los, M. Yap, *St. Louis University School of Medicine*

B156 600.11 Regulation of Protein Synthesis by Post-Translational Modification of Eukaryotic Translation Elongation Factor 1A. P. Sharma, M.K. Mateyak, D. He, W.B. Perez, T.G. Kinzy, *Rutgers-RWJ Medical School*

B157 600.12 IL-6 Modulates Cardiac Muscle Proteostasis and Anti-Oxidative Capacity Post-Burn A. El Ayadi, Y. Wang, A. Prasai, M. Wetzel, A. Goullry, C. Porter, D.N. Herndon, C. Finnerty, *University of Texas Medical Branch and Shriners Hospital for Children*

B158 600.13 Enhancement of Transgene Production in a Vaccinia Virus-Based Expression System. B. Richard, J. Flores, B. Jacobs, J. Chaput, B. Wellensiek, *Midwestern University, The Biodesign Institute, Arizona State University and Arizona State University*

B159 600.14 Characterization of a Short Motif Capable of Enhancing Human Cap-Independent Translation. A.N. Juba, A. Hansen, J.C. Chaput, B.P. Wellensiek, *Midwestern University, The Biodesign Institute, Arizona State University and Arizona State University*

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B161 601.2 Importance of the C-Terminal Histidine Residues of *Helicobacter pylori* GroES for Toll-Like Receptor 4 Binding and Interleukin-8 Cytokine Production. L. Chow, H. Lee, Y. Su, B. Huang, F. Hsieh, *College of Medicine and National Taiwan University, Taiwan*

B162 601.3 Distinct Liver X Receptor Alpha Residues at the Protein-Protein Interface Mediate Ligand Dependent Transactivation in Heterodimeric Contexts. S. Bedi, S.D. Rider; Jr., H.A. Hostetler, *Wright State University*

B163 601.4 Predictive Models of Peptide RMS Fluctuations in the Context of HLA-A*02:01 Through Sequence Alone. C. Ayres, T. Riley, S. Corcelli, B. Baker, *University of Notre Dame*

B164 601.5 CD47 Is Required for Activation and Clustering of the TCR/CD3/ Intraflagellar Transport Complex to the Immune Synapse. A. Nugooru, S. Kaur, S.P. Singh, D.D. Roberts, *National Institutes of Health, National Cancer Institute, Virginia Commonwealth University, National Institutes of Health and National Institute of Allergy and Infectious Diseases*

B165 601.6 Biophysical and Structural Characterization of Antigen Recognition by the Alloreactive HCV1406 TCR. Y.M. Wang, B.M. Baker, *University of Notre Dame*

B166 601.7 Effect of Allosteric Changes in MERS 3CL Protease Enzymatic Activity and Dimerization. L.S. Gonzalez, B. Anson, A. Mesecar, *Purdue/Truman and Purdue University*

B167 601.8 Molecular Dynamics Simulations Support Multiple Binding Sites for Phospholamban on SERCA. N. Smolin, S.L. Robia, *Loyola University Chicago*

B168 601.9 Determination of the Residues Necessary for the Self-Interaction of Atg11, a Central Organizer of the Selective Autophagy Initiation Complex
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B169 601.10 Investigating the Binding Affinity of the Peptide Humanin and Its Analogs to Amyloid Beta. D.E. Esckilsen, P. Guttikonda, B.W. Iwaniec, H. Evans, M.C. Milletti, D. Heyl-Clegg, *Eastern Michigan University*

BI70 601.11 Activation of the H-NOX Redox Sensor in *Vibrio cholerae* by a Zinc Ligand Switch Mechanism. R. Mukhopadhyay, E.T. Yukl, *New Mexico State University*

BI71 601.12 Regulation of Ankyrin-Repeat and SOCS-Box Protein 9 (ASB9) in Ovarian Follicles and Identification of Binding Partners. G. Benoit, J.G. Lussier, K. Ndiaye, *University of Montreal, Canada*

BI72 601.13 Determination of Pair-Wise Protein Interactions Between Spt7 and *Drosophila melanogaster* SAGA Subunits. E.E. Colon Acosta, V. Weake, R. Stegeman, A. Harris, *University of Puerto Rico, Arecibo Campus, Puerto Rico and Purdue University*

BI73 601.14 The Impact of T Cell Receptor Docking Geometry on T Cell Signaling. J. Devlin, D. Harris, N. Singh, S. Smith, D. Kranz, B. Baker, *University of Notre Dame and University of Illinois*

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BI75 602.2 Probing the Chromophore of the Green Fluorescent Protein with 4-Cyano-L-Phenylalanine. J. Piacentini, G.M. Olenginski, S.H. Brewer, C.M. Phillips-Piro, *Franklin & Marshall College*

BI76 602.3 Phosphorylation Regulates Apoptotic Caspase Function Through Diverse Molecular Mechanisms. J.A. Hardy, B.P. Serrano, S.J. Eron, *University of Massachusetts*

BI77 602.4 Protein Succination: A Biomarker of Mitochondrial Stress in Adipose Tissue Inhibits Protein Function and Is Regulated by Nutrient Balance. A.M. Manuel, M. Walla, G. Piroli, N. Frizzell, *University of South Carolina School of Medicine and University of South Carolina*

BI78 602.5 Phosphorylation of a Master Transcription Factor in Human Organogenesis Regulates Developmental Fate. Y. Chen, N.B. Phillips, M.A. Weiss, *Case Western Reserve University*

BI79 602.6 Creating Peptide Hydrazides via Intein Splicing for Native Chemical Ligation and Protein Labeling. D.A. Santoleri, J. Liu, O. Ekanayake, S. Rozovsky, *University of Delaware*

BI80 602.7 Role of SUMOylation in Alcohol-Induced Liver Fibrosis. M. Tomasi, C. Cossu, K. Ramani, *Cedars-Sinai Medical Center*

BI81 602.8 Novel Physiological Targets of Fic-Mediated Adenylylation/AMPylation. S. Mattoo, A. Sanyal, *Purdue University*

BI82 602.9 Role of Sumoylation in Alcohol Dehydrogenase 1 (ADH1) Stability and Activity in Alcoholic Liver Disease. C. Cossu, Y. Spissu, A. Floris, M. Tomasi, *Cedars-Sinai Medical Center*

BI83 602.10 Role of Sumoylated SOD2 in Alcoholic Liver Disease and Liver Cancer. Y. Spissu, C. Cossu, A. Floris, M. Tomasi, *Cedars-Sinai Medical Center*

BI84 602.11 A High-Throughput Approach to Annotate the Lysine Methylome. E.M. Cornett, B.M. Dickson, K. Krajewski, M.W. Cowles, Z. Sun, S.B. Rothbart, *Van Andel Research Institute, University of North Carolina and EpiCypher*

BI85 602.12 Posttranslational Arginylation Enzyme Ate1 Affects DNA Mutagenesis by Regulating Stress Response. A. Kumar, M.D. Birnbaum, D. Patel, W.M. Morgan, J. Singh, A. Barrientos, F. Zhang, *University of Miami*

BI86 602.13 Inhibition of Sodium Hydrogen Exchanger 1 Palmitoylation Is Associated with Suppression of Cell Migration. M.J. Hovde, A.J. Kooiker, D.E. Rastedt, J.J. Provost, R.A. Vaughan, M.A. Wallert, J.D. Foster, *University of North Dakota School of Medicine & Health Sciences, Bemidji State University and University of San Diego*

BI87 602.14 Obesity-Mediated Regulation of the Cardiac Acetylome. S.S. Romanick, A. Hostler, K. Schlauch, D. Quilici, Y. Feng, B. Ferguson, *University of Nevada Reno*

BI88 602.15 NAD^+ replacement Therapy with Nicotinamide Riboside Does Not Improve Cardiac Function in a Model of Mitochondrial Heart Disease. A.R. Stram, P.M. Pride, R.M. Payne, *Indiana University School of Medicine*

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BI90 603.2 Structural Differences Associated With DNA Binding of p53 Family Member Proteins. G.R. Mavodza, Y. Fang, Z. Sherif, *Howard University*

BI91 603.3 Ligand Induced Shift in FRET Spectrum of MDA5/LGP2 Signaling Complex. J. Corby, M. Stoneman, G. Biener, V. Raicu, D. Frick, *UW Milwaukee*

BI92 603.4 Insights Into the Mechanism of Protein Functional Loss Upon Covalent Modification by Homocysteine Thiolactone. G.S. Sharma, L.R. Singh, *Dr. B. R. Ambedkar Centre for Biomedical Research and University of Delhi, India*

BI93 603.5 Structure of hRpn13 at the Proteasome. X. Lu, F. Liu, U. Nowicka, V. Sridharan, M. Dyba, S.G. Tarasov, K.J. Walters, *Center for Cancer Research, National Cancer Institute*

BI94 603.6 A Conformationally Gated Model for Serotonin 5-$HT_{1B/1D}$ Receptor Agonist Transport by P-Glycoprotein. L.A. Wilt, K.P. Sigdel, D. Nguyen, G.M. King, A.G. Roberts, *University of Georgia and University of Missouri*

BI95 603.7 Significance of Charged Residues in the Catalytic Sites of *Escherichia coli* ATP Synthase. Z. Ahmad, *A.T. Still University*

BI96 603.8 Structural Insights Into Oxalate Biosynthetic Component. S. Rhee, J. Oh, S. Kim, *Seoul Nat'l University, Republic of Korea*

BI97 603.9 Solution Structure of the Transmembrane Nogo-B Receptor and Insight Into Its Topological Orientation by Small Angle X-Ray Scattering Analysis. J. Holcomb, N. Spellmon, W. Shang, Q. Miao, Z. Yang, *Wayne State University School of Medicine, BioCAT, Argonne National Laboratory and Medical College of Wisconsin*

BI98 603.10 The Importance of a Salt Bridge in FNR Transcription Factor Activity. S.G. Kazmouz, L.J. Badang, L.J. Moore, *Monmouth College*

BI99 603.11 Thermodynamics of the Gamma B Crystallin Protein Demonstrated by T1/T2 NMR Experiments K. Umphred-Wilson, A. Fadden, J. Zanet, K. Mathews, G. Thurston, J. Mills, L.V. Michel, *Rochester Institute of Technology*

B200 603.12 Structural and Functional Basis of GusR-Mediated Regulation of β-Glucuronidase Expression in *Enterobacteriaceae* Gastrointestinal Pathobionts. M.S. Little, S.J. Pellock, W.W. Walton, M.R. Redinbo, *University of North Carolina at Chapel Hill*

B201 603.13 Unique Solutions to a Common Problem: Understanding How I-CreI Homologs Recognize the Same DNA Target Sequence. C.R. Polkinghorn, B. Kaiser, N. Wylie, M. Tang, R. Ruff, *Seattle University*

B202 603.14 Polar Subdomain Alterations Lead to β-Helix Aggregation. D. Sweeting, D. Grilley, T. Weaver, *University of Wisconsin La Crosse*

B203 603.15 Probing Solvation Environments in *Tt* H-NOX by Site-Specific Incorporation of 4-Cyano-L-Phenylalanine. C. Kearney, L.T. Olenginski, D. Tariq, T.D. Hirn, S.H. Brewer, C.M. Phillips-Piro, *Franklin & Marshall College*

B204 603.16 Labilization of the Cobalt-Carbon Bond in Vitamin B_{12} Bound to Adenosyltransferase. G.C. Campanello, U. Twahir, T. Brunold, K. Warncke, R. Banerjee, *University of Michigan, Emory University and University of Wisconsin*

B205 **603.17** Structural Changes in the Nickel-Responsive Regulator NikR from *Helicobacter pylori*. K.A. Baksh, J. Wong, T. Pham, D.B. Zamble, *University of Toronto, Canada*

B206 **603.18** SAXS: A Versatile Tool to Study Biological Macromolecules in Solution. W. Ma, S. Chakravarthy, W. Shang, T. Irving, *Illinois Institute of Technology*

B207 **603.19** Targeting the Hendra Virus Fusion Protein Transmembrane Domain to Inhibit Viral Fusion. C. Barrett, S. Webb, R. Dutch, *University of Kentucky*

B208 **603.20** Exploring the Structural Impact of Unnatural Amino Acids on Protein Structure. N.S. Savidge, N. Maurici, S.H. Brewer, C.M. Phillips-Piro, *Franklin and Marshall College*

B209 **603.21** Role of the Transmembrane Domain of Mucin 1 in Nuclear Localization. G.J. O'Connor, C. Freeman, E. Li, *Saint Joseph's University*

B210 **603.22** Biochemical and Biophysical Comparison of the Human and *Drosophila melanogaster* I Kappa B Kinase Protein Complexes Suggest Structural Conservation. W.E. Rogers, T. Huxford, *San Diego State University and University of California - San Diego*

B211 **603.23** Prediction of the *Entamoeba histolytica* Alcohol Dehydrogenase 2 (EhADH2) Protein Structure Using Bioinformatics Tools. K. Lowerre, C. Hemme, A. Espinosa, *Roger Williams University and University of Rhode Island*

B212 **603.24** New ABCG2 Homology Model Reveals Importance of C-Terminus in Protein Trafficking. J. Cui, H. Sayed, J. Huang, O.M. Woodward, *Guangzhou Institute of Advanced Technology, Chinese Academy of Sciences, People's Republic of China, and University of Maryland School of Medicine*

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B214 **604.2** Understanding the Influence of Translation-Elongation Kinetics on Protein Structure and Function. E.P. O'Brien, *Penn State University*

B215 **604.3** The Structural Basis for Polypeptide Translocation by the HSP104 Disaggregase. D.R. Southworth, A. Yokom, S. Gates, M. Jackerel, J. Shorter, *University of Michigan and University of Pennsylvania*

B216 **604.4** Engineering Potentiated Hsp104 Variants with Enhanced Substrate-Specificity to Counter Neurodegeneration. K.L. Mack, J. Shorter, *Perelman School of Medicine at the University of Pennsylvania*

B217 **604.5** Inorganic Polyphosphate: A Mediator of Protein Folding in Osteoblasts via Interaction with Cyclophilin B. M. Khong, L. Li, C.Y. Lang, J.A. Tanner, *School of Biomedical Sciences, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong, Neuroscience Research Institute, Peking University, People's Republic of China*

B218 **604.6** Chaperoning the Proteome. W.A. Houry, *University of Toronto, Canada*

B219 **604.7** Redox Modification of Fes1 and Its Role in Cellular Oxidative Stress Response. E. Nicklow, C. Sevier, *Cornell University*

B220 **604.8** Periplasmic Chaperones Play Hot Potato with Unfolded Outer Membrane Proteins. K.G. Fleming, S.M. Costello, A.M. Plummer, P.J. Fleming, *Johns Hopkins University*

B221 **604.9** Characterization of Sup35, Rnq1, and Ure2 Cotranslational Prion Aggregation in Saccharomyces cerevisia. B.T. Allwein, *Ursinus College*

B222 **604.10** Inter-Domain Interactions in Nascent Polypeptides Interfere with Productive Protein Folding. K. Liu, K. Maciuba, C. Kaiser, *Johns Hopkins University*

B223 **604.11** Defining Functional Variation of Diverse Hsp104 Homologues. Z. March, J. Shorter, *Perelman School of Medicine at the University of Pennsylvania*

B224 **604.12** The Ribosome-Associated Complex Suppresses [*PSI*$^+$] Prion Formation in Yeast. C. Kelly, T. Tessitore, J. Taddeo, D.M. Cameron, *Ursinus College*

B225 **604.13** The Role of Rr-Resident Lectin Chaperone UGT1 in MHC Class I Peptide Loading. N. Arshad, P. Cresswell, *Yale University School of Medicine*

B226 **604.14** Allosteric Landscape of a Stress-Inducible Human Hsp70 Molecular Chaperone. W. Meng, E.M. Clerico, N. McArthur, L.M. Gierasch, *University of Massachusetts, Amherst*

B227 **604.15** Functional Characterization of Natural Single Nucleotide Polymorphisms Found on HSPA1A, the Major Stress Inducible 70 kDa Heat Shock Gene in Humans. R. Oliverio, N. Nikolaidis, *California State University, Fullerton*

B228 **604.16** Dual Function of the Trigger Factor Chaperone in Nascent Protein Folding. C. Kaiser, K. Maciuba, K. Liu, *Johns Hopkins University*

B229 **604.17** Defining Interactomes of Wild-Type Versus Misfolding Type I Collagen Variants in Osteogenesis Imperfecta. D.N. Doan, A.S. DiChiara, A. Del Rosario, M.D. Shoulders, *MIT*

B230 **604.18** Evolution and Natural Variation of *HSPA1A*, the Major Stress Inducible Gene, in Humans. P. Nguyen, B. Kdeiss, S. Ord, K. Hess, R. Oliverio, N. Nikolaidis, *California State University, Fullerton*

B231 **604.19** Identification of a Pharmaceutical Therapeutic for Nod2, a Protein Mutated in Crohn's Disease, Through Development of a Screen Using Split GFP Complementation. H.C. Wastyk, C. Hou, C. Grimes, *University of Delaware*

B232 **604.20** Loss of Sil1, an ER Co-Chaperone, Causes an Age-Dependent Collapse of Skeletal Muscle Proteostasis, Affecting Pathways Critical for Muscle Physiology. V.P. Ichhaporia, P. Vogel, S. Frase, L. Horner, L.M. Hendershot, *St. Jude Children's Research Hospital and The University of Tennessee Health Science Center*

B233 **604.21** New Insights from High-Throughput Biophysical Screening of Protein-Sequence and Coding-Sequence Libraries. B. Allen, *Penn State University*

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B235 **605.2** Characterization of Recombinant Fructose-1,6-Bisphosphatase (FBPase) Gene Mutations: Insights Into Modulation of FBPase Activity Through Gene Mutation. G. Topaz, V. Epiter-Smith, M. Emad, V. Ford, J. Daley, C. Silva, M. Subramanian, H. Sosa, K. Stieglitz, *Roxbury Community College*

B236 **605.3** α-Effect Furnishes a Mechanistic Bypass for General Base Catalysis in Hedgehog Protein Autoprocessing. B. Callahan, J.L. Giner, D. Ciulla, M. Jorgenson, *Binghamton University and SUNY Environmental Science and Forestry*

B237 **605.4** Protein-Based Models of Nickel Metalloenzymes. H.S. Shafaat, A.C. Manesis, C.R. Schneider, M.C. O'Connor, *The Ohio State University*

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B240 606.3 Inhibition of Acetyl Cholinesterase Extracted from Five Parts of the Brain by 5,6 Dihydroxytryptamine. M.H. Osman, *Medical Research Institute, Egypt*

B241 606.4 Defining Energetic Homeostasis in *Toxoplasma gondii*. R.D. Murphy, A. Dhara, A.P. Sinai, M.S. Gentry, *University of Kentucky*

B242 606.5 Preliminary Characterization of Pyrimidine Biosynthesis Protein Aspartate Transcarbamoylase (ATC) in *Pseudomonas aeruginosa*. C. Patel, F.A. Hachem, A. Vaishnav, B.F. Edwards, H.G. Evans, D.R. Evans, *Wayne State University School of Medicine and Eastern Michigan University*

B243 606.6 Novel Thymidine Hypermodifications in Viruses Encoding a 5-Hydroxymethyl-5′-Deoxyuridine DNA Kinase. P.R. Weigele, S. Müller, Y. Lee, S. Walsh, C. Guan, N. Dai, I. Correa, *New England Biolabs*

B244 606.7 HLA–DM Senses Peptide-MHC Class II Interactions Throughout the Peptide Binding Groove. E. Reyes-Vargas, A.P. Barker, Z. Zhou, X. He, P.E. Jensen, *University of Utah and ARUP Laboratories*

B245 606.8 Examining the Mechanism of Egt2 in Ergothioneine Biosynthesis. K.R. Kathuria, S. Irani, P. Liu, Y. Zhang, *The University of Texas at Austin and Boston University*

B246 606.9 Aspartate Cyclization: The "Aspartic Acid Effect" in *Pyrococcus abyssi* and Deep-Sea Enzyme Pressure Studies. C.J. Minteer, K.M. Colelli, J.N. Reitter, K.V. Mills, *College of the Holy Cross*

B247 606.10 Investigating the Catalytic Cycle and Active Site Residues of the Biodesulfurizing Enzyme, Dibenzothiophene Monooxygenase, DszC. S.A. Jirde, L. Gonzalez-Osorio, K. Eberle, J. Vey, *California State University, Northridge*

B248 606.11 The *E. coli* and Human Nudix Hydrolases NudC and NUDT12 Cleave Damaged NADH. A. Ray, B.A. Beaupre, G.R. Moran, D.N. Frick, *University of Wisconsin- Milwaukee*

B249 606.12 Salt-Dependent Protein Splicing of the Intein in the *Haloquadratum walsbyi* DNA Polymerase. D.A. Reidy, *College of the Holy Cross*

B250 606.13 Differential Protein Splicing of Salt Dependent Inteins from *Haloquadratum walsybi*. A.K. Lynch, S. Amunya, J. Reitter, K. Mills, *College of the Holy Cross*

B251 606.14 Investigation of the Third Step of Protein Splicing in Two Similar Cyanobacterial Inteins. C.K. Ramsoomair, A.E. Yakely, J. Reitter, K. Mills, *College of the Holy Cross*

B252 606.15 A Structural Investigation and Splicing Study of Inteins from Halobacteria. W. Zhang, A.K. Lynch, A.O. Gomez, J.N. Reitter, K.V. Mills, *College of the Holy Cross*

B253 606.16 Structural and Biochemical Analyses of Alcohol Dehydrogenase E Enzymes from *Entamoeba invadens* IP-1, *E. invadens* VK-1:NS and *E. dispar*. M. Gabrielle, J. Leito, A. Espinosa, *Roger Williams University*

B254 606.17 Role of Cys292 in Coupling ATP Hydrolysis to RNA Unwinding Catalyzed by the Hepatitis C Virus Helicase. M.M. Yerukhimovich, D. Frick, C. Marohnic, *University of Wisconsin Milwaukee and Abbott Laboratories*

B255 606.18 Purification and Characterization of Flavin Reductase, DszD, from *Rhodococcus erythropolis*. G. Mendez, *California State University and Northridge*

B256 606.19 Conditional Protein Splicing of Inteins from Extremophiles. A. Gomez, K.V. Mills, *College of the Holy Cross*

B257 606.20 Investigating Metallocofactor Assembly and Enzymatic Capability In the Novel Mn/Fe Lipid-Binding Oxidases. E.K. Miller, N.E. Trivelas, P.T. Maugeri, H.S. Shafaat, *The Ohio State University*

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B259 607.2 Using Dynamics and Structure to Understand Allostery in Signaling Enzymes. W. Peti, *University of Arizona*

B260 607.3 Understanding the Allosteric Control of Kinase Activation by Phosphorylation-Regulated Protein Dynamics. D.B. Iverson, N. Ahn, *University of Colorado and Boulder*

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B266 607.9 Deciphering the Logic of Natural Product Biosynthesis. B. Li, *University of North Carolina at Chapel Hill*

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B269 608.3 Characterization of a Cardiac Drug-Inactivating Enzyme from the Prominent Human Gut Microbe, *Eggerthella lenta*. I, J. Bisanz, P. Turnbaugh, E.P. Balskus, *Harvard University and UCSF*

B270 608.4 Synthesis, Antimicrobial Activity and Molecular Docking Studies of Novel Bioactive Fused Heterocyclic Systems. S. Govori Odai, A. Haziri, H. Ibrahimi, K. Ademi, N. Neziraj, *University of Prishtina, Yugoslavia*

B271 608.5 PTEN Regulation by WWP2. Z. Chen, D. Dempsey, W. Xu, X. Li, D. Dempsey, P. Devreotes, C. Wolberger, S. Gabelli, P. Cole, *Johns Hopkins University*

B272 608.6 Inorganic Arsenic Bioaccessibility/Bioavailability from Cooked Rice Using in Vitro Digestion/Caco-2 Cell Model. K. Lee, S. Lee, *Korea University, Republic of Korea*

B273 608.7 Total Synthesis, Antileishmanial and Anticancer Activity of the Acetylenic Fatty Acids 6-Hexadecynoic, 10-Phenyl-6-Decynoic, and 10-Cyclohexyl-6-Decynoic Acids. E. Álvarez, N. Carballeira, C. Morales, Y. Delgado, A. Tinoco, R. Reguera, R. Álvarez, R. Balaña, *University of Puerto Rico, Rio Piedras Campus, Puerto Rico, University of Leon and Vegazana Campus, Spain*

B274 608.8 Carbohydrate-Linked Cisplatin Analogue: Reactivity Studies with RNA and DNA. S.D. Thalalla Gamage, N. Muthunayake, A. Sonousi, D. Crich, C. Chow, *Wayne State University*

B275 608.9 Affinity Ligand for the Separation of Glycosylated Proteins from Non-Glycosylated Proteins. A. Gunter, C. Mammoser, S. Dhar, L. Rowe, *Valparaiso University*

B276 608.10 Development of a Microscopic Method for the Exposure of Hemoglobin C. K.L. Schmidt, T.R. Randolph, *Saint Louis University*

B277 608.11 Mechanistic Comparison of Structurally Divergent Transcriptional Coactivators Through Covalent Activator-Coactivator Complexes. A.R. Henderson, M. Beyersdorf, N. Foster, K. Sanford, M. Henley, A. Mapp, *University of Michigan*

B278 608.12 Development of Novel Small Molecule Antibiotics Against a Conserved RNA Element in Gram-Positive Bacteria. V.Y. Väre, K.M. Frohlich, G. Todd, J. Bell, P.F. Agris, *SUNY at Albany and The RNA Institute*

B279 608.13 Mechanism and in Vivo Activity of a Covalent Inhibitor of ERK Docking. K.N. Dalby, E.V. Anslyn, D. Zamora-Olivares, T. Kaoud, *UT Austin*

B280 608.14 Earmarking Target-Specific Redox Trajectories for Wound Healing in Zebrafish. Y. Aye, *Cornell University and Weill Cornell Medical College*

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B281 609.1 Simple Model for Screening Anti-Cell-Clumping Reagents: Acids. G. Zem, K. Pastrano, A. Strelnicova, M. Cabrera, J. Cuevas, L. Espinoza, C. Voskanian, R. Keshishian, S. Sorayazadeh, B. Alvarado, S. Pizana, A. Weisman-McCarley, K. DeGuzman, A. Pourkhayat, K. Ellikkal, A. Darmali, S. Oppenheimer, *California State University, Northridge*

B282 609.2 Determining the LC_{50} of a Novel Metap Inhibitor in Lung Carcinoma Cells. A.P. Addison, N.F. Hayden, E. Perli, E. Erwin, G. Chow, L. Vu, S. Bhalla, N. Condic, O. Olaleye, R. Rosell, *University of St. Thomas and Texas Southern University*

B283 609.3 Optimization of a Medium-Throughput Cathepsin K Inhibition Assay for NAAA Inhibitors. E.R. Golden, C. Miyabe, J. Wood, M. Malamas, S. Alapafuja, A. Makriyannis, *Northeastern University*

B284 609.4 Assessing the Effects of ErbB2 Kinase Inhibition in Conjunction with Broad Spectrum Anti-Cancer Treatments. C. Tremper, A.R. Matha, C.E. Taylor, *Mercyhurst University*

B285 609.5 Identification of Yeast Deletions Strains That Alter the Efficacy of Antifungal Drugs. E. Bataba, N.D. Serratore, S.D. Briggs, *Georgia State University and Purdue University*

B286 609.6 The PepSAVI-MS Pipeline for Natural Product Bioactive Peptide Discovery. C.L. Kirkpatrick, D. Pritchard, N. Parsley, Y. Liu, D.W. Hoskin, L.N. Shaw, L.M. Hicks, *University of North Carolina, Chapel Hill, Dalhousie University, Canada and University of South Florida*

B287 609.7 A Cell-Based inhibitor Screening Platform for S-Adenosylmethionine Synthetase. G. Parungao, M. Dziobak, R. Blumenthal, R. Viola, *The University of Toledo*

B288 609.8 Viable Strategy for Inhibition of Death Receptor 5 Signaling by Disrupting Receptor-Receptor Interactions. N. Vunnam, C. Lo, B.D. Grant, D.D. Thomas, J.N. Sachs, *University of Minnesota*

B289 609.9 Improving the Sensitivity of P-Glycoprotein to Drug-Like Inhibitors in ATPase Assays and ESR Studies. G. Chen, J. Ballou-Crawford, J.G. Wise, P.D. Vogel, *Dept. of Biological Sciences and the Center for Drug Discovery, Design and Delivery and Southern Methodist University*

B290 609.10 New Strategies for the Expression of Human P-Glycoprotein (MDR1) in the Yeast *Pichia pastoris*. M. C. de Oliveira, C.A. Lavigne, H.A. Thornton, B.M. Tran, J.G. Wise, P.D. Vogel, *Southern Methodist University*

B291 609.11 Inhibition of Tumor Necrosis Factor Receptor I Signaling by Small Molecules. C. Lo, N. Vunnam, A. Lewis, T. Chiu, B. Brummel, T. Schaaf, B. Grant, P. Bawaskar, D. Thomas, J. Sachs, *University of Minnesota, Fluorescence Innovations Inc and Photonic Pharma LLC*

B292 609.12 Elucidation of the Cell Death Pathways Induced by Aqueous-Stable Titanium(IV) Compounds as Potential Anticancer Agents Y. Delgado, A. Vázquez, M. Kowaleff, M. Saxena, Z. Torres, A. Tinoco, *University of Puerto Rico Rio Piedras Campus and City University of New York*

B293 609.13 In Vivo Drug Discovery for Progressive Supranuclear Palsy Using a Novel Zebrafish Model. E.A. Burton, Q. Bai, *University of Pittsburgh*

B294 609.14 Acetaminophen Hepatotoxicity Testing Using 3D Rat Hepatocyte Cultures. V. Paliwal, M. Clapham, *Milwaukee Sch. Engineering and Drake University*

B295 609.15 The Antimicrobial Property of the Acetone Extract of *Cola acuminate*. B.J. Thomas, C.M. Telles, *Southern University and A&M College*

B296 609.16 Determining the Correlation Between *Drosophila melanogaster* Toluene Exposure and the Resulting Toxicity Effects on Fly Survival and Fecundity. V. Trivino, M. MacGregor, T. Nguyen, B. Nunez, Z. Lodhra, L. Castillo, B. Luu, R. Rosell, E. Ledesma, *University of St Thomas*

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B297 610.1 Enzyme-Catalyzed Expressed Protein Ligation. S. Henager, N. Chu, Z. Chen, D. Bolduc, D. Dempsey, Y. Hwang, J. Wells, P. Cole, *Johns Hopkins University and University of California at San Francisco*

B298 610.2 Effect of Bleaching Products on Proteins of Teeth. R. Frazier, A. Panah, K. Keenan, *Stockton University*

B299 610.3 Effect of Bleaching Products on the Collagen of Teeth. C. Cavallaro, C. Schiliro, K. Keenan, *Stockton University*

B300 610.4 Anti-Cancer Properties of the Antimicrobial Peptide CDT on A549 Lung Cancer Cells. N. Hendrickson, A. Eitel, M. Jujjavarapu, J. Guthrie, H. Evans, D. Heyl-Clegg, *Eastern Michigan University*

B301 610.5 Disruption of the Dopamine D1/D2 Heteromer Using Synthetic Peptides. M. Champion, A. Baraka, H. Evans, D. Heyl-Clegg, *Eastern Michigan University*

B302 610.6 Analysis of the Stability of Natural and Unnatural Amino Acids in Extraterrestrial Conditions. C. Mammoser, B. Brown, S. Dhar, L. Rowe, *Valparaiso University and Ivy Tech Community College*

B303 610.7 Characterizing the Impact of the Highly Endosmolytic Cell-Penetrating Peptide, dfTAT, on Human Cells. H. Kondow, *Texas A&M University*

B304 610.8 Peptide Facilitated Intracellular Delivery of Quantum Dots for Live-Cell Imaging. C.I. Rivera Vera, *University of Illinois at Chicago*

B305 610.9 An Interdisciplinary Investigation of Antimicrobial Peptides. R.R. Wadhwa, R. Stevens-Truss, *Kalamazoo College*

B306 610.10 Targeting mER and GLP1R for the Treatment of Atherosclerosis and Type II Diabetes. J. Du, J.P. Issa, K. Kumar, *Tufts University*

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B307 611.1 Therapeutic Targeting of MLL Degradation Pathways in MLL-Rearranged Leukemia. K. Liang, A.G. Volk, J.S. Haug, S.A. Marshall, A.R. Woodfin, E.T. Bartom, J.M. Gilmore, L. Florens, M.P. Washburn, K.D. Sullivan, J.M. Espinosa, J. Cannova, J. Zhang, E.R. Smith, J.D. Crispino, A. Shilatifard, *Department of Biochemistry and Molecular Genetics, Northwestern University Feinberg School of Medicine, Stowers Institute for Medical Research, Division of Hematology and Oncology, Northwestern University Feinberg School of Medicine, Department of Pathology and Laboratory Medicine, The University of Kansas Medical Center, Linda Crnic Institute for Down Syndrome & Department of Pharmacology, University of Colorado, Oncology Institute, Loyola University Chicago, Department of Pathology, Loyola University Chicago, Robert H. Lurie Comprehensive Cancer Center and Northwestern University Feinberg School of Medicine*

B308 611.2 A Biosensing Soft Robot: Integrating Chemical and Optical Responsive Synthetic Cells with Soft Robotics. K. Justus, D. Lewis, C. Majidi, P. LeDuc, C. Tan, *Carnegie Mellon University, University of California, Davis*

B309 611.3 Lasertherapy After Induction of Myocardial Infarction by Coronary Artery Occlusion in Rats: A Genetic Signature. R.S. Feliciano, M.T. Manchini, E.T. Santana, J.V. Maretti, L.I. Caproni, E. Antonio, A.J. Serra, P.J. Tucci, J.A. Silva Jr, *UNINOVE, Brazil, Universidade Nove de Julho, Brazil and UNIFESP, Brazil*

B310 611.4 Optimization of Reconstituted High Density Lipoprotein (rHDL) Nanoparticles (NPs) for Short-Interfering RNA (siRNA) Delivery. L. Mooberry, N. Sabnis, A. Lacko, *University of North Texas Health Science Center*

B311 611.5 Delivery of siRNA Using Cationic Polymeric Nanoparticles to Understand the Localization and Function of GABAergic Neurotransmission in Planaria. K. Klasen, H. Ginter, S. Shankar, L. Ramakrishnan, *St. Cloud State University*

B312 611.6 Using CRISPR Technology to Edit the F508 Deletion of the Cystic Fibrosis Transmembrane Regulator Gene. K. Heavenor, J. Roecklein-Canfield, *Simmons College*

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B313 612.1 HLA-DQ1 Alpha and Beta Genotypes Associated with Non-Celiac Gluten Sensitivity. M. Maki, D. Caporale, *University of Wisconsin-Stevens Point*

B314 612.2 Molecular Genotyping of Transposable Element Insertions in a Population of Uniform Mu Events. G.A. Arroyo Martinez, N. Springer, *University of Puerto Rico at Ponce and University of Minnesota*

B315 612.3 DC STAMP Domain: Intercompatibility Between SPE-42 and Other Proteins. I.S. Okeke, *University of Alabama at Birmingham*

B316 612.4 Factors That Differentiate Traumatic Brain Injury (TBI) Patients from Post-Traumatic Stress Disorder (PTSD) Patients Among Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Veterans. S. Miller, A. Gautam, N. Chakraborty, B. Sowe, A. Hoke, R. Yang, R. Hammamieh, M. Jett, *The Geneva Foundation, USACEHR and Frederick National Laboratory for Cancer Research*

B317 612.5 Characterization of a Plasmid Isolated from *Enterococcus faecalis* Found in the Fecal Material of a Blue Whale. R. McLaughlin, R. Kopanic, *Gateway Technical College*

B318 612.6 Validation of Single Nucleotide Polymorphisms in *Physcomitrella patens*. K. Adler, K.A. Hicks, *Kenyon College*

B319 612.7 Analysis of the Rates of Transcriptional Coupling and Translational Fusion Between Hydroxylase and Rubredoxin Subunits of Alkane Monooxygenase in Bacterial Genomes. H. Masuda, M. Rikard, P.R. Tupa, *Indiana University Kokomo*

B320 612.8 Unique Transposon Genome Rearrangements Identified in *Elizabethkingia anophelis* Outbreak Strains in the Midwest U.S.. R. Flores, N. Torres, J. Matts, J. Gustafson, P. Canaan, P. Hoyt, *Oklahoma State University*

B321 612.9 Deciphering the Gene Expression Pattern from Human Blood Samples Collected in Multiple Collection Tubes. A. Hoke, A. Gautam, D. Donahue, S. Miller, S. Srinivasan, L. Detwiler, J. Lynch, M. Levangie, B. Sowe, R. Hammamieh, M. Jett, *The Geneva Foundation, USACEHR and U.S. Army Center for Environmental Health Research*

B322 612.10 Using Transcriptomics for Biomarker Discovery Enabling High-Throughput Drug Screening of iPSC-Cardiomyocytes Modeling a Cardiomyopathy. T.J. Rowland, S.I. Hashem, K. Jones, A.J. Bonham, S. Jett, E. Adler, D. LaBarbera, L. Mestroni, M. Taylor, *University of Colorado Denver Anschutz Medical Campus, University of California San Diego and Metropolitan State University of Denver*

B323 612.11 An Investigation of the Oxidatively Damaged Transcriptome in the Human Neuronal Cells. P. Kharel, V. Gadepalli, A. Chattopadhyay, J. McDonough, S. Basu, *Kent State University, Virginia Commonwealth University and University of Pittsburgh*

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B324 613.1 Tox21 Enricher: Web-Based Chemical and Functional Enrichment Analysis Tool for Tox21 Toxicity Screening Platform. J. Hur, L. Danes, D. Krout, J. Hsieh, S. Auerbach, *University of North Dakota and National Institute of Environmental Health Sciences*

B325 613.2 Transcriptional and Translational Effects of Developmental Ethanol on Thyroid Function of Zebrafish. A.J. Holderman, R.C. Lawrence, *Viterbo University*

B326 613.3 Liver and Serum miRNAs in Toxic Liver Fibrosis. M.G. Permenter, D.L. Ippolito, V.A. Trabosh, *Excet at U.S. Army Center for Environmental Health Research and U.S. Army Center for Environmental Health Research*

B327 613.4 High Resolution Melting Analysis for the Study of Single Nucleotide Polymorphisms. G. Beuschel, C. Diez, *Lawrence Technological University*

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B328 614.1 Assessing Social Phenotypes of *M. xanthus* Following Homologous Recombination of Arg-Kinase Genes. M. Grady, D. Fraga, S. Kratt, *College of Wooster*

B329 614.2 CARMA2*sh* and Its Psoriasis-Linked Variants Regulate Inflammatory Pathways in Human Keratinocytes. I. Scudiero, P. Mazzone, G. Telesio, M. Pizzulo, P. Vito, *Biogem S.c.a.r.l., Italy and Università degli Studi del Sannio, Italy*

B330 614.3 Melatonin Modifies Peripheral Blood Cell Oscillators in Humans. E. Kostovski, E. Frigato, A. Dahm, G. Skretting, M. Mowinkel, P.M. Sandset, P.O. Iversen, C. Bertolucci, *Clinical Medicine, University of Oslo, Norway, Sunnaas Rehabilitation Hospital, Norway, University of Ferrara, Italy, Oslo University Hospital, Norway, Akershus University Hospital, Norway and University of Oslo, Norway*

B331 614.4 A Novel Role for Flotillin-1 in H-Ras-Regulated Breast Cancer Aggressiveness. A. Moon, M. Koh, H. Yong, E. Kim, H. Son, Y. Jeon, J. Hwang, M. Kim, Y. Cha, W. Choi, D. Noh, K. Lee, K. Kim, J. Lee, H. Kim, H. Kim, H. Kim, E. Kim, S. Park, H. Kim, W. Moon, H.C. Kim, *Duksung Women's University, Republic of Korea, Konkuk University, Republic of Korea, Seoul National University, Republic of Korea, Inha University, Republic of Korea, Seoul National University Bundang Hospital, Republic of Korea, and Wayne State University*

B332 614.5 Small Size of Membrane-Tethered Ligands Regulates Kinase-Phosphatase Segregation in Gamma/Delta TCR Triggering. K. Choudhuri, *University of Michigan Medical School*

B333 614.6 Multi-Generational Silencing Dynamics Control Cell Aging. N. Hao, Y. Li, M. Jin, R. O'Laughlin, L. Tsimring, L. Pillus, J. Hasty, *University of California San Diego*

B334 614.7 TAK1/TRAF6 Signalling in Regulation of Skeletal Muscle Mass. A. Kumar, S.M. Hindi, *University of Louisville School of Medicine*

B335 614.8 General Amino Acid Control and 14-3-3 Proteins Bmh1/2 Are Required for Nitrogen Catabolite Repression-Sensitive Regulation of Intracellular Gln3 and Gat1 Localization. T.G. Cooper, J.J. Tate, D. Buford, R. Rai, *University of Tennessee Health Science Center*

B336 614.9 Loss of MyoD Transdifferentiate Myoblasts Into Brown Adipocytes. C. Wang, W. Liu, Y. Nie, F. Yue, S. Kuang, *Purdue University*

B337 614.10 Novel Responsibilities for PKA Regulatory Subunits: Regulating Cell Migration Through the Assembly of a P-Rex1-Based Signaling Platform. S.R. Adame García, R.D. Cervantes-Villagrana, A. Castillo-Kauil, L. Chávez-Vargas, S.S. Taylor, G. Reyes-Cruz, J. Vázquez-Prado, *CINVESTAV, Mexico and UCSD*

B338 614.11 MiRNA-21 Mediates the Antiangiogenic Activity of Metformin Through Targeting PTEN and SMAD7 Expression and PI3K/AKT Pathway. M. Luo, X. Tan, Q. Wan, J. Wu, *Drug Discovery Reseach Center, Southwest Medical University, People's Republic of China, University of Missouri, Department of Endocrinology, The First Affiliated Hospital, Southwest Medical University, People's Republic of China*

B339 614.12 Elucidation of Molecular Signaling Battles Between the Eukaryotic Host and a Bacterial Pathogen. K. Orth, M. de Souza Santos, D. Salomon, *HHMI, UT Southwestern Medical Center and UT Southwestern Medical Center*

B340 614.13 Ras1 Phosphorylation and Its Role in Nutrient Signaling. S. Sethupathi, X. Jin, S. Starke, Y. Li, G. Kung, Y. Wang, *Saint Louis University*

B341 614.14 Conditional Loss of *Pten* in Myogenic Progenitors Leads to Postnatal Skeletal Muscle Hypertrophy but Age-Dependent Exhaustion of Satellite Cells. F. Yue, P. Bi, C. Wang, J. Li, X. Liu, S. Kuang, *Purdue University*

B342 614.15 NOSTRIN Regulates Gene Signatures, Pleiotropic Functions and NFκB-TRAF6 Signaling Axis of Endothelial Cells: Implications in Intrauterine Growth Restriction. S. Chakraborty, R. Ain, *CSIR-Indian Institute of Chemical Biology, India*

B343 614.16 Dissecting JADE1 Pathway in the Regulation of Cytokinesis. M.V. Panchenko, B. Shao, *Boston University School of Medicine*

B344 614.17 Nanoparticles Mimic Exosomes and Attenuate Growth Factor-Induced Cell Migration in Melanoma Cells. B.P. Gallant, M. Clark, A. Madigan, Y. Wan, W. Zhang, H. Lu, *Providence College, Guiyang Medical University, People's Republic of China*

B345 614.18 Modulation of MEK/ERK and mTOR Pathways by Na^+-K^+-ATPase and AMPK Inhibitors in Ovarian Cancer Cells. M.P. Clark, A. Madigan, B.P. Gallant, W. Zhang, H. Lu, Y. Wan, *Providence College, Guiyang Medical University, People's Republic of China*

B346 614.19 Activation of the E3 Ligase Cbl by Neutrophil Cathepsin G Impairs CXC Chemokine Receptor 4 Signaling in Cardiomyocyte Degeneration. S. Shukla, K. Sikder, A. Sarkar, W. Liu, K. Rafiq, *Thomas Jefferson University, Shanghai Tenth People's Hospital, People's Republic of China*

B347 614.20 O-GlcNAc Regulates CD4+ T Cell Differentiation. M. Machacek, J. Li, T. Li, C. Slawson, P. Fields, *University of Kansas Medical Center*

B348 614.21 Disruption of the Cereblon Gene Prevents Bleomycin-Induced Pulmonary Fibrosis in Mice. K. Lee, Y. Koo, C. Lee, C. Yoo, *Seoul National University Hospital, Republic of Korea*

B349 614.22 Determining the Link Between Mammalian p38 Stress Kinase Pathway and Peroxisomes. R. Singh, C. Chrestensen, *Kennesaw State University*

B350 614.23 Exosomes-Mediated mTOR Activation Is Involved in Ovarian Cancer Cell Aggression and Migration. A.P. Madigan, B. Gallant, M. Clark, Y. Wan, W. Zhang, H. Lu, *Providence College, Guiyang Medical University, People's Republic of China*

B351 614.24 A Filamin Phosphorylation Gateway to GPCR Function. S. Ithychanda, K. Dou, S. Karnik, J. Qin, *Cleveland Clinic*

B352 614.25 Chronic Low-Grade Inflammation in Obesity and Diabetes Associated Colorectal Cancer Development. N. Kumar, J. Mishra, P. Kumar, *Texas A&M University*

B353 614.26 An Investigation of Sex Difference in Microglia Morphology and Function. J. Lawrence, A. Turano, J. Schwarz, *University of Delaware*

B354 614.27 The Yeast Claudin Dcv1 Is Essential for the Maintenance of Distinct Membrane Domains and Polarized Mating Functions. M.E. Sukumar, D.E. Stone, *University of Illinois at Chicago*

B355 614.28 *PASsing* on Signals: Activation of PAS Kinase by mTOR Orchestrates Epigenetic Processes of Stem Cell Differentiation. C.K. Kikani, X. Wu, J. Rutter, *University of Utah School of Medicine*

B356 614.29 The Effect of Proline Rich Tyrosine Kinase 2 Activity on the Na^+-H^+ Exchanger Isoform 1 Regulation of Cell Proliferation and Migration. K.P. Bagnell, J.J. Provost, M.A. Wallert, *Bemidji State University and University of San Diego*

B357 614.30 The Phosphorylation of the Na^+-H^+ Exchanger Isoform 1 (NHE1) and Its Role in the Regulation of Cell Proliferation and Migration. T.M. Smith, J.J. Provost, M.A. Wallert, *Bemidji State University and University of San Diego*

B358 614.31 Signaling and Secretion of Chemotactic Factors Regulated by Calcium-Sensing-Receptor Mutants Found in Breast Cancer Patients. L.B. Orduña, J.J. Hidalgo-Moyle, J. Vázquez-Prado, G. Reyes-Cruz, *CINVESTAV, Mexico*

B359 614.32 mTORC1 Balances Cellular Amino Acid Supply with Demand for Protein Synthesis Through Post-Transcriptional Control of ATF4. C.C. Thoreen, Y. Park, *Yale School of Medicine*

B360 614.33 Encoding the Human Phosphoproteome in an Engineered Bacterial System. K. Barber, J. Rinehart, *Yale University*

B361 614.34 The Dynamics of an Infrared Light-Activated Adenylyl Cyclase During the Manipulation of Behavior in *Caenhorabditis elegans*. M. Szurgot, F.M. Janton, M. Nelson, *Saint Joseph's University*

B362 614.35 Structure of the Two-Component Response Regulator RcsB-DNA Complex. E.V. Filippova, B. Zemaitaitis, A.J. Wolfe, W.F. Anderson, *Northwestern University Feinberg School of Medicine and Loyola University Chicago Stritch School of Medicine*

B363 614.36 G Protein-Coupled Estrogen Receptor (GPER)-Mediated Relaxation of Coronary Arteries Is Mitigated by Phosphorylation of ERK1/2 R.C. Harlow, X. Yu, B.P. Kotaki, J.N. Stallone, C.L. Heaps, G. Han, *Texas A&M University and Michael E. DeBakey Institute*

B364 614.37 Novel Genetic Variants in the Oxytocin Receptor Predict Oxytocin Non-Responsiveness in Pregnant Women. G.Y. Lee, N. Raghuraman, E.L. Reinl, S.K. England, *Washington University in St. Louis and Washington University School of Medicine*

B365 614.38 Wnt and Ca^{2+} Signalling Changes in LRRK2 Parkinson's Disease Models. K. Harvey, A. Wetzel, M. Hughes, T. McKay, S. Waddington, A. Rahim, *University College London, United Kingdom and Manchester Metropolitan University, United Kingdom*

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B367 615.2 Role of MAPKs and NFκB in Tributyltin-Stimulated Interleukin 1 Beta Secretion and Production from Human Immune Cells. M. Boules, S. Brown, M. Whalen, *Tennessee State University*

B368 615.3 Involvement of MAPK Signaling Pathways in Tributyltin-Induced Increases of Interleukin 1 Beta and Interleukin 6 mRNA in Human Lymphocytes. S.D. Brown, M. Boules, N. Hamza, M. Whalen, *Tennessee State University*

B369 615.4 Methionine Sulfoximine Reduces Proinflammatory Cytokine Release by Murine Macrophages. T. Peters, A. Jambekar, W. Brusilow, *Wayne State University*

B370 615.5 A Single EGF Molecule Activates a Preformed EGFR Dimer: A Single-Molecule Multi-Color TIRF Microscopy Study. E. Saita, D. Mong, I.N. Maruyama, *OIST, Japan*

B371 615.6 Pentabromophenol, a Brominated Flame Retardant Derivate, Suppresses TGF-β Signaling by Sequester TGF-β Receptor from Cell Surface and Further Degradation Through a Caveolae-Mediated Endocytosis. P. Yang, C. Chen, *National Sun Yat-sen University, Taiwan*

B372 615.7 Skeletal Muscle-Derived Cytokines Regulate Myogenesis by Modulating Cell Cycle Withdrawal. D. Kim, N. Singh, J. Chen, *University of Illinois at Urbana Champaign*

B373 615.8 Epidermal Growth Factor Receptor Family Signaling in the Regenerating Axolotl Lung. T.B. Jensen, P. Giunta, N.G. Schultz, H. Wong, J. Monaghan, *Northeastern University*

B374 615.9 Differential Activation of Class I Phosphoinositide 3-Kinase by Growth Factors. D. Ghosh, S.-L. Liu, P. Cho, *University of Illinois at Chicago*

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B375 616.1 A Novel Interaction Between β-Arrestins and Nuclear Steroid Receptors. M.G. Petrillo, J.A. Cidlowski, *NIH/NIEHS*

B376 616.2 Steroid Hormone Receptor Gene Expression as a Marker for Phenothiazine Induced Endocrine Disruption and Stress in Mummichog, *Fundulus heteroclitus*. J.M. Laperche, J.B. Chiari, R. Patel, C.L. McGinnis, *Quinnipiac University*

B377 616.3 Glucocorticoid-Driven Transcriptomes in Airway Epithelial Cell Models: Commonalities, Differences and Functional Insights. M.M. Mostafa, C.F. Rider, R. Newton, *University of Calgary, Canada and University of British Columbia, Canada*

B378 616.4 Bile Acid Binding Protein STARD5 Suppresses Doxorubicin-Mediated Apoptosis in H1792 Lung Adenocarcinoma Cells. B.J. Clark, S.M. Dougherty, B.G. Hill, C.M. Klinge, *University of Louisville School of Medicine*

B379 616.5 Endogenous Ligand for Orphan Nuclear Receptor NR2E3 Forms a Light-Sensitive Retinal Transcription System. B. Connor, Y. Lee, *Johns Hopkins University*

B380 616.6 Examining the Effects of Aldosterone on Putative Target Genes in Mouse Collecting Duct Cells. B. Nolan, K. Solocinski, M.L. Gumz, D. Zies, *University of Mary Washington and University of Florida*

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B381 617.1 Unraveling White Lupin's Signal Transduction in Response to Phosphorus Deficiency Using iTRAQ Labeling, Phosphopeptide Enrichment, and Tandem Mass Spectrometry. M. Amadi, J. Cole, K. Li, R.J. Chalkley, A. Burlingame, C. Uhde-Stone, *California State University East Bay, University of California, San Francisco*

B382 617.2 Cracking the Interorganellar Communication Codes. A.J. de Souza, J. Svozil, J. Wang, H. Ke, Y. Xiao, W. Gruissem, K. Dehesh, *UC Riverside, ETH Zurich, Switzerland and UC Davis*

B383 617.3 Expression of E3-Ubiquitin Ligase Genes in *P. patens* During Sexual Reproduction. E.W. Abrash, K.A. Hicks, *Kenyon College*

B384 617.4 Identification of a Novel Gene in the Shade Avoidance Response in Plants. N. Wershoven, E. Giddings, A.E. Clark, C. Palmer, *Castleton University*

B385 617.5 Phosphatidic Acid-Protein Phosphatase 2A Interactions Regulate Haloptropic Bending in Rice. E. Han, D. Petrella, J. Lin, A. DeLong, J.J. Blakeslee, *The Ohio State University and Brown University*

B386 617.6 Characterizing of the Novel Gene *At4g33666* in the Abiotic Stress Response in *Arabidopsis*. A.E. Miller Clark, N. Wershoven, C. Palmer, *Castleton University*

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B387 618.1 Thrombomodulin Promotes Cell Adhesion and Migration and Enhances Angiogenesis Through Interaction with Fibronectin. H. Wu, Y. Hsu, G. Shi, *National Cheng Kung University, Taiwan*

B388 618.2 Biliary Epithelial Cell and Macrophage Cross-Talk Is Important to Cyst Progression M.C. Munteanu, P. Sivasami, B. Ferencz, R.S. Mansat, N. Poudel, T. Watnick, F. Lupu, M. Hinsdale, *Oklahoma State University, Oklahoma Medical Research Foundation and University of Maryland School of Medicine*

B389 618.3 Structural and Functional Insights Into the Latrophilin3-FLRT3-UNC5D Complex That Mediates Glutamatergic Synapse Development. F. Ranaivoson, S. Ozgul, S. Kakehi, V. Jackson, F. Martini, F. Bergami, S. von Daake, E. Seiradake, D. Comoletti, *CHINJ, RWJMS, Rutgers University and University of Oxford, United Kingdom*

B390 618.4 Controlled BMP2 Release from Keratin-Based Hydrogels Modulates Osteoinduction. L.C. Olson, S.L. Hyzy, J.M. Saul, D.J. Cohen, I. Kajan, Z. Schwartz, B.D. Boyan, *Virginia Commonwealth University, Miami University, University of Texas Health Science Center at San Antonio and Georgia Institute of Technology*

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G Proteins and Small Gtpases

B391 619.1 Bioluminescent Assay for GTPases Allows Measurement of GTPase, GAP, and GEF Activities S. Mondal, K. Hsiao, S. Goueli, *Promega Corporation*

B392 619.2 Antidepressant Treatment Increases cAMP Signaling by Translocating Ga_s from Lipid Rafts and Increasing Association with Type 6 Adenylyl Cyclase (AC6) Independent of Action at Monoamine Transporters. J.M. Schappi, M. Rasenick, *University of Illinois at Chicago*

B393 619.3 DAPLE Links Heterotrimeric G Proteins to Wnt Signaling During Vertebrate Development. A. Marivin, V. DiGiacomo, A. Leyme, M. Garcia-Marcos, *Boston University School of Medicine*

B394 619.4 Translocation of the Non-Receptor Protein GIV/Girdin to the Plasma Membrane Activates Heterotrimeric G Proteins A. Leyme, K. Parag-Sharma, V. DiGiacomo, A. Marivin, S. Broselid, M. Garcia-Marcos, *Boston University*

B395 619.5 Cloning of Novel Leukocytic X5 ARHGEF18 Proteoform for Functional Characterization. H.M. Schira, K.B. Turton, D.S. Annis, D.F. Mosher, *Univeristy of Wisconsin-Madison*

B396 619.6 Structural and Functional Studies of the Metastatic Factors P-Rex1 and P-Rex2: Toward Small Molecule Inhibitor Development. P. Sharma, E.M. Davis, J. Cash, J.J. Tesmer, *University of Michigan*

B397 619.7 Cardiovascular Development Defects Produced by Combined Loss of RGS6 and Oxidizable CaMKII Due to Defective Notch Signaling. B. Chakravarti, J. Yang, . Ahlers, Z. Luo, H.A. Flaherty, D. Meyerholz, M.E. Anderson, R.A. Fisher, *University of Iowa, Iowa State University and Johns Hopkins University School of Medicine*

B398 619.8 Structure of a GEM-Complexed Gai Protein Provides Novel Insights Into the Emerging Human GEMiome. I. Kufareva, N. Kalogriopoulos, S.D. Rees, N. Sun, N. Aznar, G. Chang, P. Ghosh, *University of California, San Diego*

B399 619.9 Dissecting the Roles of ARHGEFs in Eosinophil Polarization F. Botros, K. Turton, D. Mosher, *University of Wisconsin Madison*

B400 619.10 Inhibition of Constitutively Active $G_s\alpha$ by Molecules Targeted at R231. M. Schumacher, J. Carroll, S.D. Anderson, P. Santos, Y. Thu, H. Nguyen, K. Bohlen, M. Poch, B.T. Andresen, R.P. Rylaarsdam, *Benedictine University and Western University of Health Sciences*

B401 619.11 Determinants in the C-Terminal Region of Gα12 and Gα13 Allow Distinct Mechanisms of Cell Growth Signaling. T.L. Fleming, T.E. Meigs, *University of North Carolina Asheville*

B402 619.12 ER/K Linked GPCR-G Protein Fusions Systematically Modulate Second Messenger Response in Cells. M. Dysthe, R.U. Malik, M. Ritt, R.K. Sunahara, S. Sivaramakrishnan, *University of Minnesota, Twin Cities, University of Michigan, University of California, San Diego*

B403 619.13 Identification of Endothelial Cell Specific RhoGAPs That Influence TCL Activation and Localization. R.R. Florke, M.J. Hamann, *Bemidji State University*

B404 619.14 Investigation of TCL/RhoJ Palmitoylation and Its Effects on Cellular Localization. A. Franzen, C. Dague, B. Tader, R.R. Florke, M.J. Hamann, *Bemidji State University*

B405 619.15 Kinetic Analyses on the Binding of the RhoGEF P-Rex1 by Gβγ and Potential Small Molecule Inhibitors. M. Shost, J. Cash, J. Tesmer, *University of Michigan*

B406 619.16 The Molecular Mechanisms of Prostaglandin E2 Receptor 3 and Its Associated G Protein, G_z, in the Pancreatic β-Cell. M.D. Schaid, J. Wisinski, E. Laudre, M. Kimple, *University of Wisconsin-Madison*

B407 619.17 Finding the Differential Interactome of Active vs Inactive Small Molecular Weight GTPases. T. Peterson, R.C. Piper, *University of Iowa*

B408 619.18 Determining the Structure of Oncogenic NRas Mutants. M. Ojeda, D. Reid, C. Mattos, *Agnes Scott College and Northeastern University*

B409 619.19 The C-Terminal Tail of TCL Localizes the GTPase to the Plasma Membrane of HeLa Cells. B. Tader, R.R. Florke, M.J. Hamann, *Bemidji State University*

B410 619.20 Investigating the Influence of the Rho-Family GTPase TCL/RhoJ on Vesicular Trafficking. T. Olson, S. Taylor, M.J. Hamann, *Bemidji State University*

B411 619.21 GTP-Loading Activity of TC10/TCL Chimeras Underscores Important Allosteric Regulatory Regions of TCL. G. Young, R.R. Florke, M.J. Hamann, *Bemidji State University*

B412 619.22 Transition State Mimic of Intrinsic Hydrolysis in Ras GTPase. A.Y. Ortiz, *Northeastern University*

B413 619.23 The Golgi Arf-GEFs Gea1 and Gea2 Integrate Signals to Coordinate Vesicle Formation. M.A. Gustafson, J. Fromme, *Cornell University*

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Microbial Systems and Parasitology

B414 620.1 Variants in the Toll-Interacting Protein Gene (rs5743899) and Susceptibility to *Plasmodium falciparum* Malaria Infection in West Africa. I. Farid, R.I. Funwei, S. Agyingi, T. Snyder, C. Falade, O. Ojurongbe, B.N. Thomas, *Rochester Institute of Technology and Ladoke Akintola University of Technology, Nigeria*

B415 620.2 Functional Characterization of Apically Localized Calmodulins That Regulate Motility and Cell Invasion in *Toxoplasma gondii*. S. Long, *Washington University in St Louis*

B416 620.3 Development of an Improved *in Vitro* Culture System for *Cryptosporidium parvum*. G. Wilke, L. Funkhouser-Jones, S. Ravindran, M. Kuhlenschmidt, T. Stappenbeck, L.D. Sibley, *Washington University in St. Louis and University of Illinois*

B417 620.4 Characterization and Partial Purification of an Inhibitory Factor Secreted by *Bacillus anthracis* and *Aeromonas jandaei*. J. McCartney, J. Nesemeier, N. Peterson, *North Central College*

621
Bacterial Communication

B418 621.1 Recognition and Selectivity of Peptide Pheromones by ComR in the Regulation of Natural Competence Among *Streptococcus* Species. G. Prehna, E. Shanker, D.A. Morrison, A. Talagas, S. Nessler, M.J. Federle, *University of Illinois at Chicago and University of Paris-Sud, France*

B419 621.2 Construction of a System for the Study of Protein-Induced Membrane Tubules A. González Rivera, K.T. Forest, *University of Wisconsin-Madison*

B420 621.3 δ-Lactone Derivatives Induce Quorum Sensing Activity in *Agrobacterium tumefaciens*. D.A. Ewald, A.K. Champion, M.R. Fry, *Bradley University*

622
Microbe-Host Interactions

B421 622.1 Regulation of Inflammation, Innate Immunity and Intestinal Homeostasis by HOIL1. D.A. MacDuff, T.A. Reese, M.T. Baldridge, J.M. Kimmey, L.A. Weiss, C. Song, T.J. Nice, J. Carrero, M. Colonna, B.T. Edelson, D. Sibley, C.L. Stallings, J. Casanova, K. Iwai, S. Virgin, *University of Illinois at Chicago, University of Texas - Southwestern, Washington University in St Louis, Oregon Health and Sciences University, The Rockefeller University and Kyoto University, Japan*

B422 622.2 Investigation Into a Cell-Density Dependent Pathway in *Aerococcus urinae*. E.E. Hilt, T.M. Halverson, K.L. Visick, A.J. Wolfe, *Loyola University Chicago*

B423 622.3 Collagen Mimetic Peptides as Probes for Bacterial Infection. A. Ellison, F. Dempwolff, D. Kearns, R. Raines, *University of Wisconsin-Madison and Indiana University*

B424 622.4 Metabolic Stress Drives Keratinocyte Defenses Against *Staphylococcus aureus* Infection. M.A. Wickersham, S. Wachtel, T. Wong Fok Lung, R. Jacquet, G. Soong, A. Richardson, D. Parker, A. Prince, *Columbia University and University of Pittsburgh*

B425 622.5 RRSP Exhibits Novel Proteolytic Activity. M. Lam, M. Biancucci, K.J. Satchell, *Northwestern University and Northwestern University Feinberg School of Medicine*

B426 622.6 Probiotic *Escherichia coli* Nissle 1917 Uses Zinc Transporters and the Siderophore Yersiniabactin to Acquire Zinc in the Inflamed Gut and Outcompete *Salmonella typhimurium*. J. Behnsen, J. Liu, M. Valeri, E. Hoover, J. Tjokrosurjo, N.P. Montaldo, S. Treacy-Abarca, O. Garibay, B.A. Gilston, R.A. Edwards, W. Chazin, E.P. Skaar, M. Raffatellu, *University of California, Irvine, University of Illinois at Chicago, College of Medicine and Vanderbilt University*

B427 622.7 Yersiniabactin Is a Recyclable Copper Importer in Pathogenic *E. coli*. A.E. Robinson, E. Koh, N. Bandara, B.E. Rogers, J.P. Henderson, *Washington University*

B428 622.8 Investigation of Controlled Expression of MS2 Lysis Protein. K.A. Rasefske, A.J. Piefer, *Hartwick College*

B429 622.9 Metabolic Immunomodulation of Macrophage Polarization by *Pseudomonas aeruginosa* Biofilms. M.B. Ammons, A.L. Fuchs, B.P. Tripet, V. Copie, *Montana State University*

B430 622.10 Relationship of Vpx and APOBEC3A. J. Rachuy, R. Moen, A. Land, *Minnesota State University, Mankato*

B431 622.11 Effects of Curcumin on Vesicular Stomatitis Virus (VSV) Infection and *Dicer-1* Expression. J. Ahmed, Y. Tan, S. Ambegaokar, *Ohio Wesleyan University*

B432 622.12 A New Link Between Stress and Infection. N. Sule, S. Pasupuleti, N. Kohli, R. Menon, L. Dangott, M. Manson, A. Jayaraman, *Texas A&M University and Texas A&M Health Science Center*

B433 622.13 Isolating and Characterizing Predatory Bacteria from the Built Environment. L.C. Zappia, L.E. Williams, *Providence College*

B434 622.14 *Escherichia coli* tRNA Induces Mammalian Cell Migration and Socialization. A.K. Buechler, H. Zhao, D.J. Lieu, S.R. Blanke, S.A. Martinis, *University of Illinois at Urbana-Champaign*

B435 622.15 Subversion of Host Vesicular Trafficking by Phosphoinositide-Binding Bacterial Proteins. C. Pike, S. Lein, R. Neunuebel, *University of Delaware*

623
Plant-Microbe Interactions

B436 623.1 Photosynthetic Apparatus and Biochemical Parameters in Tomato and Squash Crops Influenced by Cucumber Mosaic Virus (CMV) Infection. M.S. Montasser, N.Y. Nayef, M. Afzal, *University of Kuwait, Kuwait*

B437 623.2 Metagenomic Analysis of Bacterial Communities in the Rhizosphere of Leguminous Crops and Trees. C. Ahrenhoerster, G. Prasad, B. Martinez-Vaz, *Hamline University and University of Wisconsin- Milwaukee*

B438 623.3 Structural Basis for Regulation of Rhizobial Nodulation and Symbiosis Gene Expression by the Regulatory Protein NolR. S. Lee, J. Jez, *Washington University in St. Louis*

B439 623.4 Chemical and Genetic Analysis of Hopped Meads J.R. Halmo, M.J. Wolyniak, P.H. Mueller, *Hampden-Sydney College*

B440 623.5 Analysis of Bacterial Micro-Biome on Potato Tubers Treated with Sprout Regulator 1,4-Dimethylnaphthalene. R.A. Diaz, R.N. Patel, M.A. Campbell, *Penn State Behrend*

B441 623.6 Characterization of a Double Deletion Mutant of *Fusarium verticillioide*s Lacking Two Putative Trehalose-6-Phosphate Phosphatase Genes B. McFarlin, E.S. Roberts, E.E. Remsen, C.M. McGovern, D.W. Brown, K.L. McQuade, *Bradley University and USDA-ARS-NCAUR*

B442 623.7 Isolation of Bio Energy Crop Phyllosphere Bacteria from Switchgrass. M.A. Sleda, K. Grady, K. O'Brien, A. Bennett, A. Shade, *Lawrence Technological University and Michigan State University*

B443 623.8 Expression and Purification of a Novel Calcium Binding Protein Necessary for Phytopathogenesis in *Xanthomonas* Strain. K.M. Margin, J.C. Quay, G.V. Minsavage, J.B. Jones, J.C. Hurlbert, *Winthrop University and University of Florida*

B444 623.9 The Characterization of *Septoria lycopersici* Pathogenicity in Micro Tom Tomatoes. K.E. Allen, J. Zwiesler-Vollick, *Lawrence Technological University*

624
Metabolism and Bioenergetics

B445 624.1 Response of the Energetic Metabolism of Saccharomyces cerevisia to Different Nutritional Conditions of Carbon and Nitrogen. I.K. Olivares-Marin, L.A. Madrigal-Pérez, M. Canizal-Garcia, J.C. González-Hernández, C. Regalado-González, *Universidad Autónoma de Querétaro, Mexico, Instituto Tecnológico Superior de Ciudad Hidalgo, Mexico and Instituto Tecnológico de Morelia, Mexico*

B446 624.2 Cardiac Myocyte KLF5 Regulates Adiposity via Alteration of Cardiac FGF21. C.J. Pol, N.M. Pollak, M.J. Jurczak, I. Karagiannides, P. Ntziachristos, D.A. Scerbo, I. Aifantis, G.I. Shulman, I.J. Goldberg, K. Drosatos, *LKSM Temple University, University of Graz, Austria, Yale University School of Medicine, David Geffen School of Medicine at UCLA, NYU School of Medicine, Columbia University and NYU-Langone School of Medicine*

B447 624.3 Decreased Insulin Signaling Causes Loss of PFK-2 and Impaired Glycolysis in the Heart K. Humphries, L. Bockus, C. Eyster, *Oklahoma Medical Research Foundation*

B448 624.4 Protein Modifying Enzyme Ate1 Controls Cellular Warburg Effects. C. Jiang, M. Birnbaum, D. Patel, A. Kumar, W. Morgan, T. Lampidis, F. Fontanesi, A. Barrientos, F. Zhang, *Miller School of Medicine and University of Miami*

B449 624.5 UCP1 Is Essential for Mitochondrial Structural Integrity and Function in Brown Adipose Tissue. C.L. Riley, C. Bean, D. Boutz, S. Kohno, G. Tioli, M. Genova, L. Scorrano, E.L. Mills, *University of Texas Austin, University of Padova, Italy, University of Colorado Denver and University of Bologna, Italy*

B450 624.6 Genetic and Functional Characterization of the Enzymes of Nicotinic Acid Degradation in *Bacillus niacini*. T. To, M.J. Snider, *The College of Wooster*

B451 624.7 Enhanced Spare Respiratory Capacity in Extremophile Fish Following Exposure to Hydrogen Sulfide C.R. Henpita, M. Tobler, J.H. Shaw, *Oklahoma State University and Kansas State University*

B452 624.8 Knockout of p53 Decreases Cardiac Injury by Reducing Ros Generation During Ischemia-Reperfusion. E. Lesnefsky, J. Thompson, Y. Hu, Q. Chen, *McGuire VAMC and Pauley Heart Center-VCU*

625
Metabolic Networks and Regulation

B453 625.1 Hepatic Fat Accumulation Regulates Carnitine Palmitoyltransferase I (Cpt1a) Expression Through Coordinated Epigenetic Mechanisms. L. Moody, P.M. Jung, A. Kriska, H. Chen, Y. Pan, *University of Illinois Urbana Champaign*

B454 625.2 Administration of Naoxintong to *db/db* Mice Inhibits the Development of Diabetic Nephropathy. S. Yang, M. Liu, P. Su, J. Han, *Nankai University, People's Republic of China*

B455 625.3 The Chemical Biology of Cellular Iron Pools in Prokaryotes. F. Outten, N. Bolaji, J. Wofford, P. Lindahl, *University of South Carolina and Texas A&M University*

B456 625.4 Gene and Protein Profiling of Effects of Tart Cherry Anthocyanins in Preadipocytes. S.H. Jayarathne, S. Scoggin, K. Claycombe, R. Kottapalli, M. Zabet, R. Bhawal, N. Moustaid-Moussa, *Texas Tech University and USDA ARS*

626
Amino Acid Metabolism

B457 626.1 Identifying a Source of Beta-Alanine and Its Broader Implications in *Arabidopsis thaliana* by GC/MS. M. Perrett, M. Gothard, A. Ludwig, K.A. Rouhier, *Kenyon College*

B458 626.2 Glutaminase Acts in Osteoblasts to Regulate Bone Formation. C.M. Karner, Y. Yu, J. Tang, *Duke University*

B459 **626.3** Comparison of the Influence of Pre-Exercise BCAA Supplementation on Serum HMB Level Between Endurance and Resistance Exercises. T. Miyazaki, S. Ra, K. Ishikura, H. Ohmori, T. Ikegami, Y. Matsuzaki, A. Honda, *Tokyo Medical University Ibaraki Medical Center, Japan, Fukuoka University, Japan, Sojo University, Japan and University of Tsukuba, Japan*

B460 **626.4** Identification of NADPH-Dependent Glutamate Dehydrogenase in *Yarrowia lipolytica*. K. Nelson, K. Juco, L. Tamayo, J. Nicaud, P.J. Trotter, *Augustana College, INRA and AgroParisTech, France*

B461 **626.5** Time-Resolved Analysis of Amino Acid Deprivation Responses Reveals Dynamic Relationship Between GCN2 and mTORC1. I.A. Nikonorova, M.P. Goudie, E.T. Mirek, Y. Wang, T.G. Anthony, *Rutgers, The State University of New Jersey and Center for Health and Human Performance*

B462 **626.6** Hormonal Regulation of Glycine Metabolism and Its Potential Role in Diabetes Susceptibility. R. Jog, J. Wang, T. Leff, *Wayne State University*

B463 **626.7** Kinetic Characterization of 3-Hydroxyisobutyrate Dehydrogenase from *Arabidopsis thaliana*. C. Binkley, M. McCool, T. Maurer, K.A. Rouhier, *Kenyon College*

B464 **626.8** Cloning and Characterization of Putative Histidinol-Phosphatase Not Called by Machine Annotation. S. Ellis, *St. Cloud State University*

B465 **626.9** Subtle Defects of Four Homocystinuric Variants of Human Cystathionine β-Synthase. J.P. Hines, Y. Su, A.T. Smith, J.N. Burstyn, *University of Wisconsin-Madison, University of Maryland, Baltimore County*

627
Nucleotide Metabolism

B466 **627.1** Purine Salvage Drives the Efficacy of an Adenosine Analog Inhibitor of *Leishmania* RNA Virus 1 (LRV1). J.I. Robinson, F.M. Kuhlmann, S.M. Beverley, *Washington University School of Medicine*

628
Plant Metabolism and Biosynthetic Pathways

B467 **628.1** Linking the Cytosolic Phenylalanine Pathway and the Auxin Biosynthetic Pathway. A. Garcia, Y. Qian, J. Lynch, N. Dudareva, *Tennessee State University and Purdue University*

B468 **628.2** Biosynthesis of Granatane Alkaloids in *Punica granatum*. B.G. Chavez, L. De-Vries, K. Galloway, J. D'Auria, *Texas Tech University*

B469 **628.3** Engineering Biochemical Bypass to Photorespiration to Improve Photosynthesis and Crop Production. P. South, D.R. Ort, *USDA-ARS / University of Illinois and USDA-ARS*

B470 **628.4** Molecular Basis of TyrA Substrate Specificity Underlying the Evolution of Alternative Tyrosine Biosynthetic Pathways. C. Schenck, C. Holland, M. Schneider, J. Jez, H. Maeda, *University of Wisconsin-Madison and Washington University in St. Louis*

B471 **628.5** Does Sensitivity to FACs Result in Higher Resistance Against Herbivory?. A. Conner, L. Grisset, J. Stratmann, *University of South Carolina*

B472 **628.6** cDNA Cloning and Characterization of UDP-Glucosyltransferase from *Indigofera tinctoria*. S. Inoue, R. Morita, S.T. Thul, B.K. Sarangi, Y. Minami, *Okayama University of Science, Japan and CSIR-NEERI, India*

B473 **628.7** Tyrosine Biosynthesis Revisited: Characterization of Novel Arogenate Dehydrogenases from Legumes. M.R. Schneider, C.A. Schenck, C.K. Holland, J.M. Jez, H.A. Maeda, *University of Wisconsin-Madison and Washington University in St. Louis*

B474 **628.8** A Study of the Exchangeable Protons in the Q_A Site of Photosystem II. A. Garmany, Z.D. Runyon, D.S. Kinzer, S. Dikanov, D.R. Kolling, *Marshall University and University of Illinois at Urbana–Champaign*

B475 **628.9** Characterization of Mutant Sunflower Acetoacetyl CoA Thiolase. J. Dyer, *Montclair State University*

B476 **628.10** Identifying the Metal That Activates the Prenyltransferase That Catalyzes Formation of Geranyl Diphosphate in the Diatom *Pseudo-nitzschia multiseries*. H. Tran, T. Savage, *California State University Sacramento*

B477 **628.11** Understanding Plant Energy Sensing and Homeostasis. S. Williams, J. Yen, G. Gillaspy, *Virginia Tech*

B478 **628.12** Withdrawn.

629
Lipids and Membranes

B479 **629.1** Independent Measurements of Lipids in Mixed Cell Populations. A. Stoeckman, K. Estrada, N. Wolins, *Bethel University and Washington University*

B480 **629.2** Structure of Human Niemann-Pick C1 (NPC1) Protein and NPC1-NPC2 Complex. X. Li, *Rockefeller Univeristy*

B481 **629.3** Monitoring Live Cell Membrane Lipid Encounter Dynamics with DNA Probe. M. You, *UMass Amherst*

B482 **629.4** OlyA— A Tool to Study Sphingomyelin-Cholesterol Interactions in Plasma Membranes. S. Endapally, A. Radhakrishnan, *UT Southwestern Medical Center*

B483 **629.5** Role of Na-H Exchanger-2 in Experimental Colitis: Mechanism of Regulation of Expression. I. Khan, A.A. Soleiman, F. Thameem, *Kuwait University, Kuwait*

B484 **629.6** Repurposing P-Glycoprotein Inhibitors as Modifiers of Sphingolipid Metabolism—Therapeutic Implications in Cancer. M.C. Cabot, *East Carolina University and Brody School of Medicine*

B485 **629.7** A Common Tale of Substrate Recognition: From Antibiotic Resistance to Neurotransmitter Transport. D. Yaffe, A. Vergara-Jaque, L.R. Forrest, S. Schuldiner, *Hebrew University, Israel and National Institutes of Health*

B486 **629.8** Different Lipids in Synaptic Vesicle and Synaptosome Membrane. K.T. Lewis, K.R. Maddipati, A.R. Naik, B.P. Jena, *Wayne State University*

B487 **629.9** Control of PI4P Turnover by Endogenous OSBP for Fast Cholesterol Transport at Membrane Contact Sites. B. Mesmin, J. Bigay, J. Polidori, S. Lacas-Gervais, B. Antonny, *Institut de Pharmacologie Moléculaire et Cellulaire - CNRS, France and Université Nice Sophia Antipolis, France*

B488 **629.10** Lipoprotein Lipase Regulates the Expression of Genes Responsible for Cellular Cholesterol Uptake and Efflux in Human and Mouse Macrophages. K. Moctar, K.R. Madhwani, A.J. Kim, J.D. Medh, *California State University Northridge*

B489 **629.11** Cardiolipin Content Has a Stronger Influence Than Acyl Chain Composition on Select Membrane Properties of Biomimetic Mitochondrial Membranes. E.R. Pennington, A. Fix, E.M. Sullivan, A. Kennedy, D.A. Brown, T.N. Zeczycki, S.R. Shaikh, *East Carolina University, Brody School of Medicine, East Carolina Diabetes and Obesity Institute, East Carolina University, East Carolina University and Virginia Tech Corporate Research Center*

B490 **629.12** Lysosome Enlargement in PIKfyve Inhibited Cells Proceeds Through Homotypic Lysosome Fusion Rather Than Growth of Individual Lysosomes. G. Saffi, *Ryerson University, Canada*

B491 **629.13** Characterization of Kinetic Parameters of the Lysophospholipase PldB Using a Liquid Chromatography Mass Spectrometry Based *in Vitro* Assay. G. Elizalde, T.A. Garrett, *Vassar College*

B492 **629.14** Impact of Altering the Headgroup-Acylated Glycerophospholipid Levels on *Escherichia coli* Cells Deficient in Phosphatidylserine and Phosphatidylethanolamine. O. Oke, T.A. Garrett, *Vassar College*

B493 **629.15** Styrene-Maleic Acid (SMA) Nanodisc Technology: A Novel Approach for Isolation and Purification of the Infectious Prion Protein (PrP^{Sc}). M. Esmaili, X. Wang, B. Tancowny, H. Wille, M. Overduin, *University of Alberta, Canada*

B494 **629.16** Tracking the Flow of Carbon Toward Oil Synthesis in an Emerging Crop Lesquerella (*Physaria fendleri*). J. Cocuron, E. Tsogtbaatar, A. Alonso, *The Ohio State University*

B495 **629.17** Stereochemical Characterization of Acyl-Phosphatidylglycerol and *bis*-(Monoacylglycerol)Phosphate Using Nuclear Magnetic Resonance. C.S. Peros, T.A. Garrett, *Vassar College*

B496 **629.18** Withdrawn.

B497 **629.19** Modulation of Endothelial Membrane Biomechanics by Oxidized Phospholipids: A Combined Experimental and Computational Approach. M.A. Ayee, E. LeMaster, T. Shentu, N. Barbera, B.S. Akpa, I. Levitan, *University of Illinois at Chicago and North Carolina State University*

B498 **629.20** Probing the Lipid Composition at the Site of Influenza Virus Assembly and Budding with High-Resolution SIMS. M.L. Kraft, A.N. Yeager, P.K. Weber, J. Zimmerberg, *University of Illinois at Urbana-Champaign, Lawrence Livermore National Laboratory, National Institute of Child Health and Human Development, National Institutes of Health and Eunice Kennedy Shriver National Institute of Child Health and Human Development*

B499 **629.21** Phosphorylation of the Glycerol 3-Phosphate Acyltransferase Gpt2 Regulates the Timing of TAG Mobilization upon Growth Resumption. M. Tavassoli, B. Nagler, B. Shabits, A. Lopez-Villalobos, K. Athenstaedt, V. Zaremberg, *University of Calgary, Canada, and Institute of Molecular Biosciences, Austria*

B500 **629.22** Substrate Specificity and Unusual Reaction Mechanism of the Sterol 4-Methyltransferase in *Caenorhabdtis elegans*. P.M. Fisher, W. Zhou, M.B. Miller, Y. Shen, H. Shi, W.D. Nes, *Texas Tech University*

B501 **629.23** Liver X Receptor (LXR) Activation Decreases Chronic Myelogenous Leukemia Cell Viability and Alters the Expression of Antiapoptotic and Cholesterol Genes. C.J. Andersen, L. Dupree, A. Doerr, L. Cintron-Rivera, K. Murray, N. Ragonesi, *Fairfield University*

B502 **629.24** Ceramide-1-Phosphate: Characterizing a Fluorescent Lipid and Discovering New Binding Proteins. C.M. Shirey, R.V. Stahelin, *University of Notre Dame and Indiana University School of Medicine-South Bend*

B503 **629.25** Identification of Sphingolipid Metabolism Perturbations in Endothelial Cells Induced by the Acid Sphingomyelinase Inhibitor Imipramine Using Stable Isotope Labeling and Targeted Lipidomics. E. Berdyshev, M.J. Justice, I. Bronova, K.S. Schweitzer, I. Petrache, *National Jewish Health*

B504 **629.26** Disruption of Sphingolipid Biosynthesis Blocks Phagocytosis of *Candida albicans*. F.G. Tafesse, *Oregon Health & Science University (OHSU)*

B505 **629.27** PKC-δ Mediates Sphk2 Activation and Histone Acetylation in *Pseudomonas aeruginosa*-Induced Lung Inflammation. D.L. Ebenezer, P. Fu, A.W. Ha, V. Natarajan, *University of Illinois at Chicago*

B506 **629.28** A Prokaryotic-Like Lysophosphatidic Acid Acyltransferase Reveals Unique Features of Triacylglycerol Biosynthesis in Microalgae. Y. Kim, E.L. Terng, W. Riekhof, E.B. Cahoon, H. Cerutti, *University of Nebraska-Lincoln*

B507 **629.29** Study of Resistance to Abyotic Factors Through Oxidative Stress Biomarkers in Kluyveromyces Yeast. B. Vargas Ochoa, J.A. Mejía-Barajas, M. Arellano-Plaza, R. Montoya-Pérez, A. Saavedra-Molina, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico, Universidad Michoacana de San Nicolás de Hidalgo, Mexico and CIATEJ, Mexico*

B508 **629.30** Characterizing Lipid Production in *Chlorella vulgaris* Exposed to Sethoxydim, an Acetyl-CoA Carboxylase Inhibitor. A.L. Smythers, A.T. Holland, A. Roberts, D.R. Kolling, *Marshall University*

630
Membrane Proteins and Lipid Interactions

B509 **630.1** Investigating Phospholipid Binding Residues in the C Terminus of Ebola Virus Matrix Protein, VP40. M. Budicini, K. Johnson, R.V. Stahelin, *University of Notre Dame and Indiana University School of Medicine-South Bend*

B510 **630.2** Ceramide Induced Regulated Alternative Translocation of TM4SF20 and Beyond. B. Denard, Q. Chen, C. Lee, S. Han, J. Ye, J. Ye, *UT Southwestern Medical Center*

B511 **630.3** Structural Mechanism of Viral Tethering by the Anti-Viral Protein BST-2. K. Ozcan, C. Berndsen, *James Madison University*

B512 **630.4** Small Molecule and Lipid Binding Mechanisms of Sortilin and Vps10 Indicated in Altered Trafficking Patterns and Membrane Fusion. R. Sparks, R.A. Fratti, *University of Illinois at Urbana-Champaign*

B513 **630.5** The Ebola Virus Matrix Protein and Membrane Fluidity. K.A. Johnson, R.V. Stahelin, *Notre Dame and IU School of Medicine*

B514 **630.6** Membrane Localization of Metabolic Enzyme and Metabolic Modulation in the δ*min* Mutant of *Escherichia coli*. Y. Shih, C. Hung, C. Wang, *Academia Sinica, Taiwan and National Taiwan University, Taiwan*

B515 **630.7** Studying the Effect of Negative Curvature on Amphipathic α-Helix Model Protein Binding to an Oil/Buffer Interface. M. Mirheydari, E. Mann, E. Kooijman, *Kent State University*

B516 **630.8** Effectiveness of Sub-Therapeutic Staurosporine on Inhibition of Budding and Replication of Lipid-Enveloped Viruses. M. Fraser, R. Stahelin, *University of Notre Dame and Indiana University School of Medicine - South Bend*

B517 **630.9** Hydrophobic Region of Marburg Virus May Indicate Mechanism of Protein Trafficking to Plasma Membrane. K. Wijesinghe, L. McVeigh, R. Stahelin, *University of Notre Dame*

B518 **630.10** Targeting Lipid Metabolism to Inhibit Ebola VP40 Mediated Viral Budding. M.L. Husby, R. Stahelin, *University of Notre Dame and Indiana University School of Medicine*

B519 **630.11** Stronger Together: The Role of Cysteine Residues in Ebola Viral Matrix Protein VP40. S.B. Baker, K. Johnson, R. Stahelin, *University of Notre Dame, Indiana University School of Medicine, South Bend*

B520 **630.12** Interaction Between a 70-kDa Heat Shock Protein and Phosphatidylserine in Stressed Human Cells. A.D. Bilog, C. Labanieh, N. Nikolaidis, *California State University, Fullerton*

B521 **630.13** Crystal Structure of Lysophosphatidic Acid Acyltransferase Reveals a Paired Reentrant Helix Membrane Anchor That Positions the Active Site Inside the Phospholipid Bilayer. S.W. White, R.M. Robertson, J. Yao, S. Gajewski, G. Kumar, C.O. Rock, *St. Jude Children's Research Hospital*

B522 **630.14** Binding Interaction of Lipid-Bound ApoA–I with Lipopolysaccharides and Phosphatidylglycerol. B. Haeri, P. Weers, *California State University, Long Beach*

B523 **630.15** Understanding Ethanol Hexanoyl Transferase (Eht1) Localization to Lipid Droplets and the Endoplasmic Reticulum in Saccharomyces cerevisia. J. Zhu, I. Wheeldon, *University of California, Riverside*

B524 **630.16** Diacylglycerolpyrophosphate and Phosphatidic Acid Related Much?. P. Putta, E. Creque, E.E. Kooijman, *Kent State University*

B525 **630.17** Identification of NPC1 as the Target of U18666A, an Inhibitor of Lysosomal Cholesterol Export and Ebola Infection. F. Lu, M. Brown, J. Goldstein, *University of Texas Southwestern Medical Center*

B526 **630.18** Phosphatidylinositol 3,5-Bisphosphate Acts as a Novel Regulator of Calcium Transport During Saccharomyces cerevisia Vacuolar Fusion. G.E. Miner, R.A. Fratti, *University of Illinois at Urbana-Champaign*

B527 **630.19** Organelle-Specific Regulation of V-ATPase Activity by Inositol Phospholipids. P.M. Kane, S. Banerjee, *SUNY Upstate Medical University*

B528 **630.20** Computational Modeling of Human Fatty Acid Transport Protein 2. V.M. Perez, B.L. Puniya, T. Helikar, C.C. DiRusso, P.N. Black, *University of Nebraska-Lincoln*

631
Cell and Organelle Dynamics

B529 **631.1** Dissecting Comorbidity Between Parkinson's Disease and Melanoma in a Cell Culture Model. D. Dele-Oni, A. Bose, G. Petsko, *University of Massachusetts Dartmouth and Weill Cornell Medicine*

B530 **631.2** *See session 587, Undergraduate Education (ASBMB), for presentation information.*

B531 **631.3** Syntaphilin Regulates Mitochondrial Dynamics and Tumor Cell Invasion. M. Caino, D.C. Altieri, *The Wistar Institute*

632
Nuclear Dynamics

B532 **632.1** Investigating the Spatiotemporal Distribution Patterns of PCID2 Between the Nucleus and the Centrosome. R.K. Flores, K.K. Resendes, *Westminster College*

B533 **632.2** The Disruption of Nuclear Export and Protein Localization with 5-Fluorouracil. A. Nickle, M. Bischak, K. Higby, K.K. Resendes, *Westminster College*

633
Endoplasmic Reticulum

B534 **633.1** The Yeast Homolog of the Mammalian Oncogene, Bax Inhibitor-1, Regulates the Unfolded Protein Response by Altering the ER Microenvironment. S. Benko, D. Eagan, J. Alisch, M. Brown, M. McCarthy, W. Cavedon, J. O'Brien, L. Ritzer, B. Berry, N. Austriaco, *Providence College*

B535 **633.2** Host Control of Gag Localization in a Yeast Retrotransposon System. K.L. McGlone, J.B. Keeney, *Juniata College*

B536 **633.3** Clustering of IRE1α in the Mammalian ER Membrane Is Independent of Its Enzymatic Activities. D. Ricci, I. Marroco, J. Vargas, D. Eletto, M. Dibos, S. Boyle, Y. Iwamoto, Y. Argon, *Children's Hospital of Philadelphia, University of Pennsylvania, Sapienza University of Rome, and University of Salerno*

B537 **633.4** ER Stress and Molecular Targets of Platinum Anticancer Compounds. R. Cunningham, V. DeRose, *University of Oregon*

634
Mitochondria in Health and Disease

B538 **634.1** AMPK Negatively Regulates Mitophagy in the Heart. A. Kaminaris, S. Kobayashi, G. McStay, Q. Liang, *New York Institute of Technology College of Osteopathic Medicine*

B539 **634.2** Effects of Deceased Mitochondrial Ca^{2+} Uptake in an in Vitro Model of Parkinson's Disease. N. de la Rosa-González, A. Lee, M. Joiner, *University of Puerto Rico at Ponce and University of Iowa*

B540 **634.3** Cardiac Mitochondrial Phospholipid Acyl Chains Are Remodeled in Murine Obesity but Do Not Impair Supercomplex Formation, Respiratory Enzyme Activity, or Respiration E.M. Sullivan, A. Fix, M.J. Crouch, G.C. Sparagna, T.N. Zeczycki, D.A. Brown, S.R. Shaikh, *East Carolina University, Brody School of Medicine, East Carolina Diabetes and Obesity Institute, East Carolina University, East Carolina University, University of Colorado Denver Anschutz Medical Campus and Virginia Polytechnic Institute*

B541 **634.4** Functional Insights on the Human Adenine Nucleotide Translocator Interactome. M. Acoba, Y. Lu, S. Kandasamy, T. Huang, R. Nirujogi, A. Pandey, S.M. Claypool, *Johns Hopkins University School of Medicine and National Taiwan University Hospital and National Taiwan University Cancer Center, Taiwan*

B542 **634.5** Overexpression of Manganese Superoxide Dismutase in Mouse Liver Leads to Defects in Oxidative Phosphorylation. S. Steyl, *Appalachian State University*

B543 **634.6** Analysis of Oct1p/MIPEP Proteolytic Processing of Coenzyme Q Biosynthesis Proteins. M.J. Drahnak, M.T. Veling, D.J. Pagliarini, *Morgridge Institute for Research and University of Wisconsin-Madison*

B544 **634.7** Single, Long Molecule PCR for the Detection of Rare Mutations in Mitochondrial DNA H. Li, S. Annis, D. Woods, J. Tilly, K. Khrapko, *Northeastern University*

B545 **634.8** Fis1 Activity in Pre- and Post-Assembly of the Yeast Mitochondrial Fission Machinery. M.C. Harwig, R.B. Hill, *Medical College of Wisconsin*

B546 **634.9** A Potential Role for Mitochondrial Ca^{2+} Uptake During B Cell Activation. A. Torres-Quintanilla, E. González-Castillo, G. García-Rivas, *Tecnológico de Monterrey, Mexico*

B547 **634.10** Withdrawn.

B548 **634.11** Identification of Regulators of Lysosome Formation. G.T. Le, N. Jackson, N. Shaikh, A. Shearon, H. Fares, *University of Arizona*

B549 **634.12** Monitoring Organelle-Specific Responses to Amphotericin B in Mammalian Cells and *Candida albicans* Biofilms. C. Tourville, G. Rigden, D. Lewis, S. Hartsel, *University of Wisconsin-Eau Claire*

MONDAY
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

Poster manning times:

ODD BOARD NUMBERS: 12:00 – 1:15 pm EVEN BOARD NUMBERS: 1:15 – 2:30 pm

BOARD NUMBER	SESSION TITLE
B1-B11	Education and Professional Development through the Academic and Career Pipeline
B12-B26	Engaging and Retaining STEM Students in the Learning Process
B27-B37	Laboratory Courses
B38-B44	DNA Replication
B45-B53	DNA Damage
B54-B71	Histone Modifications
B72-B91	Transcriptional Regulation (I)
B97-B117	Non-Coding RNAs
B118-B122	Protein Chemistry, Synthesis and Turnover
B123-B129	Biochemistry and Biophysics of Proteins and Translation
B130-B153	Protein Interactions and Binding (II)
B154-B180	Protein Structure and Biophysics (II)
B181-B191	Protein Dynamics and Fluctuations
B192-B206	Protein Misfolding and Aggregation
B207-B224	Enzyme Mechanisms, Kinetics and Energetics (II)
B225-B244	Enzyme Regulation and Allosterism
B245-B267	Chemical Biology of Natural Products and Small Molecules

BOARD NUMBER	SESSION TITLE
B268-B288	Chemical Probes, Biosensors and Biomarkers
B289-B303	Proteomics (I)
B304-B309	Metabolomics
B310-B327	Protein Kinases
B328-B332	Phosphatases
B333-B345	Ion Channels
B346-B354	Redox Signaling
B355-B381	Apoptosis and Cell Death
B382-B404	Cancer Signaling and Therapeutics (I)
B405-B414	Parasite-Host Interactions
B415-B438	Antibiotic Resistance
B439-B447	Energy Metabolism, Oxidative Phosphorylation
B448-B454	Oxidative Stress and Reactive Oxygen
B455-B469	Diabetes, Obesity and Metabolic Syndrome (I)
B470-B492	Lipid Metabolizing Enzymes
B493-B513	Regulation of Lipid Metabolism
B514-B527	Vesicle Trafficking and Cargo
B528-B539	Glycans and Glycobiology
B540-B544	Glycan Function and Control Mechanisms

MONDAY APRIL 24

750

Education and Professional Development Through the Academic and Career Pipeline

B1 750.1 Assessing Accreditation at the ASBMB: Surveying Our Constituency. J.T. Tansey, L. Carastro, D.M. Dean, P. Kennelly, D. Martin, A.J. Wolfson, J.J. Provost, *Otterbein University, The University of Tampa, The University of Saint Joseph, The Virginia Polytechnic Institute, St. Mary's University of Minnesota, Wellesley College and The University of San Diego*

B2 750.2 An Effective Workshop Model for Graduate Student and Postdoctoral Fellow Career Development. S. Feeney, J.M. Barral, J.M. Hendershot, G. Hunt, E.A. Siebrasse, *University of California at Davis, The University of Texas Medical Branch, Cayman Chemical Company and American Society for Biochemistry and Molecular Biology*

B3 750.3 Use of Eyetracking Technology to Determine Biochemistry Expert-Novice Differences in Reading Metabolic Pathways. K. Linenberger Cortes, *Kennesaw State University*

B4 750.4 Support and Expectations for Biochemistry and Molecular Biology Faculty Promotion and Tenure at PUI Institutions. K.L. Cortes, R.L. Angotti, J. Provost, M.A. Benore, *Kennesaw State University, University of Washington Bothell, University of San Diego and University of Michigan Dearborn*

B5 750.5 MAMS—A Biochemistry and Molecular Biology Rich Bridge Program to Health Professional School. M.A. Taylor, *Pacific Northwest University of Health Sciences and Heritage University*

B6 750.6 First Year Medical Student Authorship of Clinical Cases. R.C. Bateman; Jr., P. Chastain, M. Stephens, *WCU College of Osteopathic Medicine and UI College of Medicine at Rockford*

B7 750.7 Mental Health Crisis in Graduate Education: The Data and Intervention Strategies. T.M. Evans, L. Bira, J. Beltran-Gastelum, L. Weiss, N. Vanderford, *UT Health San Antonio, St. Mary's University and University of Kentucky*

B8 750.8 Using Collaborative Problem Sets to Facilitate Learning in the Online Thermodynamics Classroom. D. Dean, *University of Saint Joseph*

B9 750.9 Mentorship Training for Postdoctoral Researchers: Results from a Four Week Intervention Program. C.G. Pena, T. Evans, S. Mustafa, L. Moreno, L. McManus, *UT Health*

B10 750.10 The Women in Science Undergraduate Organization at Otterbein University: Best Practices and Outreach Efforts. T.B. Hyatt, H.M. Bailey, J.T. Tansey, *Otterbein University*

B11 750.11 A Potential Solution to the Continuing Problem of Not Enough NIH RO1 Funding to Minority Investigators. J.J. Guers, J. Gwathmey, G. Haddad, D.E. Vatner, S.F. Vatner, *Rutgers University - New Jersey Medical School and Howard University*

751

Engaging and Retaining STEM Students in the Learning Process

B12 751.1 Structural Modeling and 3-D Printing of the PTF1-L Heterotrimeric Complex: Understanding the Structure and Function of a Ptf1a P191T Hypomorphic Mutation That Causes Pancreatic Aplasia in Children. L. Davies, C. Zwillenberg, J. Diaz, S. Nelson, A. Ali, S. Staford, T. Lefeld, M. Bowers, A. Gilliam, S. Hooks, E. Maysent, H. La Force, J. McKenzie, V. Armenta, I. Baker, C. Bennette, L. De Leon, A. Escobar, R. Faulkner, L. Morel, W. Morel, A. Garcia, M. Garcia, N. Grimes, I. Hernandez, E. Jordan, Y. Martinez, L. Montelongo, K. Montes, S. Njoku, A. Pacheco, M. Pittman, V. Pittman, E. Sandoval, E. Santana, H. Starnes, D. Morales, M. Flores, L. Tudon, A. Burkhaulter, N. Ali, W. Coats, R. MacDonald, *Hillcrest High School and University of Texas Southwestern Medical Center at Dallas*

B13 751.2 Predictors of Success on the MCAT for Post-Baccalaureate Pre-Medicine Students. Y. Dobrydneva, L. Schwartz, *GWU School of Medicine and Health Sciences*

B14 751.3 Design and Implementation of an Experiential Learning Workshop for Upper-Level Undergraduate Science Majors. S.J. Connelly, R. Johnson, J.L. Mills, *Rochester Institute of Technology*

B15 751.4 Modeling a Protein Story (MAPS): A Project-Based Learning Program Connecting Gene and Protein Sequence and Structure-Function Relationships with Physical Models D.H. Munzenmaier, *Milwaukee School of Engineering*

B16 751.5 The Evolution of Hemocyanin. M. Schuld, R. Bhatia, S. Bobber, B. Dorava, B. Fragoso, O. Johanneck, K. Ledger, B. Mclaughlin Haralson, A. Mitchell, J. Perez, T. Rivera, J. Ruiz, S. Sheikh, A. Ya, J. Perez, *Ronald Wilson Reagan College Preparatory High School*

B17 751.6 Withdrawn.

B18 751.7 Making Connections: Impact of Primary Literature Assignments on Lecture and Laboratory Learning. K.R. Miller, *University of Mount Union*

B19 751.8 Promoting Rural Student Enthusiasm for STEM by Establishing a Model Biotechnology Company in Their High School. M. Koci, B. Boller, R. Ali, A. Orders, *NC State University and Bertie Early College High School*

B20 751.9 IONiC VIPEr: Online Resources for an Active Classroom in Bioinorganic Chemistry. S. Smith, A. Bentley, H.J. Eppley, E. Jamieson, A.R. Johnson, C. Nataro, J. Raker, B.A. Reisner, J.L. Stewart, L.A. Watson, N.B. Williams, *University of Michigan-Dearborn, Lewis and Clark College, DePauw University, Smith College, Harvey Mudd College, Lafayette College, University of South Florida, James Madison University, Hope College, Earlham College, Claremont McKenna, Pitzer and Scripps Colleges*

B21 751.10 Integrating Research Experiences Into Introductory Biology Laboratories to Engage Undergraduate Students in STEM Learning. D. Zies, M. Stebar, D. Baker, *University of Mary Washington*

B22 751.11 Scientific Community Outreach in Central Texas. J.A. Bondoc, J. Ream, *Texas State University*

B23 751.12 Observations and Practical Tips on Metal Affinity Chromatography and Protein Refolding Techniques. C.N. Tovar, J.A. Mullins, O.O. Odunuga, *Stephen F. Austin State University*

B24 751.13 A Topic-Based Approach for Teaching Metabolism in a Flipped Classroom. K.E. Johanson, *Xavier University of Louisiana*

B25 751.14 Flipped Classroom Approaches Lead to No Improvement in Learning Outcomes or Student Perceptions. J.A. Arnott, S.L. Planey, *The Commonwealth Medical College*

B26 751.15 Proxies for Success— How Application Changes Correlate to PhD Path Pursuit for a Small Diversity Research Program. C.R. Shadding, D. Whittington, *Washington University in St. Louis - School of Medicine, Strategic Evaluations, Inc.*

752

Laboratory Courses

B27 752.1 Measurement of BCAA in Milks and Supplements with an Enzyme Assay: Confirmation of Results with HPLC. K. Keenan, D. Do, K. Ngo, *Stockton University and Absegami High School*

B28 752.2 A POGIL Based Laboratory Manual for Undergraduate Biochemistry. A. Wright, B. Davis, A. Krzyslak, *Marymount University, Shenandoah University and Bellarmine University*

B29 752.3 Assessing Student Competencies Using Rubrics Associated with Figure Legends and Ability to Perform the Bradford Assay in a 400-Level Undergraduate Course on Proteomics. R. Shipman, J. Grant, *University of Wisconsin-Stout*

B30 752.4 Ammonium Sulfate Selectively Extracts Invertase Activity from a Mixture of Precipitated Yeast Proteins. R.M. Cook, A.J. Gontkovic, J. Lawrence, A. Timerman, *University of Wisconsin-Stevens Point*

B31 752.5 The Role of Skill Assessments in an Undergraduate Non-Majors Biochemistry Lab Course. O.M. Hart, *Purdue University*

B32 752.6 Genetic Engineering of Human Cells Using Lentivirus in a High School Laboratory Course. C. Safranek, E. Ross, M. Rosenberg, A. Cole, A. Chandra, L. Pemberton, H. Zarrinnegar, A. Alonzo, L. De, R. Sweeney, *The Nueva School*

B33 752.7 Establishing a Zebrafish Laboratory Exercise to Be Used in a Course-Based Undergraduate Research Experience (CURE) in Introductory Biology. L. Bruton, A. Gruber, K. Kalo, J. Morrissette, *Lawrence Technological University*

B34 752.8 Undergraduate Student Research in Quantitative Analysis of Transcription Elongation Perturbation Networks Using Mass Spectrometry. L. Bedard, A. Boyd, N. Dyer, Z. Golay, W. Smith-Kinnaman, N. Alakhras, A.L. Mosley, *DePauw University and Indiana University School of Medicine*

B35 752.9 Design of a Robust Undergraduate Biochemistry Laboratory Course Based on a Modified and Expanded Bovine Serum Albumin Purification Scheme. T. Odunuga, N. Cheatwood, J. Mullins, M. Harris, *Stephen F. Austin State University*

B36 752.10 Design and Implementation of a Semester-Long Course-Based Research Experience in Biochemistry That Is Suitable for Introductory and Upper Level Students. S. Shelby, *Florida Southern College*

B37 752.11 Adaptation of Conceptual Frameworks from Public Health to Promote Deeper Learning in a Biochemistry Lab Course Curriculum. B. Smith-Keiling, *University of Minnesota*

753
DNA Replication

B38 753.1 A Novel Reductase-Independent Role of Nuclear Ribonucleotide Reductase. Y. Aye, *Cornell U & Weill Cornell Med*

B39 753.2 Bypass and Misincorporation of DNA Polymerases at DNA-Peptide Crosslinks. C.A. Sedgeman, F.P. Guengerich, *Vanderbilt University*

B40 753.3 Defining Lagging-Strand Polymerase Dynamics *in Vivo*. D. Smith, *New York University*

B41 753.4 Mechanism of DNA Binding by Human DNA Ligase I. T. Jurkiw, P. O'Brien, *University of Michigan*

B42 753.5 An Evolutionary Conserved DNA Replication Stress Response in Planarian R. Tirgar, U. Shamoon, L. Akpati, N. Sawyer, E. Nam, *University of Saint Thomas*

B43 753.6 Single Amino Acid Substitutions Affect the Stability of the Dimer Interface of the *E. coli* β Clamp. J. Baez, *Colgate University*

B44 753.7 Acetylpyrazine Thiosemicarbazone Inhibiting Topoisomerase II. L.C. Ngo, G. Stults, *Tennessee Technological University*

754
DNA Damage

B45 754.1 Assessing DNA Cross-Linking and Repair in Human Leukemia Cells. P.M. Le, J.T. Millard, *Colby College*

B46 754.2 Determination of *Escherichia coli* Genes Important for Dna Repair Following Alkylation. C. Joshi, A. Aiken, E. Nash, K. Wong, A. Carlson, B. Leifer, M. Muenter, P. Beuning, *Northeastern University*

B47 754.3 Effects of DNA Bending on T=C CPD Deamination. K. Wang, J. Taylor, *Washington University in St. Louis*

B48 754.4 A Dipyrimidine Sequence Library for Determining the Sequence Dependence of UV-Induced *Cyclobutane Pyrimidine Dimer* Formation. C. Lu, J.-S. Taylor, *Washington University in St. Louis*

B49 754.5 Effects of H4K16 and Gene Mutation on Sensitivity to DNA Damaging Agents and Silencing. B. Enya, T. Young, A. Kirchmaier, *Savannah State University and Purdue University*

B50 754.6 Determination of *E. coli* Cellular Factors That Contribute to Survival upon Exposure to the Alkylating Agent Benzyl Bromide. A. Aiken, S. Bellou, K. Wong, E. Nash, C. Kramer, B. Leifer, M. Muenter, P. Beuning, *Northeastern University*

B51 754.7 Identification of the Dimer Exchange Interface of the Bacterial DNA Damage Response Protein UmuD. D.A. Murison, R. Timson, P. Beuning, *Northeastern University*

B52 754.8 A Novel Small Molecule Inhibitor of Human DNA Polymerase Eta Modulates the Efficacy of Cisplatin in Cancer Cells. M.K. Zafar, L. Maddukuri, N.R. Penthala, A. Ketkar, S. Eddy, M.R. Reed, P.A. Crooks, R.L. Eoff, *University of Arkansas for Medical Sciences*

B53 754.9 Inhibition of Kynurenine Signaling Decreases Glioblastoma Multiforme Genomic Instability and Sensitizes Cells to Chemotherapeutic Treatment. M.R. Reed, L. Maddukuri, E. Helm, A.C L. Bostian, M.K. Zafar, R.L. Eoff, *University of Arkansas for Medical Sciences, University of Central Arkansas and Arkansas State University*

755
Histone Modifications

B54 755.1 Chemical Tools to Study the Molecular Mechanisms of the CoREST Complex-Chromatin Interactions. M. Wu, D. Hayward, J.H. Kalin, Y. Song, J.W. Schwabe, P.A. Cole, *Johns Hopkins University School of Medicine and University of Leicester, United Kingdom*

B55 755.2 Metabolic Regulation of Gene Expression by Histone Lysine β-Hydroxybutyrylation. D. Zhang, Z. Xie, D. Chung, Z. Tang, H. Huang, L. Dai, S. Qi, J. Li, G. Colak, Y. Chen, C. Peng, H. Ruan, D. Wang, L.M. Jensen, O. Kwon, S. Lee, S.D. Pletcher, M. Tan, D.B. Lombard, K.P. White, H. Zhao, J. Li, R.G. Roeder, X. Yang, Y. Zhao, *Medical University of South Carolina, Laboratory of Biochemistry and Molecular Biology, The Rockefeller University, State Key Laboratory of Drug Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, People's Republic of China, University of Minnesota Twin Cities, Yale University School of Medicine, University of Michigan, Kyungpook National University, Republic of Korea, Yale University and Yale School of Medicine*

B56 755.3 A "Tail" of Unusual Histone H2A Variants in Bdelloid Rotifers. M. Ebijoyeldhas, A.C. Jones, M. Boerma, S.D. Byrum, L.M. Orr, A.J. Tackett, A. Schurko, *Hendrix College and University of Arkansas for Medical Sciences*

B57 755.4 Systematic Mutational Analysis of Mixed Lineage Leukemia 3 (MLL3) Histone Methyltransferase Active Site Suggests Single Phe/tyr Switch Position to Regulate Product Specificity. A. Canning, N. Alicea-Velazquez, M. Cosgrove, *SUNY Upstate Medical University*

B58 755.5 Discovering Selectivity in BET Bromodomain Epigenetic Regulation. M. Olp, *Medical College of Wisconsin*

B59 755.6 Identification of Inhibitors of Human Histone Methyltransferases SUV39H1 and SUV39H2. A.C. Spencer, A. Jahan, Z. Shaikh, K. Liu, *Augusta University*

B60 755.7 Biological Function and Histone Recognition of Family IV Bromodomain-Containing Proteins. J.T. Lloyd, A. Poplawaski, M.Y. Lubula, S. Carlson, J. Gay, K.C. Glass, *Albany College of Pharmacy and Health Sciences (Vermont Campus)*

B61 755.8 Class I-Specific HDAC Inhibitor Stimulates the Expression of *Npr1* in Haplotype Mice by Enhanced Histone Acetylation at Different Lysine Residues. P. Kumar, V.R. Gogulamudi, C. Nguyen, K.N. Pandey, *Tulane University Health Sciences Center and School of Medicine*

B62 755.9 Regulation of Histone Methylation via Methionine Metabolism. S.A. Haws, J.M. Denu, *University of Wisconsin-Madison, Wisconsin Institute for Discovery and University of Wisconsin-Madison School of Medicine and Public Health*

B63 755.10 A Novel "Dual Substrate" Kinetics Assay Suggests the Presence of Two Active Sites in the MLL1 Core Complex. K. Namitz, J. Mahmud, N. Alicea-Veláquez, M. Cosgrove, *SUNY Upstate Medical University*

B64 755.11 Molecular Characterization of UHRF1 and UHRF2. A. Winkler, B. Albaugh, *Eastern Michigan University*

B65 755.12 Molecular Characterization of the PHD Domains of UHRF1 and UHRF2. A. Mohamed, B. Albaugh, *Eastern Michigan University*

B66 755.13 Affinity Characterization of TTD Domain of UHRF Histone Reader Protein. T.S. Petzold, *Eastern Michigan University*

B67 755.14 Identifying Dysregulated Epigenetic Enzymes in Castrate-Resistant Prostate Cancer Development. J. Lee, B.H. Yang, N.H. Damaschke, M.D. Boersma, W.H. Huang, E. Corey, D.F. Jarrard, J.M. Denu, *University of Wisconsin–Madison, Auburn University and University of Washington*

B68 755.15 GPS2 Regulates Mitochondrial Biogenesis via Mitochondria Retrograde Signaling and Modulation of Nuclear-Encoded Mitochondrial Genes Core Promoter Accessibility. M.D. Cardamone, B. Tanasa, C.T. Cederquist, J. Huang, K. Mahdaviani, J.L. Orofino, C. Lentucci, W. Li, M.G. Rosenfeld, M. Liesa, V. Perissi, *Boston University, Stanford University, University of California Los Angeles and University of California, San Diego*

B69 755.16 The Effect of UVB Irradiation on Histone H4. C.R. Musson, C. Zurita-Lopez, *California State University, Los Angeles*

B70 755.17 New Method for Isolation of Native Yeast Nucleosomes— Development and Application. V.I. Kuznietsov, C.A. Fox, J.M. Denu, *University of Wisconsin-Madison*

B71 755.18 Understanding the Role of the Histone Demethylase LID in the SIN3 Histone Modifying Complex in *Drosophila melanogaster.* A. Chaubal, L. Pile, *Wayne State University*

756
Transcriptional Regulation (I)

B72 756.1 Biochemical Analysis of the Zinc Uptake Regulator (Zur) from *Klebsiella oxytoca.* L. Khacheryan, Y. Xie, G. Gallas, J. Hernandez, *Midwestern University*

B73 756.2 Biochemical Analysis of Zinc Transporter Regulator from *Klebsiella oxytoca*: *In Vitro* and *in Vivo* Effects on Protein Function. Y. Xie, L. Khacheryan, G. Gallas, J. Hernandez, *Midwestern University*

B74 756.3 Upregulation of CYP17A1 by Sp1-Mediated DNA Demethylation Confers Temozolomide Resistance Through DHEA-Mediated Protection in Glioma. T. Hsu, *Taipei Medical University, Taiwan*

B75 756.4 The Sp1 in Astrocyte Plays an Important Role in Neurogenesis. J. Hung, W. Chang, *Department of Biotechnology and Bioindustry Science, NCKU, Taiwan, Graduate Institute of Medical Sciences, College of Medicine, Taipei Medical University, Taipei Taiwan*

B76 756.5 Transcriptional Regulation by Mediator Kinases During Starvation or Proliferation. J.D. Rubin, R.D. Dowell, D.J. Taatjes, *University of Colorado Boulder*

B77 756.6 Heme Induces *HAP4* Transcription and Mitochondrial Respiration. T. Zhang, A. Vancura, *St.John's University*

B78 756.7 Zinc-Dependent Transcriptional Regulation in *Paracoccus denitrificans.* D.P. Neupane, *New Mexico State University*

B79 756.8 Stat3 Is a Upstream Regulator of Granzyme g That Triggers the Minor Zygotic Gene Activation in Mouse Preimplantation Embryo. H. Ou-Yang, S. Wu, L. Sung, C. Chen, *Institute of Biotechnology, National Taiwan University, Taiwan, Department of Animal Science and Technology, National Taiwan University, Taiwan, Department of Life Sciences and National Chung Hsing University, Taiwan*

B80 756.9 Using Artificial Transcription Factors to Induce Differentiation into Cardiomyocytes. E.A. Heiderscheit, A. Eguchi, M.J. Wleklinski, M.C. Spurgat, A.Z. Ansari, *University of Wisconsin - Madison*

B81 756.10 The Role of Noncoding Genetic Elements in the Transcriptional Regulation of the Voltage-Gated Sodium Channels *SCN1A* and *SCN8A*. G.S. Inglis, A. Escayg, *Emory University*

B82 756.11 An Analysis of *Cycling DOF Factor-Like* Genes and Their Expression in *Physcomitrella patens*. J.C. Pang, K.A. Hicks, *Kenyon College*

B83 756.12 O-GlcNAc Regulates Erythroid Genes Controlled by GATA-1. Z. Zhang, S. Graw, E. Tan, D.C. Koestler, K.R. Peterson, C. Slawson, *The University of Kansas Medical Center*

B84 756.13 Elucidating a Putative Enhancer Element for the Human LAT Gene. G. Ghanim, T.S. Finco, *Agnes Scott College*

B85 756.14 *Rdl* Expression Impacts Circadian Rhythm and Locomotion in *Drosophila melanogaster.* S. MacDonald, R.P. Rogers, *Wentworth Institute of Technology*

B86 756.15 Molecular Characterization of HlyU, a Global Regulator of *Vibrio vulnificus* Virulence Genes. S. Choi, Z. Lee, Y. Bang, K. Jang, *Seoul National University, Republic of Korea, and UT Southwestern Medical Center*

B87 756.16 Smad4-Dependent TGF-β Signaling Directly Up-Regulates Notch Receptor in Cerebrovascular Endothelial Cells. Y. Lan, X. Cheng, *Institute of Biotechnology, People's Republic of China, Institute of Biotechnology, People's Republic of China*

B88 756.17 Regulation of Cellular Proliferation in B-Cell Acute Lymphoblastic Leukemia by Ikaros E. Dovat, J.L. Payne, C. Song, D. Desai, *Pennsylvania State University and Pennsylvania State University College of Medicine*

B89 756.18 Transcriptional Regulation of Cell Cycle Progression in T-Cell Leukemia. J.L. Payne, M. Soliman, E. Dovat, M. Kapadia, C. Song, S. Dovat, *Loma Linda University School of Medicine and Penn State College of Medicine*

B90 756.19 MSK-1 Mediated Histone H3 Phosphorylation Is Critical for Ethanol-Induced Inhibition of IL-2 Gene Transcription in CD4+ T Lymphocytes S. Ghare, S. Joshi-Barve, C. McClain, S. Barve, *University of Louisville and Robley Rex VAMC*

B91 756.20 Inhibiting Pathways Involved in B-Cell Development Enhances Sensitivity of B-Cell Acute Lymphoblastic Leukemia to Glucocorticoids. M.A. Pufall, K. Kruth, M.A. Fang, D. Shelton, O. Abu-Halawa, S.K. Tasian, M. Kampmann, *University of Iowa, Bio-Rad, Coe College, Children's Hospital of Philadelphia, University of California San Francisco*

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Non-Coding RNAs

B97 757.1 Targeting High-Mobility Group Box2 by miR-127 Modulates Pluripotency of Mouse Embryonic Stem Cells and Contributes to Aggressiveness of Hepatocellular Carcinoma. Y. Zhao, Z. Yang, L. Wang, *University of Connecticut, Veterans Affairs Connecticut Healthcare System and Yale University*

B98 757.2 Tthe Role of LncRNA H19 in Estrogen-Induced Cholestatic Injury. X. Li, R. Liu, D. Zhao, W. Pandak, P. Hylemon, H. Zhou, *Virginia Commonwealth University*

B99 757.3 miRNA-Mediated Crosstalk Between Wnt3a and TGFβ3 in Osteoblast Differentiation. S. Fushimi, T. Nohno, S. Nishimatsu, N. Katase, K. Terada, M. Katsuyama, M. Demura, K. Saijoh, H. Nagatsuka, H. Katsuyama, *Kawasaki Medical School, Japan, Okayama University, Japan and Kanazawa University, Japan*

B100 757.4 Non-Coding RNA Editing Involved in Adipose Dysfunction During Aging. A. Seidler, A. Marcelo, J. Page, N. Santanam, *Marshall University, Marshall University School of Medicine and Cheyney University*

B101 757.5 "Listening In"— The Cross-Talk Between Mother and Infant Through Exosomal microRNAs in Breast Milk. J.D. Kraft, I. Altosaar, *University of Ottawa, Canada*

B102 757.6 Functional Characterization of Diabetes-Induced Long Non-Coding RNA *Dnm3os* in Macrophages. S.C. Das, M.A. Reddy, P. Senapati, M. Wang, L. Lanting, H. Oh, S. Devaraj, R. Natarajan, *City of Hope, Texas Children's Hospital, Houston*

B103 757.7 Developing a Method to Identify and Study the Transcriptome of miRNAs Important in Myogenesis. G. Salant, J. Goodrich, J. Kugel, *University of Colorado, Boulder*

B104 757.8 Role of Long Non-Coding RNA *Alive* in Response to Angiotensin Ii in Vascular Smooth Muscle Cells. V. Amaram, S. Das, A. Leung, A. Reddy, L. Lanting, R. Natarajan, *City of Hope*

B105 757.9 Regena/NOT2 Is Essential for Gene Silencing by microRNAs. T. Zbornik, K. Andersen, S. Bowden, C. Reinke, *Linfield College*

B106 757.10 A Novel Long Non-Coding RNA Modulates Macrophage Phenotype During Diet-Induced Obesity. K. Stapleton, Z. Chen, M. Reddy, L. Lanting, A. Leung, J. Dieuliis, R. Natarajan, *City of Hope and University of Maryland*

B107 757.11 The Neuroprotective Role of miR-1017, a 3′ Tailed Mirtron. M. de Cruz, A. Flynt, *University of Southern Mississippi*

B108 757.12 Haematological and miRNAs (let-7g, miR-21, miR-141) Expression Modulation Profile in Serum Samples of Human Prostate Cancer. A.B. James, A.O. Fadaka, O.A. Magbagbeola, A. Oturu, O.O. Kolawole, A. Ogunijimi, T. Oshodi, M. Habeebu, F.O. Onawoga, E.O. Ajogbeje, *University of Lagos, Nigeria, and Afe Babalola University/University of Lagos, Nigeria*

B109 757.13 Cyclosporin A Alters Expression of Renal MicroRNAs: New Insights into Calcineurin Inhibitor Nephrotoxicity. Y. Bai, C. King, C. Francis, J. Gooch, *Philadelphia College of Osteopathic Medicine and Emory University*

B110 757.14 Transcriptome-Wide Mapping of the miR-122 Targetome Revealed Its Mechanistic Role in the Maintenance of Liver Homeostasis. J.M. Barajas, J. Luna, K. Teng, R. Darnell, K. Ghoshal, *The Ohio State University and The Rockefeller University*

B111 757.15 New Biotechnology to Inhibit microRNA Activity in Vivo and in Vitro. B. Amendt, H. Cao, W. Yu, T. Sharp, S. Eliason, *University of Iowa*

B112 757.16 Alteration of miR-186 Expression Modifies Inflammatory Markers in Normal Epithelial and Prostate Cancer Cell Models. S. Suman, D.Z. Jones-Reed, M.L. Schmidt, G.J. Clark, C. Klinge, S. Barve, K.S. Kimbro, L.R. Kidd, *University of Louisville and North Carolina Central University*

B113 757.17 Investigation of PAX3-FOXO1 Effect on NEAT1 Expression in Alveolar Rhabdomyosarcoma Cells. V.A. George, B. McDaniel, K.E. Johanson, *Xavier University of Louisiana*

B114 757.18 MicroRNA-506-3p as a Differentiation Agent for Neuroblastoma. M. Sousares, L. Du, *Texas State University*

B115 757.19 Functional Non-Coding ncRNA in Vascular Epigenetics: Redox Editing and Structural Relations of Factors. J.H. Wissler, *ARCONS Institute of Applied Research & Didactics, Germany*

B116 757.20 Quantifying Downstream Regulatory Output as a Way to Understand the Biogenesis Pathways of Endogenous siRNAs in *C. elegans*. L.T. Izzo, E.M. Youngman, *Villanova University*

B117 757.21 Nonstop Decay in *C. elegans*: Examination of a Possible Role for Small Noncoding RNAs. E.M. Youngman, *Villanova University*

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Protein Chemistry, Synthesis and Turnover

B118 758.1 Positive Charge in the n-Region of the Signal Peptide Contributes to Efficient Post-Translational Translocation of Small Secretory Proteins. M. Liu, J. Sun, Y. Xiong, J. Cui, H. Guo, *Tianjin Medical University General Hospital, People's Republic of China, and The University of Michigan*

B119 758.2 CEBPD Is an Early Endoplasmic Reticulum Stress Response Gene Implicated in Breast Cancer Cell Survival. N. Sheshadri, S. Sharan, E. Sterneck, *National Cancer Institute*

B120 758.3 A Bifunctional Fusion Enzyme with DNA Polymerase and dUTPase Activities. A.K. Dash, S. Bhamidipati, M.B. Rashid, *University of Houston-Clear Lake*

B121 758.4 The Molecular Basis of Rapid and Selective Diffusion in the Nuclear Pore Complex. S. Sparks, R. Hayama, M.P. Rout, D. Cowburn, *Albert Einstein College of Medicine and Rockefeller University*

B122 758.5 Llama Hemoglobin Binding to Heterologous Haptoglobins. O.A. Vanderpuye, K. Troutman, N. Kellam, C. Dunn, *Albany State University*

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Biochemistry and Biophysics of Proteins and Translation

B123 759.1 Extra-Ribosomal Function of Bacterial Ribosomes: Modulation of Enzyme Activities. A. Shekhtman, C. DeMott, S. Majumder, S. Reverdatto, *University at Albany and State University of New York*

B124 759.2 *in Vivo* and *in Vitro* Studies of RRF (Ribosome Recycling Factor) Revealed That Its Major Function Is to Release mRNA from the Post-Termination Complex and Not Splitting of the Ribosomal Subunits. F. Quaglia, H. Kaji, A. Kaji, Y. Inokuchi, *Thomas Jefferson University, University of Pennsylvania and Teikyo University, Japan*

B125 759.3 Assembly and Disassembly of the Hibernating Bacterial 100S Ribosome. A. Basu, *Saint Louis University*

B126 759.4 The Cellular Demand for Protein Synthesis Influences the Ribosome Maintenance Program *in Vivo*. J.C. Price, *Brigham Young University*

B127 759.5 Differential $tRNA^{ser}$ Expression Regulates Translation Rate of a Biofilm Master Regulator During *Bacillus subtilis* Biofilm Development. G. Di Cecco, J. Greenwich, Y. Chai, *Northeastern University*

B128 759.6 A Non-Canonical Function of Leucyl tRNA Synthetase Negatively Regulates Skeletal Myogenesis. K. Son, N. Khanna, A. Banerjee, S. Martinis, J. Chen, *University of Illinois at Urbana-Champaign*

B129 759.7 Translational Regulation of Gene Expression in *Mycobacterium*: A Means for Coordinating the Expression of Functionally Related Proteins M.E. Saks, J. Oh, A.C. Deets, G.M. Mastorakos, S.A. Martinis, *University of Illinois*

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Protein Interactions and Binding (II)

B130 760.1 Deconstructing the Peptide Specificity of TCR Recognition. T.P. Riley, J. Mendoza, L. Hellman, K. Garcia, B. Baker, *University of Notre Dame and Stanford School of Medicine*

B131 760.2 Native Proteomics: A New Approach to Protein Complex Discovery and Characterization. P.D. Compton, O. Skinner, N. Haverland, L. Fornelli, P. Doubleday, H. Seckler, L. Schachner, N. Kelleher, *Northwestern University*

B132 760.3 Expression, Purification and Initial Characterization of the Coiled-Coil 2-3 Region of Atg11, a Central Organizer of Selective Autophagy Initiation. C. Zois, B. Kennedy, S.K. Backues, *Eastern Michigan University*

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BI33 760.4 Toxic PR Poly-Dipeptides Encoded by the C9orf72 Repeat Expansion Target LC Domain Polymers. Y. Lin, *University of Texas Southwestern Medical Center*

BI34 760.5 Identification of Different Binding Partners of the F-BAR Proteins Cdc42 Interacting Protein 4 (CIP4) and Formin Binding Protein 17 (FBP17) in Cortical Neurons. M.E. McDermott, R.J. Taylor, K.L. Taylor, E.W. Dent, *University of Wisconsin-Madison, University of Wisconsin School of Medicine and Public Health*

BI35 760.6 Characterization of ppGpp-Binding Proteins in *Escherichia coli*. D.T. Nguyen, C.H. Jung, *Chonnam National University, Republic of Korea*

BI36 760.7 Lactoferrin Interacts with SPLUNC1 to Amelioate Lipopolysaccharide-Induced Inflammation of Human Nasal Epithelial Cells. C. Chen, Y. Tsou, H. Chen, *National Chung Hsing University, Taiwan and Da-Yeh University, Taiwan*

BI37 760.8 Affinity and Structural Characterization of Human AT Hook Motif Variants. K. Dobbins, K.L. Buchmueller, *Furman University*

BI38 760.9 Analysis of Complex Interactions Between the Essential Subunits, Pam16, Tim44, and Tim50, of the Hsp70-Based Mitochondrial Protein Import Machinery. N.L. Yan, S. Ting, B. Schilke, E.A. Craig, *University of Wisconsin*

BI39 760.10 Examining How Allosteric Mutations Affect Ligand Binding and Specificity on Dihydrofolate Reductase. M. Alfonso, M. Okondo, N.M. Goodey, *Montclair State University*

BI40 760.11 Novel Bryostatin-1 Targets: Mammalian Unc13-1 and Unc13-2 Isoforms. F.A. Blanco, S. Pany, A.A. Ghosh, Y. You, J. Das, *University of Houston*

BI41 760.12 Carboxyl-Terminus of TFG Regulates Directional Movement of COPII Transport Carriers. S. Block, M. Hanna, A. Audhya, *University of Wisconsin-Madison*

BI42 760.13 Probing the Pal-Peptidoglycan Interaction. S. Phadke, S. Stanton, J. Pierce, C. LaClair, C. Hall, L. Michel, *Rochester Institute of Technology*

BI43 760.14 The Role of a Flexible Loop in Metal Transfer Between Periplasmic Zinc Proteins. S.H. Fullam, *New Mexico State University*

BI44 760.15 Determining Histone Deacetylase 8 Substrates Using Non-Natural Amino Acids. J. Lopez, S. Haynes, J. Majmudar, B. Martin, C. Fierke, *University of Michigan*

BI45 760.16 Endocytosis of Phosphorothioate Antisense Oligonucleotides (ASO) by the Stabilin Receptors. A. Egger, B. Kellar, C.M. Miller, E.N. Harris, *University of Nebraska-Lincoln*

BI46 760.17 Identifying Serine Proteases Involved in HMPV F Cleavage. J.T. Kinder, *University of Kentucky*

BI47 760.18 Molecular Mechanisms Associated with Early Onset Primary Dystonia (DYT16) Caused by Mutations in PACT. S.B. Burnett, L. Vaughn, R. Patel, *University of South Carolina*

BI48 760.19 Determination of DNA Binding Interactions for Individual Constructs of the PICKLE Protein's DNA Binding Domain in *Arabidopsis thaliana*. K.J. Ernzen, K.K. Ho, J. Ogas, *Viterbo University and Purdue University*

BI49 760.20 Cellular Protein P32/gC1qR Recruits PKC to Viral Protein ICP34.5 and Facilitates HSV Nuclear Egress. C. Zhang, S. Wu, Y. Wang, L. Zhang, S. Pan, Y. Liu, M. Yang, D. Chen, J. Wang, B. He, Y. Cao, *Nankai University, People's Republic of China, and University of Illinois*

BI50 760.21 Generation of TYRO3 Receptor Tyrosine Kinase Clones to Study Interactions with SH2 Domain Proteins in the Retinal Pigment Epithelium. L. Harris, S. Shelby, *Florida Southern College*

BI51 760.22 Multiple Approach to Determine Protein-Protein Binding Affinity of Calcineurin Homologous Protein Isoforms 1 and 2 and the Sodium Hydrogen Exchanger Isoform 1. C.N. Marshall, M.A. Wallert, M.A. Wallert, J.J. Provost, *University of San Diego and Bemidji State University*

BI52 760.23 Bacteriophytochromes in Myxobacteria: Implications for Light-Control of Cell Development. G.C. Tracy, K.D. Gallagher, J.D. Varela, D. Bizhga, P. Duong, A. Nugent, E.A. Stojkovic, *Northeastern Illinois University*

BI53 760.24 BECN Homologs and ATG14 Form a Metastable Coiled-Coil to Mediate Autophagy. S. Sinha, M. Su, Y. Li, B. Levine, C. Colbert, *North Dakota State University, Howard Hughes Medical Research Institute and University of Texas Southwestern Medical Center*

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Protein Structure and Biophysics (II)

BI54 761.1 Detecting Lipid Induced Structural Changes of Marburg Virus-VP40 Protein Using Hydrogen-Deuterium Exchange Mass Spectroscopy (HDX-MS). K.J. Wijesinghe, S. Urata, S. Li, R.V. Stahelin, *University of Notre Dame, University of California-San Diego and Indiana University School of Medicine-South Bend*

BI55 761.2 Destabilization of the Non-Polar Subdomain of Hemolysin A Inhibits Hemolysis. M.R. Brunner, D. Grilley, T.M. Weaver, *University of Wisconsin La Crosse*

BI56 761.3 Testing *c*-Type Heme Sources for Nontypeable *Haemophilus influenzae*. S. Stanton, J. Pierce, V. Sgheiza, K.L. Bren, L. Michel, *Rochester Institute of Technology and University of Rochester*

BI57 761.4 Probing the Role of Allostery in Rho and Ras GTPases. K. Marcus, B. Ma, R. Nussinov, C. Mattos, *Northeastern University and National Cancer Institute*

BI58 761.5 Characterizing the Interactions Between Mg^{2+} and a Periplasmic Lipoprotein Involved in Mg^{2+} Homeostasis in *Salmonella enterica*. T.J. Davie, J.F. May, *University of Wisconsin-La Crosse*

BI59 761.6 Structural and Functional Insights into σ_1 Receptor Ligand Binding. H.R. Schmidt, A.C. Kruse, *Harvard Medical School*

BI60 761.7 Purification and Structural Analysis of an Uncharacterized Lytic Protein in Epstein-Barr Virus. M.D. Scheidt, K. Gorres, *University of Wisconsin - La Crosse*

BI61 761.8 Characterization of the Ordered Domain of an Epstein Barr Viral Tegument Protein. M.E. Marlowe, K. Gorres, *University of Wisconsin-La Crosse*

BI62 761.9 Structural Characterization of a Periplasmic Lipoprotein Associated with Magnesium Homeostasis in *Salmonella enterica*. D.M. Rasmussen, C. Varneerd, B. Bhattacharyya, J. May, *University of Wisconsin- La Crosse*

BI63 761.10 Using Biophysical Characterization to Explore Suppressor of IKKepsilon Structure. M.L. Machek, F. Shikwana, S.I. Graham, I.D. Minzer, R. Wey, R. Cruz, E. Bell, J.K. Bell, *University of San Diego and Westview High School*

BI64 761.11 Structural and Biochemical Characterization of a Periplasmic Lipoprotein with a Role in Adaptation of *Salmonella* to Magnesium Limitation. J.F. May, D.M. Rasmussen, T.J. Davie, C. Vaneerd, E.A. Groisman, B. Bhattacharyya, *University of Wisconsin-La Crosse, Yale School of Medicine and Yale Microbial Sciences Institute*

BI65 761.12 Structure and Stability of C19orf10 as Assessed by Circular Dichroism. V. Bortnov, D.S. Annis, D.R. McCaslin, D.F. Mosher, *University of Wisconsin*

BI66 761.13 Evaluating the Role of *Corynebacterium matruchotti* MdAa in Oral Biofilm Formation. R. Tirgar, T.T. Luong, H. Ton-That, *University of Saint Thomas and The University of Texas Health Science Center at Houston-McGovern Medical School*

BI67 761.14 Evolutionary Fine-Tuning of Conformational Ensembles in Fimh During Host-Pathogen Interactions. V. Kalas, J.S. Pinkner, T.J. Hannan, M.E. Hibbing, J.W. Janetka, S.J. Hultgren, *Washington University in St. Louis*

BI68 761.15 Thermodynamic Partitioning Forces at the Membrane Protein Interface. R. Mahalakshmi, *Indian Institute of Science Education and Research, India*

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BI69 761.16 Pinpointing the Divergence of Quaternary Structure in the Lysine Biosynthetic Pathway. G. Pearce, S. Watkin, J. Keown, *University of Canterbury, New Zealand and University of Auckland, New Zealand*

BI70 761.17 Molecular Insights Into the Structural Stability and Biological Activity of T4 Bacteriophage DNA Polymerase Processivity Factor. V. Jain, M.I. Singh, *IISER Bhopal, India*

BI71 761.18 Toward the Structure of PE5-PPE4-EspG3 Heterotrimer from *Mycobacterium smegmatis* to Elucidate PE-PPE Dimer Recognition by Cognate EspG. Z. Williamson, W. Ciocca, R. Reed, K. Korotkov, *University of Kentucky and Eastern Kentucky University*

BI72 761.19 An Automated Method for the Correction of Unsubstantiated Ramachandran Outliers in Protein Structures. C.R. Smith, J.A. Alaniz, K.H. West, C.J. Weiss, W.R. Novak, *Wabash College*

BI73 761.20 Structural and Functional Characterization of an F17-Like CUP Adhesin from Uropathogenic *E. coli* Isolate UTI89. R.D. Klein, C. Spaulding, S. Hultgren, *Washington University in St. Louis School of Medicine*

BI74 761.21 Complex Structure of the Disulfide Bond-Dimerized PDZ-RhoGEF and CXCR2 PDZ-Binding Motif: A New Mode of PDZ Dimerization. N.S. Spellmon, J. Holcomb, A. Niu, V. Choudhary, J. Brunzelle, C. Li, Z. Yang, *Wayne State University, Life Sciences Collaborative Access Team and Georgia State University*

BI75 761.22 Characterization of the Role for the N-Terminal Domain on Sil1 Activities as a Nucleotide Exchange Factor and Reductase K.A. Pareja, C. Sevier, *Cornell University*

BI76 761.23 An Alternative Structural Model of Activation for the Anti-Anti-σ Factor PhyR and Interaction with the Anti-σ Factor NepR. J.L. Luebke, D.S. Eaton, J.R. Sachleben, S. Crosson, *University of Chicago*

BI77 761.24 Developing Monovalent Ion Parameters for the Optimal Point Charge (OPC) Water Model. D.E. Clark, J.C. Dood, B.P. Krueger, *Hope College*

BI78 761.25 Cooperative Binding of Cinnamon Polyphenols as Activators of Sirtuin-1 Protein in the Insulin Signaling Pathway. M. Brennemen, T. Mahfouz, A. Stockert, *Ohio Northern University*

BI79 761.26 The Conformation of Apolipoprotein E4 on Discoidal and Spherical High Density Lipoproteins Using Chemical Crosslinking and Fluorescence Spectroscopy. N. Bala, K. Taiwo, V. Narayanaswami, *California State University, Long Beach*

BI80 761.27 Correlation of Fitness Landscapes from Three Orthologous TIM Barrels Originates from Sequence and Structure Constraints. Y.H. Chan, S.V. Venev, K.B. Zeldovich, C.R. Matthews, *UMass Medical School*

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Protein Dynamics and Fluctuations

BI81 762.1 A Discrete SERCA N-Domain Loop Plays a Role in Pump Structural Dynamics and Functional Regulation. O.N. Raguimova, N. Smolin, E. Bovo, A.V. Zima, S.L. Robia, *Loyola University Chicago*

BI82 762.2 Salt-Dependent Protein Splicing in Extreme Halophiles. C.J. Janton, J.N. Reitter, K.V. Mills, *College of the Holy Cross*

BI83 762.3 Stress-Triggered Self-Association of an Enzyme Reverses Its Catalytic Activity. H. Yoo, R. Goyal, D. Drummond, *University of Chicago*

BI84 762.4 NMR Studies of Ubc9 Mutant Identify Structural Basis for SUMO Target Selection. W.J. Placzek, M. Bjornsti, R.H. Whitaker, C. Wright, J. Onuiri, *The University of Alabama at Birmingham*

BI85 762.5 Altered Protein Dynamics Modified the Chemical Step in Thymidylate Synthase. A.K. Ghosh, T. Abeysinghe, A. Kohen, *The University of Iowa*

BI86 762.6 Conformational Motions Impacting Function in an Enzyme Superfamily. C. Narayanan, D.N. Bernard, K. Bafna, O.P. Choudhary, C.S. Chennubhotla, P.K. Agarwal, N. Doucet, *INRS - University of Quebec, Canada, University of Knoxville*

BI87 762.7 Modeling Dynamics in the D-Amino Acid Oxidase Protein. L. Kueffer, W. Beyers, *University of Wisconsin - Stevens Point*

BI88 762.8 The Effects of Nucleotides on the Conformational Flexibility and Stability of Glutamate Dehydrogenase. S. Tran, J.K. Bell, E. Bell, *University of San Diego*

BI89 762.9 Dynamics Underlying Cytochrome P450cam Regioselectivity via 2D IR Spectroscopy. M. Thielges, E. Basom, *Indiana University*

BI90 762.10 Conformational Changes in Palladin Actin-Binding Domains Measured by Fluorescent Resonance Energy Transfer. S. Womack, R. Vattepu, M.R. Beck, *Wichita State University*

BI91 762.11 Structure, Dynamics and Folding of an Immunoglobulin-Like Domain of Actin Binding Protein Palladin R. Vattepu, M.R. Beck, *Wichita State University*

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Protein Misfolding and Aggregation

BI92 763.1 ATF6 Activation Remodels the Endoplasmic Reticulum Proteostasis Network to Restore Proteostasis of Pathogenic $GABA_A$ Receptors. Y. Fu, *Case Western Reserve University*

BI93 763.2 Characterization of Anti-SOD1 Antibodies and Detection of Intermediary SOD1 Oligomers R.S. Atlasi, R. Malik, C. Corrales, L. Tzeplaeff, N. Cashman, G. Bitan, *University of California, Los Angeles (UCLA), Strasbourg University, France and University of British Columbia (UBC), Canada*

BI94 763.3 Engineering Hsp104 Variants to Counter Protein Misfolding. M. Jackrel, J. Shorter, *University of Pennsylvania*

BI95 763.4 Copper-Zinc Superoxide Dismutase as a Convenient System for Assessment of Safety Margins *in Vitro*. R. Malik, C. Corrales, R.S. Atlasi, J.S. Valentine, T. Schrader, F. Klärner, G. Bitan, *UCLA and Duisburg-Essen University, Germany*

BI96 763.5 Investigation of Cellular Signaling and Epigenetic Dynamics via Optogenetic Control of Nuclear Cytoplasmic Distribution. H. Yumerefendi, B. Kuhlman, *University of North Carolina at Chapel Hill*

BI97 763.6 Role of Folding Intermediates in Initiating Aggregation of the Prion Protein. R. Moulick, R. Goluguri, J.B. Udgaonkar, *NCBS and IFR, India*

BI98 763.7 Protein Aggregation in *Ehrlichia chaffeensis* During Infection of Mammalian Cells. M. Zolkiewski, D. Kuczynska-Wisnik, C. Cheng, R.R. Ganta, *Kansas State University, University of Gdansk, Poland and Vanderbilt University Medical Center*

BI99 763.8 A Common Mechanism of Proteasome Impairment by Neurodegenerative Disease-Associated Oligomers. T.A. Thibaudeau, R. Anderson, D.M. Smith, *West Virginia University, School of Medicine*

B200 763.9 Host vs Virus: HSV Has Evolved to Evade Host Antiviral Mechanisms by Manipulating the Host Proteostasis Machinery. S. Weller, M. Adlakha, *University of Connecticut School of Medicine*

B201 763.10 Translation of Heat Shock Proteins Is Regulated by Poly(A)-Binding Protein Assembly. C.D. Katanski, J. Riback, E. Pilipenko, D.A. Drummond, *University of Chicago*

B202 763.11 Identifying and Ameliorating Complex Collagen Misfolding Defects. M.D. Shoulders, *Massachusetts Institute of Technology*

B203 763.12 Propagation of Tau Prions from Alzheimer's Disease and Chronic Traumatic Encephalopathy Patients in Cultured Cells. A.L. Woerman, A. Aoyagi, S. Patel, S.A. Kazmi, I. Lobach, L.T. Grinberg, A.C. McKee, W.W. Seeley, S.H. Olson, S.B. Prusiner, *University of California San Francisco, Daiichi Sankyo Co., Ltd. and Boston University*

B204 763.13 Protein Aggregation Small Molecule Inhibitor Discovery and Mechanisms B. Xu, *Virginia Tech*

B205 763.14 Tau and α-Synuclein Protein Expression, Purification, and Their Amyloid Inhibitor Discovery. M. Marcus, F. Henderson, K. Kelly, A. Umana, P. Velander, L. Wu, B. Xu, *Virginia Tech*

B206 763.15 Metal Induced Conformational Changes of Alpha-Synuclein and the Role of Ambient Oxygen. H.R. Lucas, *Virginia Commonwealth University*

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Enzyme Mechanisms, Kinetics and Energetics (II)

B207 764.1 Effects of Isotopic Substitution in Enzyme and Co-Factor on Enzyme Catalyzed Hydride Transfer. C. Ranasinghe, P. Pagano, Q. Guo, C. Cheatum, A. Kohen, *The University of Iowa*

B208 764.2 Reactivity of Neuroglobin with H_2S. M. Ruetz, J. Kumutima, M. Filipovic, N. Lehnert, R. Banerjee, *University of Michigan and University of Bordeaux, France*

B209 764.3 Spectroscopic Insight Into the Mechanism of Nickel-Substituted Rubredoxin, a Bioinspired Hydrogenase Mimic. M.J. Stevenson, J.W. Slater, S.C. Marguet, H.S. Shafaat, *The Ohio State University*

B210 764.4 Investigation of the Substrate Specificity of L-Idonate Dehydrogenase by Site-Directed Mutagenesis. S. Steiner, A. Terpening, C. McCurdy, *Hanover College and Indiana University School of Medicine*

B211 764.5 Temperature and Pressure Dependence of the Activity of Inteins from Extreme Thermophiles. H.Y. Comeau, J.D. Long, I.V. Pierre, J.N. Reitter, K.V. Mills, *College of the Holy Cross*

B212 764.6 Insights into Radical SAM Enzyme Mechanism from Lysine-2,3-Aminomutase and an *S*-Adenosyl-L-Methionine Analog. A. Byer, J. Broderick, *Montana State University*

B213 764.7 Expression, Purification, and Characterization of Codon Optimized and Mutant Variations of DszB from *N. asteroides*. J.J. Gumpf, K. Idrizi, L. Watkins, *James Madison University*

B214 764.8 Substrate Specificity of the Novel Serine Hydrolase, LipN, Implicated in the Virulence of *Mycobacterium tuberculosis*. D. Schemenauer, R. Johnson, *Butler University*

B215 764.9 Elucidating the Mechanism of Thiol Oxidase Activity of a B_{12}-Trafficking Protein Z. Li, A. Shanmuganathan, M. Ruetz, N. Lesniak, M. Koutmos, R. Banerjee, *University of Michigan and Uniformed Services University of the Health Sciences*

B216 764.10 Specificity Studies of the Aromatic Desulfinase, 2-(2′-Hydroxyphenyl)Benzenesulfinate Desulfinase (DszB) from *Nocardia asteroides* A3H1. D.M. Hoang, E. Smith, L. Watkins, *James Madison University*

B217 764.11 Evaluating the Catalytic Role of a Conserved Glutamate Residue in Triosephosphate Isomerase from *Trypanosoma brucei brucei*. C.B. Khoury, N. Seangmany, T.C. Chang, J.P. Schwans, *California State University, Long Beach*

B218 764.12 Investigating Dialkyl Aryl Phosphates as Selective Butyrylcholinesterase Inhibitors. J.P. Schwans, J. Gonzalez, T. Tran, J. Ochoa, K. Nakayama, S. McCoy, E.J. Sorin, *California State University Long Beach*

B219 764.13 Sulfide Oxidation and Transfer Catalyzed by a Bacterial Persulfide Dioxygenase Fused to a Rhodanese. N. Motl, O. Kabil, M. Skiba, J. Smith, R. Banerjee, *University of Michigan*

B220 764.14 Balance of Conformational States Affect the Intrinsic Hydrolysis of NRas When Compared to Other Ras Isoforms. D.F. Reid, C. Mattos, *Northeastern University*

B221 764.15 Factors That Influence Recombinant Lysine Deacetylase Activity. S.A. Imbraguglio, B.J. Hylton, T.B. Toro, T.J. Watt, *Xavier University of Louisiana*

B222 764.16 Optimization of the Paired Enzyme Assay Synthesizing UDP-Xylose from UDP-Glucose. M.D. Cook, A. Culbertson, O. Zabotina, *Iowa State University*

B223 764.17 Development of a Thermostable ATP Hydrolysis Coupled Enzyme Activity Assay. K.L. Cumpian, M.D. Canny, M.P. Latham, *Texas Tech University*

B224 764.18 Unmasking the High Affinity of *Escherichia coli* Glycogen Synthase Toward Its Polyglucan Substrate. A.A. Iglesias, M. Aleanzi, M.D. Asencion Diez, M. Machtey, A. Yep, M. Ballicora, *Instituto de Agrobiotecnologia del Litoral, Argentina, Cal Poly and Loyola University at Chicago*

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Enzyme Regulation and Allosterism

B225 765.1 Manipulating Cellular Adaptive Response by Engineering Novel and Evolutionarily Conserved Allosteric Sites in Caspase-3. M.E. Thomas III, C. Clark, *NCSU and UTA*

B226 765.2 Resurrection of Caspase-6 Ancestral States R.D. Grinshpon, A.C. Clark, *NCSU and UT - Arlington*

B227 765.3 Designing Highly Specific Protein-Based Small Molecule Biosensors. S. Raman, *University of Wisconsin-Madison*

B228 765.4 Allosteric Regulation and Enzymatic Mechanism of YopJ Family of Bacterial Effectors. J. Song, Z. Zhang, K. Ma, L. Gao, W. Ma, *University of California, Riverside*

B229 765.5 Delving Into the Details: Investigation of the Kinetic Properties of SpeG Spermidine *N*-Acetyltransferases from *Escherichia coli* and *Vibrio cholerae*. M.L. Kuhn, J. Dang, W. Hong, E. Jung, D. Tran, D. Asaro, K. Jew, *San Francisco State University*

B230 765.6 Modulation of Sirtuin NAD^+-Dependent Deacylase Activity by Cysteine Oxidation. K.S. Kalous, S.L. Wynia-Smith, M.D. Olp, B.C. Smith, *Medical College of Wisconsin*

B231 765.7 Phosphoinositides and Kinesin 13 Family Member Kif2A Cooperatively Regulate Arf GTPase Activating Protein AGAP1 N.S. Roy, R. Luo, P.A. Randazzo, *National Cancer Institute, National Institutes of Health*

B232 765.8 A Potential Modification of the Production of the Essential Amino Acid: L-Threonine. C. Petit, Y. Kim, S. Lee, C. Kang, D. Ronning, *University of Toledo and California State University-Stanislaus*

B233 765.9 Phospholipase A_2: A Unique Paradigm of Allosteric Regulation by Membranes. V. Mouchlis, J. McCammon, E. Dennis, *UC San Diego*

B234 765.10 The Predicted Human PANK4 Lacks Key Catalytic Residues for Pantothenate Kinase Function. J. Yao, C.O. Rock, S. Jackowski, *St Jude Children's Research Hospital*

B235 765.11 Redox Control of PRMT1 Substrate Specificity. T.B. Caceres, O. Price, Y. Morales, J. Hevel, *Utah State University*

B236 765.12 Structural Insight Into Allosteric Inhibition of *Mycobacterium tuberculosis* Tryptophan Synthase. K. Michalska, S. Wellington, P.P. Nag, R. Jedrzejczak, N.I. Maltseva, S.L. Fisher, S.L. Schreiber, D.T. Hung, A. Joachimiak, *University of Chicago, Broad Institute of MIT and Harvard, Harvard Medical School, Massachusetts General Hospital and Harvard University*

B237 **765.13** Physiological Significance of Persulfide Generation by The Transsulfuration Pathway P.K. Yadav, M. Martinov, V. Vitvitsky, J. Seravalli, R. Wedmann, M.R. Filipovic, R. Banerjee, *University of Michigan, Russian Academy of Sciences, Russian Federation, University of Nebraska-Lincoln and Friedrich-Alexander University of Erlangen-Nuremberg, Germany*

B238 **765.14** The Firmicutes Case on the Regulation of Bacterial ADP-Glucose Pyrophosphorylase. M.D. Asencion Diez, A.E. Cereijo, A. Demonte, M. Ballicora, A.A. Iglesias, *Instituto de Agrobiotecnologia del Litoral, Argentina and Loyola University at Chicago*

B239 **765.15** The Regulatory Subunit Type Iα of Protein Kinase A: A Study of Carney Complex and Acrodysostosis Mutations J.C. Del Rio, C.R. Nielsen, S.S. Taylor, *UC San Diego*

B240 **765.16** Negative Allosteric Regulation of a Serine Hydrolase by Divalent Metal Cations. G.C. Hoops, *Butler University*

B241 **765.17** Role of the Inter-Subunit Surface Interaction in the Regulation of the ADP-Glucose Pyrophosphorylase from *Agrobacterium tumefaciens*. H.P. Patel, E. Dobrzynski, D. Liu, M.A. Ballicora, *Loyola University of Chicago*

B242 **765.18** Divergent Mechanisms of Allosteric Regulation of Pyruvate Carboxylase by Acetyl Coenzyme A. Y. Liu, M. St.Maurice, *Marquette University*

B243 **765.19** Probing the Role of N- and C-Terminal Regions in Allosteric Regulation of *Thermodesulfovibrio yellowstonii* ADP-Glucose Pyrophosphorylase. E. Yik, S. Kaur, E. Pushkarev, E. Mercado, M. Collazo, D. Cascio, H. Axelrod, C.R. Meyer, *California State University, Fullerton and UCLA*

B244 **765.20** Structure/Function Studies of Diverse Forms of ADPGlucose Pyrophosphorylase. C.R. Meyer, L. Ong, C. Vu, H. Axelrod, A. Orry, *California State University, Fullerton and MolSoft LLC*

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Chemical Biology of Natural Products and Small Molecules

B245 **766.1** Identification of Tumor Necrosis Factor-α Inhibitors from the Traditionally Used Chinese Plant *Mappianthus iodoides*. M. Garrison, H. Park, M. Wright, A. Farone, *Middle Tennessee State University*

B246 **766.2** Biosynthetic Studies of the Antibiotic Uncialamycin. H. Hindra, T. Huang, D. Yang, X. Yan, H. Ge, B. Shen, *The Scripps Research Institute*

B247 **766.3** Mechanisms by Which Plant Extracts Delay Aging in Yeast by Targeting Certain Signaling Pathways and Modulating Lipid Metabolism. V. Titorenko, V. Lutchman, Y. Medkour, A. Arlia-Ciommo, P. Dakik, M. McAuley, *Concordia University, Canada*

B248 **766.4** Distracting the Hungry: Mosquito Anosmia-Inducing and Odor Perception-Enhancing Compounds of Natural Origin Targeting ORco Function for Control of Transmission of Malaria and Other Mosquito-Borne Infectious Diseases. K. Iatrou, P. Tsitoura, M. Konstantopoulou, *National Centre for Scientific Research "Demokritos", Greece*

B249 **766.5** The Effects of Silibinin on Colorectal Cancer Cell Line. M.A. Horita, U. Ezekiel, *Saint Louis University*

B250 **766.6** High-Throughput Natural Products Discovery in Fungi Using FAC-MS Technology. K.D. Clevenger, J.W. Bok, R. Ye, G.P. Miley, M.H. Verdan, T. Velk, C. Chen, K. Yang, P. Gao, M. Robey, M. Lamprecht, P.M. Thomas, M.N. Islam, J. Palmer, C.C. Wu, N.P. Keller, N.L. Kelleher, *Northwestern University, University of Wisconsin at Madison, Intact Genomics, Inc and U.S. Forest Service*

B251 **766.7** *Annona senegalensis* Shows Potent Anti-Diabetic Activity by Attenuating DNA Fragmentation in Oxidative Injury and Inhibiting Key-Enzymes Linked to Type 2 Diabetes. O.L. Erukainure, S. Islam, *University of KwaZulu-Natal, South Africa*

B252 **766.8** Deciphering the Function of NTF2-Like Proteins Associated with Polyketide Biosynthesis in Actinomycetes. N. Vuksanovic, X. Zhu, N.R. Silvaggi, C.E. Melançon III, *University of Wisconsin-Milwaukee and University of New Mexico*

B253 **766.9** Abscisic Acid/Dormin, a Plant Hormone That Inhibits Angiogenesis *in Vitro* and Neovascular Growth *in Vivo*. J.Y. Chaqour, S. Lee, B. Chaqour, *High Technology HS and SUNY Downstate Medical Center*

B254 **766.10** Structure Revision and Biological Evaluation of Artabonatine A and Its Diastereoisomer. A. Ku, G. Cuny, *University of Houston*

B255 **766.11** Relationship in Broccoli Between Genetic Mapping and Small Molecule Profiling Using NMR Spectroscopy K. Knagge, G. Yousef, J. Winnike, K. Blankenship, A. Thomas, A. Brown, *David H Murdock Research Institute, North Carolina State University*

B256 **766.12** Microarray and Pathway Analysis of Prostate Cancer Tumors Treated with Andrographolide. I.S. Forestier-Roman, M. Sánchez, K. Rohena, H. Ortiz-Zuazaga, M. Martínez-Ferrer, *University of Puerto Rico Comprehensive Cancer Center, Puerto Rico, University of Puerto Rico Medical Sciences Campus, Puerto Rico, University of Puerto Rico at Rio Piedras, Puerto Rico, School of Pharmacy and University of Puerto Rico Medical Sciences Campus, Puerto Rico*

B257 **766.13** Effects of Aspirin on Expression of Proteins Implicated in Airway Remodeling in Human Lung Fibroblasts. K. Geary, D. Hasenmeyer, F. Daghigh, *Philadelphia College of Osteopathic Medicine, Center for Chronic Disorders of Aging and PCOM*

B258 **766.14** Evaluation of Anti-Cancer Activity of Simplified Staurosporine Analogs. N. Neerukonda, E.T. Pelky, P. Mowery, *Hobart & Wm. Smith Colleges*

B259 **766.15** New Roles for Dithiolopyrrolones in Disrupting Bacterial Metal Homeostasis and Inhibiting Metalloenzymes. A.N. Chan, A.L. Shiver, W.J. Wever, S.Z. Razvi, M.F. Traxler, *University of North Carolina at Chapel Hill, University of California, San Francisco, University of North Carolina at Chapel Hill, Eshelman School of Pharmacy, Duke University, University of California, Berkeley*

B260 **766.16** Electrochemical Detection of Isatin Using Flow Injection Analysis with Amperometric Detection. S.W. Sanchez, R. Jarosova, G.M. Swain, *St. Mary's University and Michigan State University*

B261 **766.17** A Chemical Biology Approach to the Study of Coenzyme Q Biosynthesis and Metabolism. A. Nag, L. Fernandez, J.M. Villalba, J.N. Shepherd, O. Kwon, C.F. Clarke, *University of California, Los Angeles, Universidad de Córdoba, Spain and Gonzaga University*

B262 **766.18** Gene Expression Changes in Polyphenone E-Treated Primary Prostate and Prostate Cancer Cells. L. Carastro, R.A. Cordova, D.E. Barboto, R.A. Declet-Bauzo, I. Gushterova, N.K. Lago, N.E. Braganca, J.C. Burr, D.E. Hoffman, J.Y. Park, *University of Tampa, Universidad Central de Caribe and Moffitt Cancer Center & Research Institute*

B263 **766.19** Characterization of an Unprecedented Hybrid Pteridine-Nonribosomal Peptide Synthetase-Like Biosynthetic Gene Cluster. C.E. Perez, H. Park, K.W. Barber, J. Rinehart, J.M. Crawford, *Yale University and Yale School of Medicine*

B264 **766.20** Predicting Function of Class II Diterpene Cyclases in Bacterial Species Using a Sequence Similarity Network. C. Lemke, R. Nett, *Iowa State University*

B265 **766.21** Characterizing the Use of the RNA Mango Aptamer for RNA Pull-Downs and Single Molecule Fluorescence H.M. Poe, C. van der Feltz, X. Chen, P. Unrau, A. Hoskins, *University of Wisconsin - Madison and Simon Fraser University, Canada*

B266 **766.22** Predicting and Interpreting the Hofmeister Effects of Different Salts with Nucleic Bases and Aromatic Compounds Using Solubility Assay. R. Hong, L. Cheng, Y. Yao, B. Knowles, Y. Zhang, M. Kerins, I. Shkel, M. Record, *University of Wisconsin Madison*

B267 **766.23** Second Generation PS-ASO Internalization and Endosomal Escape. C. Miller, A. Egger, B. Kellar, B. Hass, P.P. Seth, E.N. Harris, *University of Nebraska-Lincoln and Ionis Pharmaceuticals Inc.*

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Chemical Probes, Biosensors and Biomarkers

B268 767.1 Probing the Charge and Conformational Requirements of JmjC Demethylases. G.W. Langley, A. Brinkø, M. Münzel, L.J. Walport, C.J. Schofield, R.J. Hopkinson, *University of Oxford, United Kingdom and Aarhus University, Denmark*

B269 767.2 Development of Algorithmic Techniques for Designing Electrochemical DNA Biosensors. A.J. Bonham, A.J. Bulow, *Metropolitan State University of Denver*

B270 767.3 Development of Red Fluorescent Protein pH Sensors. M. Rajendran, E. Haynes, B. Claywell, U. Scales, C. Henning, M. Tantama, *Purdue University*

B271 767.4 Chemoenzymatic Synthesis of Bioorthogonal Peptidoglycan Derivatives: Tools to Remodel Bacterial Cell Wall. Z. Jones, *University of Delaware*

B272 767.5 An Inexpensive and Effective Aptamer-Based Evanescent Wave Biosensor. I. Mazin, A.J. Bonham, *Metropolitan State University of Denver*

B273 767.6 Lanthanide-Based FRET Biosensors for Time-Gated Imaging and Detection of Protein-Protein Interactions in Live Mammalian Cells. T. Chen, H. Pham, L. Miller, *UIC*

B274 767.7 Measuring Oxytocin Hormone and Oxytocin-Reactive Autoantibodies to Determine Their Correlation with the Severity of Clinical Depression. S.E. Thompson, A.J. Russo, *Hartwick College*

B275 767.8 Multiplexing Metabolomic-Based Disease Diagnosis by Surface Enhanced Raman Spectroscopy (SERS) Platform. Y. Chen, L.D. Ziegler, *Boston University*

B276 767.9 Biosensor Diagnostic for Congestive Heart Failure via Detection of B-Type Natriuretic Peptide. N. Dubchak, A.J. Bonham, *Metropolitan State University of Denver*

B277 767.10 Serological Diagnosis of *Mycoplasma* via Lipoprotein Specific Electrochemical Biosensor. J. Jacobs, A.J. Bonham, *Metropolitan State University of Denver*

B278 767.11 Global Substrate Specificity of Mycobacterial Serine Hydrolases. R. Johnson, B. Bassett, B. Waibel, A. White, H. Hansen, D. Stephens, A. Koelper, G. Hoops, *Butler University*

B279 767.12 A Novel and Robust Series of Organelle Fluorescent Probes. G. Rigden, C. Tourville, D. Lewis, S. Hartsel, *University of Wisconsin-Eau Claire*

B280 767.13 ENOX2-Selective Aptamer Identification for an Electrochemical-Aptamer Biosensor in Cancer Diagnostics. L.C. Fetter, J. Jacobs, A.J. Bonham, *Metropolitan State University of Denver*

B281 767.14 Constructing Red-Shifted Fluorescent Protein Sensors of Cellular Redox Status. S. Norcross, K. Trull, J. Snaider, S. Doan, K. Tat, L. Huang, M. Tantama, *Purdue University*

B282 767.15 Building a Synthetic Library of Fluorogenic Ester Substrates to Analyze Serine Hydrolases. A. Koelper, R. Johnson, G. Hoops, *Butler University*

B283 767.16 Development of Ester-Protected Ethambutol Derivatives for Characterization of Mycobacterial Hydrolase Activity. E. Larsen, D. Stephens, R.J. Johnson, *Butler University*

B284 767.17 Development of an Arsenic Sensitive Bacterial Biosensor and San Diego Soil Testing. A. Magsumbol, M.S. Magee, J.J. Provost, *University of San Diego*

B285 767.18 Stereoelectronically Stabilized Flurogenic Probes for Esterase-Activated Biomolecule Imaging. H.R. Kilgore, W. Chyan, B. Gold, R.T. Raines, *University of Wisconsin- Madison*

B286 767.19 Withdrawn.

B287 767.20 High Dynamic-Range LRET Biosensors of Rac1. H.T. Pham, T. Chen, L. Miller, *University of Illinois at Chicago*

B288 767.21 Toward Cell-Permeable, Multi-Fluorophore Protein Labels for Enhanced LRET Imaging. M. H.Soflaee, C. Ivette Rivera Vera, L. Miller, *University of Illinois at Chicago*

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Proteomics (I)

B289 768.1 Nicotine-Induced Proteome of *Arthrobacter nicotinovorans* pAO1+. M. Mihasan, C. Babii, C.C. Darie, *Alexandru Ioan Cuza University of Iasi, Romania and Clarkson University*

B290 768.2 There Are Still Proteins in Rat Urine After 7-Day Starvation. F. Zhang, Y. Yuan, Y. Ni, Y. Gao, *Institute of Basic Medical Sciences Chinese Academy of Medical Sciences, School of Basic Medicine Peking Union Medical College, People's Republic of China, Beijing Normal University, People's Republic of China*

B291 768.3 Investigation of Induced Obstructive Sleep Apnea (OSA) in Rat Atria Using Mass Spectrometry Based Proteomics. D. Channaveerappa, J. Lux, K.L. Wormwood, M. McLerie, B.K. Panama, C.C. Darie, *Clarkson University and Masonic Medical Research Laboratory*

B292 768.4 Temporal Quantitative Proteome Analysis Reveals Dynamic Change of Cellular and Secreted Protein Profiles of *Clostridium cellulovorans* Depending on Carbon Sources. A. Shunsuke, A. Wataru, K. Kouichi, U. Mitsuyoshi, *Kyoto University, Japan, Research Fellow of Japan Society for the Promotion of Science, Japan, Kyoto Integrated Science & Technology Bio Analysis Center, Japan, JST and PRESTO, Japan*

B293 768.5 Development of a High Throughput Extraction Procedure for Nuclei and Mitrochondria from Rat Tissues. B. Easparro, S. Garrett, J. Atwood, *Omni International*

B294 768.6 Proteomic Research on the Therapeutic Mechanism of Zhibai Dihuang Granule for Treating Hyperthyroidism Yin-Deficiency Rats. C. Liu, L. Mao, S. Yang, T. Jiang, C. Wang, Z. Chen, H. Tu, Z. Li, J. Li, *Zhejiang University, People's Republic of China*

B295 768.7 A High Serum Vanin-1 Phenotype Is Not Unique to Diving Marine Mammals. B.K. Boxall, K. Prager, B.A. Neely, J.O. Lloyd-Smith, F. Gulland, M.G. Janech, *College of Charleston, University of California, Los Angeles, National Institute of Standards and Technology, The Marine Mammal Center and Medical University of South Carolina*

B296 768.8 Quantifying Protein Dephosphoylation as a Function of Mechanical Sample Disruption Techniques Toward an Optimized Sample Prep Protocol for Phosphoproteomics. S. Garrett, J. Atwood, B. Easparro, *Omni International*

B297 768.9 Global Proteomics Assay of Ubiquitin-Knockout Strains of Yeast. A. Hanse, C. Minogue, E. Cooper, *Hartwick College*

B298 768.10 Effect of Zhibai Dihuang Granule on Anti-Inflammatory Proteins Associated with Yin Deficiency Heat Syndrome. L. Mao, C. Liu, T. Jiang, C. Wang, Z. Chen, J. Li, *Zhejiang University, People's Republic of China*

B299 768.11 Pathogenesis of AMI Revealed by Integrative Global Transcriptomics and Proteomics Analysis. Y. Wang, W. Lin, C. Nugent, S. Gao, Z. Ma, R. Zhu, C. Li, L. Zhu, W. Wang, *Beijing University of Chinese Medicine, People's Republic of China, Key Lab of Computational Biology, CAS-MPG Partner Institute for Computational Biology, People's Republic of China, Digestive Diseases and Nutrition Center, Department of Bioinformatics, School of Life Sciences and Technology, People's Republic of China, Genome, Environment and Microbiome Community of Excellence, People's Republic of China*

B300 **768.12** Screening and Identification of Novel Serum Potential Biomarkers for Pulmonary Tuberculosis by iTRAQ-2D LC-MS/MS. T. Jiang, L. Shi, X. Li, L. Wei, S. Yang, C. Wang, C. Liu, Z. Chen, H. Tu, Z. Li, J. Li, *South China University of Technology School of Medicine, People's Republic of China, Department of Clinical Laboratory, Zhejiang Hospital, People's Republic of China, Zhejiang Province People's Hospital, People's Republic of China, Shaoxing Municipal Hospital, People's Republic of China, Zhejiang University, People's Republic of China*

B301 **768.13** Over-Expression and Association of Serum PPIA, vwf, and FXIIIa with a Systemic Hypercoagulable State in Patients with Pulmonary Tuberculosis. Z. Chen, T. Jiang, L. Wei, X. Li, L. Shi, M. Li, C. Liu, H. Tu, S. Yang, J. Chen, J. Li, *Institute of Cell Biology, Zhejiang University, People's Republic of China, Shaoxing Municipal Hospital, People's Republic of China, 468 Yan'an Road, Shaoxing, People's Republic of China, Zhejiang Hospital, People's Republic of China*

B302 **768.14** Proteomics Analysis of Tea Tree Oil-Selected *Staphylococcus aureus* Small Colony Variant. N.J. Torres, S.D. Hartson, J. Rogers, K.A. Abdulhafid, J.E. Gustafson, *Oklahoma State University*

B303 **768.15** Assessment of the Effects of Pollutants in the Great Lakes on the Human Proteome. E. Dupree, B. Crimmins, T. Holsen, J. Pagano, B. Thompson, K. Christensen, M. Raymond, C. Darie, *Clarkson University, SUNY Oswego and Wisconsin Department of Health Services*

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Metabolomics

B304 **769.1** Alcohol's Effect on the Metabolome and CCL2. C.W. Berndt, P. Schumann, A. Dunn, J. Bray, J. Lawrence, *University of Wisconsin - Stevens Point*

B305 **769.2** Integrated Metabolomic Studies on Health Effects of Oxidized Tyrosine Administration in Female Mice. Y. Yang, B. Yan, T. Zhang, Y. Gao, Y. Shi, G. Le, *The Laboratory of Food Nutrition and Functional Factors, People's Republic of China*

B306 **769.3** PathQuant: A Bioinformatic Tool to Quantitatively Annotate the Relationship Between Genes and Metabolites Through Metabolic Pathway Mapping. S. Therrien-Laperrière, S. Cherkaoui, G. Boucher, T. Consortium, F. Jourdan, G. Lettre, J. Rioux, C. Des Rosiers, *Montreal Heart Institute, Canada, University of Montreal, Canada, Institute of Molecular Systems Biology, ETH Zürich, Switzerland, INRA and Toulouse University, France*

B307 **769.4** High Resolution Mass Spectrometry Coupled with Multivariate Data Analysis Revealing Plasma Lipidomic Alteration in Patients with Colorectal Cancer. P. 'de Oliveira Carvalho, M.F. Messias, G.C. Mecatti, C.F. Angolini, *Sao Francisco University, Brazil and University of Campinas, Brazil*

B308 **769.5** Effects of PCBs Exposure on Modulation of Bile Acid Profile and Intestinal Microbiota in Mice. S.L. Cheng, D.Z. Fu, X. Li, K. Khayi, H-J. Lehmler, J.Y. Cui, *University of Washington and University of Iowa*

B309 **769.6** Age- And Species-Specific Activation of CAR on Bile Acid Homeostasis in Mice. S.L. Cheng, K. Buckley, D. Rizzolo, B. Buckley, G.L. Guo, J. Cui, *University of Washington and Rutgers University*

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Protein Kinases

B310 **770.1** Identifying the Structural Determinants of Negative Cooperativity in Phosphagen Kinases. K.L. Stock, G. Kerwood, D.L. Fraga, *College of Wooster*

B311 **770.2** O-GlcNAcylation of the Human Kinome. X. Liu, G. Han, A. Pandey, G. Hart, *Johns Hopkins University*

B312 **770.3** Calcium Signals Alter the Mobility and Localization of CaMKIIδ in Cardiomyocytes. B.M. Wood, S. Galice, D.M. Bers, J. Bossuyt, *UC Davis*

B313 **770.4** Role of an Abscisic Acid-Activated Protein Kinase in Drought Response in Soybean Revealed by RNA-Seq. S.K. Sah, G. Popescu, K.R. Reddy, V. Klink, J. Li, *Mississippi State University*

B314 **770.5** Subcellular Localization and Functional Characterization of cAMP-Dependent Protein Kinase A Isoforms: Painting Specificity by Mosaic Brain Mapping. R. Ilouz, V. Lev Ram, M. Ellisman, S. Taylor, *UCSD*

B315 **770.6** AMPK-Related Kinase MPK38/MELK Potentiates p21-Mediated Apoptosis, Cell Cycle Arrest, and Inhibition of Adipocyte Differentiation via Thr55 Phosphorylation H. Ha, H. Seong, R. Manoharan, *Chungbuk National University, Republic of Korea, and University of Madras, India*

B316 **770.7** Cancer-Related Mutations of ERK3 Promotes Cancer Cell Invasiveness. H. Alsaran, L. Elkhadragy, W. Long, *Wright State University*

B317 **770.8** Structural Elucidation of the Binding of the Vav-SH2 Domain to the EphA2 Cytoplasmic Region. K. Zhang, J. Ma, C.B. Post, C.V. Stauffacher, *Purdue University*

B318 **770.9** A Platform for Delivery of Isoform Selective Inhibitors with *in Vivo* Efficacy and Safety: Case Study That Revised Prevailing Perspectives on Active Site Targeting and Delivered a Novel Drug Candidate. S.M. Roy, V. Tokars, D.M. Watterson, *Northwestern University*

B319 **770.10** High-Throughput, Fluorescent Analysis of Reactive Oxygen Species in *C. elegans* After Knockdown of *mrck-1*. C. Brown, R. Heying, M. Russo, S. Rigoulot, P. Erickson, *Salisbury University and Virginia Tech*

B320 **770.11** Fyn Regulates Cyclic-AMP Dependent Protein Kinase a Binding Interactions. S.A. Barritt, M.E. Weir, B.A. Ballif, P.B. Deming, *University of Vermont*

B321 **770.12** Novel Molecular Interaction Between Cyclic-AMP Dependent Protein Kinase A Holoenzymes and La-Related Protein 4. K.T. O'Toole, P.B. Deming, *University of Vermont*

B322 **770.13** Biochemical Study of a Cancer Driver Fusion Protein, DnaJB1-PKA. T. Lu, P. Zhang, M. Cianfrocco, S. Simon, A. Leschziner, S. Taylor, *University of California, San Diego, National Cancer Institute, Rockefeller University and UCSD*

B323 **770.14** Understanding the Effects of Arginine Kinase Gene Deletion on Mitochondrial Volume in *Caenorhabditis elegans*. M.A. Beal, D. Fraga, K. Timar, *College of Wooster*

B324 **770.15** PKA Subunit Balance Plays a Key Role in Lipolysis. Y. Ji, J. Lee, J. Han, J. Kong, J. Kim, *Department of Biological Sciences, Institute of Molecular Biology and Genetics, Seoul National University, Republic of Korea*

B325 **770.16** Spatial Organization of a cAMP/Ca2+-Regulated Signaling Complex: A Solution Structural Small-Angle X-Ray and Neutron Scattering Study of an AKAP79-Scaffolded Complex Containing Type IIbeta PKA and Calcineurin. J.E. Hall, J. Copps, P. Zhang, A. Heck, D. Blumenthal, S. Taylor, *UC San Diego, The Scripps Research Institute, Utrecht Institute for Pharmaceutical Sciences, Netherlands and University of Utah*

B326 **770.17** The Secret Life of Kinases: Insights into Non-Catalytic Functions from Pseudokinases. J.M. Murphy, E.J. Petrie, K. Davies, M.C. Tanzer, A.V. Jacobsen, J.M. Hildebrand, I.S. Lucet, J. Silke, P.E. Czabotar, *Walter and Eliza Hall Institute of Medical Research, Australia*

B327 **770.18** Importance of "Single Turnover Reaction" in Protein Kinase A Signaling. L.G. Ahuja, J. Wu, P. Zhang, S. Taylor, *University of California San Diego and National Cancer Institute*

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B328 771.1 Insight Into the Mechanism and Structural Basis for Autoinhibition of PTEN by Phosphorylation of Its C-Terminal Tail. D.R. Dempsey, Z. Chen, S. Thomas, D. Hayward, D. Bolduc, P. Cole, *Johns Hopkins University*

B329 771.2 At the Crossroads Between TYR and SER/THR Signaling: A New Paradigm in the Regulation of PP2A by SRC Kinase. E. Sontag, J. Sontag, R.J. Gomez, A. Hoffman, G. Taleski, M.D. Mazalouskas, S.K. Hanks, I. Frohner, E. Ogris, B.E. Wadzinski, *University of Newcastle, Australia, Vanderbilt University School of Medicine and Medical University of Vienna, Austria*

B330 771.3 The Phosphatase PRL-3 as a Novel Drug Target in T-Cell Acute Lymphoblastic Leukemia. M. Wei, H. Jing, J. Liu, C. Wang, J. Blackburn, *University of Kentucky*

B331 771.4 Cyclosporin A-Induced Calcineurin Isoform Specific Matrix Metalloproteinases (MMP2 and MMP9) Expression in Renal Fibroblasts. C.E. Francis, Y. Bai, *Philadelphia College of Osteopathic Medicine*

B332 771.5 Uncovering Novel Substrates and Functions for the Calcineurin Phosphatase in Human Cells. C.P. Wigington, J. Roy, N.P. Damle, S. Ei Cho, N. Davey, Y. Ivarsson, C. Wong, A. Gingras, M.S. Cyert, *Stanford University, University College Dublin, Ireland, Uppsala University, Sweden and University of Toronto, Canada*

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B333 772.1 STIM1 Interacts with the Voltage Sensor (L-Channel) of L6 Skeletal Muscle Cell Cultures. S. Pitake, R.S. Ochs, *St. John's University*

B334 772.2 Transient Receptor Potential Vanilloid 4 (TRPV4) Regulates Fibroblast Differentiation *in Vitro* and *D. farinae*-Induced Airway Remodeling in Asthma *in Vivo* via Modulation of Matrix Synthesis and Matrix Degradation Mechanisms. F.C. Gombedza, V. Kondeti, N. Al-Azzam, C. Thodeti, S. Paruchuri, *University of Akron and Northeast Ohio Medical University*

B335 772.3 NADPH Oxidase 4 Expression Is Increased Through TRPV4 Channel In *D. farinae*-Induced Airway Remodeling and TGF-β1-Mediated Fibroblast Differentiation Into Myofibroblasts. N.Z. Al-Azzam, F. Gombedza, M. Snyderman, C. Thodeti, S. Paruchuri, *University of Akron and Northeast Ohio Medical School*

B336 772.4 Up-Regulation of Atrial and Neuronal Kir3 Activity by Cholesterol. A. Rosenhouse-Dantsker, A.N. Bukiya, *University of Illinois at Chicago and The University of Tennessee Health Science Center*

B337 772.5 Fluorescence Investigations of the Rate-Limiting Step in the HCN Ion Channel Deactivation Pathway. K.E. Magee, T.W. Claydon, E.C. Young, *Simon Fraser University, Canada*

B338 772.6 Identification of TRPP2 Binding Partners in Mice Tissues. C. Ng, Y. Yu, *St. John's University*

B339 772.7 Purification and Crystallization of the C-Terminal Interaction Domains of TRPP Ion Channel Proteins. H.R. Martin, Z. 'Agbaje, Y. Yu, *St. John's University*

B340 772.8 Identification of Extracellular Residues Critical to the Epithelial Sodium Channel. T.Y. Dismuke, R. Booth, *Texas State University and University of the Incarnate Word*

B341 772.9 Identification of Accessory Proteins Impacting the Function of the Epithelial Sodium Channel (ENaC). T. Adewunmi, R. Booth, *Texas State University and University of the Incarnate Word*

B342 772.10 Disrupted BK_{Ca} Channel β1 Subunit Gene Contributes to Vascular Dysfunction in Pulmonary Hypertension. E.A. Barnes, C. Chen, L. Lee, S.L. Barnes, D.N. Cornfield, *Stanford University*

B343 772.11 5-Flurouracil Disrupts Nuclear Transport During Apoptosis in a Calcium Dependent Manner. J.A. Koper, K. Higby, L. Foltz, K. Resendes, *Westminster College*

B344 772.12 Piezo1 Mediated Mechanotransduction of Wall Shear Stress Activates Ca^{2+} Gating Secondary to Src Phosphorylation of Piezo1 and Induces Angiogenesis H. Kang, M. Mittal, A. Karginov, Y. Komarova, D. Mehta, A. Malik, *University of Illinois College of Medicine*

B345 772.13 Regulation of the *Arabidopsis thaliana* Ca^{2+}-Dependent Protein Kinase, CPK28, by Autophosphorylation and Calmodulin-Binding. K.W. Bender, R.E. Zielinski, S.C. Huber, *University of Illinois at Urbana-Champaign and USDA-Agricultural Research Service*

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B346 773.1 The Intrinsically Disordered Membrane Enzymes Selenoprotein S and Selenoprotein K. S. Rozovsky, J. Liu, Z. Zhang, *University of Delaware*

B347 773.2 The Nucleotide Exchange Factor Sil1 Modulates Redox Signaling Through the Molecular Chaperone BiP. K. Siegenthaler, K. Pareja, J. Wang, C. Sevier, *Cornell University*

B348 773.3 A Novel Mediator of Heart Failure Development and Progression. S. Miriyala, M. Panchatcharam, M. Chandra, B. Maxey, w. Orr, L. Harrison, K. McCarthy, S. Bhuiyan, C. Kevil, *LSUH-SC-Shreveport*

B349 773.4 Hydrogen Sulfide Homeostasis and Signaling in Normal and Neoplastic Intestinal Cells. M. Libiad, N. Sakamoto, E. Fearon, R. Banerjee, *University of Michigan*

B350 773.5 Lipid-Derived Electrophiles Regulate Isoform-Specific Redox-Dependent Kinase Signaling. S. Surya, S. Parvez, M.J. Long, Y. Zhao, J. Haegele, P. Huang, Y. Aye, *Cornell University and Weill Cornell Medicine*

B351 773.6 4-Hydroxy-2-Nonenal (HNE), a Product of Lipid Peroxidation, Induces Tissue Factor Decryption by Modulating Thioredoxin System and Mitochondrial Ros Generation Independently. S.A. Ansari, U.R. Pendurthi, L.M. 'Rao, *University of Texas Health Science Center at Tyler*

B352 773.7 Hydrogen Sulfide Oxidation by Myoglobin. T.M. Bostelaar, *University of Michigan*

B353 773.8 Characterization of Glutathione Flux Between Subcellular Compartments. C.E. Outten, M. Darch, C. McGee, *University of South Carolina*

B354 773.9 Molecular Basis for Redox Regulation of the Src Kinase. D.E. Heppner, C.M. Dustin, C. Liao, M. Hristova, B. Deng, Y. Lam, J. Li, A. van der Vliet, *University of Vermont*

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B355 774.1 Enhanced Aggressiveness of Bystander Cells in an Anti-Tumor Photodynamic Therapy Model: Role of Nitric Oxide Produced by Targeted Cells. A. Girotti, J. Bazak, J. Fahey, W. Korytowski, *Medical College of Wisconsin and Jagiellonian University, Poland*

B356 774.2 H/D Exchange Mass Spectrometry Reveals Calmodulin-Controlled Regulatory Interactions in Neuronal Nitric Oxide Synthase. J.R. Carley, M.F. Barrett, T.J. Gilbreath, E.S. Underbakke, *Iowa State University*

B357 774.3 Mapping Calmodulin-Induced Oxidase Domain Interactions of Neuronal Nitric Oxide Synthase Using H/D Exchange Mass Spectrometry. M.F. Barrett, J.R. Carley, E.S. Underbakke, *Iowa State University*

B358 774.4 Stay on Target: Deconvoluting Mixed Redox Messages Through Precision Redox Targeting. Y. Aye, *Cornell U & Weill Cornell Med*

B359 774.5 Cation-Independent Mannose 6-Phosphate Receptor Interacts with Several Components of the Plasminogen Activation System. R. Bohnsack, J. Miller, S. Twining, L. Olson, N. Dahms, *Medical College of Wisconsin*

B360 774.6 Probing the Activation Mechanism of BAK in Mitochondrial Apoptosis. M. Tesney, G. Singh, C. Guibao, T. Moldoveanu, *Winthrop University and St. Jude Children's Research Hospital*

B361 774.7 Inhibition of Apoptosis in Glutamine-Starved Mouse Hybridoma Cells by Ammonium Ions and DON, a Glutamine Analog. E.R. Gauthier, C. Zhou, A. Abusneina, *Laurentian University, Canada*

B362 774.8 Interaction Between FAM129B, a Novel Adherent Junction Protein, and KELCH-Like Associated Protein 1 (KEAP1) Suppresses Apoptosis in Cancer Cells. F.A. Hachem, S.A. Chen, H.G. Evans, D.R. Evans, *Wayne State University and Eastern Michigan University*

B363 774.9 Pro-Death Bax Has an Intrinsic Capability to Induce Aggregate-Dependent Caspase 8-Mediated Cell Death. A. Manas, S. Wang, J. Li, A. Nelson, A. Davis, S. Lamerand, H. Zhang, J. Xiang, *Illinois Institute of Technology and University of Chicago*

B364 774.10 Induction of Apoptosis in Carcinoma Cells: Perhaps It Is Right Way to Kill the Metastatic Process. S. Basu, M. Basu, R. Ma, J. Moskal, *University of Notre Dame, Siemens Corp., People's Republic of China, and Northwestern University*

B365 774.11 Gene Expression of SEB-Induced C-Jun N-Terminal Kinase Apoptosis Pathway in Human PBMCs. M. Hendricks, D. Borgos, J. Butzen, A. Watson, C. Mendis, M. Jett, *University of Wisconsin Platteville and Systems Biology Enterprise U.S. Army Medical Command (MEDCOM)*

B366 774.12 Post-Transcriptional Modulation of MCL1 by PTBP1 Regulates Cellular Apoptosis Induced by Antitubulin Chemotherapeutics. J. Cui, W.J. Placzek, *University of Alabama at Birmingham*

B367 774.13 Genetic Characterization of Programmed Cell Death in Aneuploid Yeast Cells. M. Sanborn, V. Timmel, J. Barrios, T. McBride, R.S. Pinches, N. Austriaco; O.P., *Providence College*

B368 774.14 The Effect of Compound L19 on Human Colorectal Cells (DLD-1). S. Mohammadhosseinpour, B. Clack, *Stephen F. Austin State University*

B369 774.15 Intracellular Zinc Trafficking and Metallothionein Gene Activation in HUVEC Treated with *Crotalus atrox* Venom. E. Albrecht, V. Garbar, S. Tomlins, E. Williams, *Kennesaw State University and University of Michigan Medical School*

B370 774.16 Activation of Caspase-8/BID Pathway in Dexamethasone-Induced Apoptosis in a Human Lens Epithelial Cell Line. M.S. Ali, *William Beaumont Army Medical Center*

B371 774.17 Misoprostol-Induced Activation of NF-κB Functions to Repress the Bnip3 Cell Death Pathway in Neonatal Hypoxia. M.D. Martens, J. Field, Y. Hai, W. Mughal, S. da Silva Rosa, C. Blaney, T. Ivanco, W. Diehl-Jones, J.W. Gordon, *University of Manitoba, Canada*

B372 774.18 Antioxidant and Anti-Proliferative Activity of Fractions from *Anona senegalensis Pers* (Annonaceae) Stem Bark on HeLa Cells. R.A. Adisa, G.T. Getti, S.C. Richardson, *University of Lagos, Nigeria and University of Greenwich, United Kingdom*

B373 774.19 Understanding the Role of BCL-2 Proteins in Hyperglycemia-Induced Apoptosis in Cardiomyocytes. S. Miller, V. Del Gaizo Moore, *Elon University*

B374 774.20 The NPM1 Inhibitor NSC348884 Induces Apoptosis in Neuroblastoma Cells. K. Kristjansdottir, N. Akgul, K. Vlcek, *Midwestern University*

B375 774.21 Effect of Methyglyoxal and Curcumin on PC12 and RINm5f Cells. V. Puccini de Castro, S. Keys, J. Su, S. Mungre, *Northeastern Illinois University*

B376 774.22 Bcl-2 Dependency in Cell Culture and Mouse Models of Sepsis-Associated Acute Kidney Injury. K.A. Lynch, V. Del Gaizo Moore, *Elon University*

B377 774.23 NF-κB Promotes Alternative Splicing of Bnip3 During the Cellular Adaptation to Hypoxia. J. Field, M. Martens, W. Mughal, S. da Silva Rosa, J. Gordon, W. Diehl-Jones, *University of Manitoba, Canada and Athabasca University, Canada*

B378 774.24 Synthesis of a Novel Endoperoxide and Evaluation of the Drug's Ability to Induce Apoptosis in Colon Cancer Cells. J.R. Devlin, E.S. Gornick, T.R. Vavrek, D.M. Rubush, J. Sarathy, *Benedictine University*

B379 774.25 Analysis of the Functional Relationship Between the Kaposi Sarcoma-Associated Herpesvirus (KSHV) VBcl-2 Protein and the Pro-Apoptotic Host Protein, BIK. K. Hixon, J. Roecklein-Canfield, *Simmons College*

B380 774.26 A Flow Cytometry Analysis of Apoptosis Reversibility in Mammalian Lymphocytes Following Cytokine Deprivation. A. Parnes, R. Lauzon, *Union College*

B381 774.27 UV Irradiation/Cold Shock-Induced Bubbling Death Is Ca^{2+}-Dependent. C-C. Tsai, Y-W. Chen, N-S. Chang, *National Cheng Kung University College of Medicine, Taiwan*

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B382 775.1 Mortalin Modulates MEK/ERK Activity by Regulating the Physical Interaction Between MEK1/2 and Protein Phosphatase 1 Alpha. P. Wu, *Medical College of Wisconsin*

B383 775.2 Targeting Cancer Progression Genes Upregulated in CREBL1-Deficient Breast Cancer Cells. S. Smith, F. Goubran, P. Mellor, D. Anderson, *University of Saskatchewan, Canada*

B384 775.3 Manipulating the Bone Marrow Microenvironment to Prevent Survival of AML Cells. R.M. Sterner, K.N. Kremer, A. Dudakovic, J.J. Westendorf, A.J. van Wijnen, K.E. Hedin, *Mayo Clinic*

B385 775.4 Leveraging Synthetic Lethality to Target Convergent Therapeutic Resistance. K.C. Wood, *Duke University*

B386 775.5 ATG5 Knockout Leads to Malignant Cell Transformation and Resistance to Src Family Kinase Inhibitor PP2. M. Lee, S. Hwang, *Incheon National University, Republic of Korea*

B387 775.6 Modelling the Effects of Laser Photothermal Therapy on Proteins HSP70 and P53. A. Milcarek, K. Daus, M. Alpaugh, T. Dobbins, *Rowan University*

B388 775.7 Pim-1 Signaling in Drug-Resistant Colon Cancer Cells Promotes Cell Survival and Chemoresistance Through Up-Regulation of Lactate Production. G. Park, D. Kim, *Kosin University College of Medicine, Republic of Korea, Inje University College of Medicine, Republic of Korea*

B389 775.8 Differential Inhibitory Effects of Nocodazole on Human Hematopoietic and Hepatocytic Cells and Their Stem/Progenitors in Culture. J. Baquier, H. Darrell, S. Brumaire, L. Schoonover, T. Hu, *Barry University*

B390 775.9 (A3)Beating Cancer: Impact of APOBEC3B on 5-Fluorouracil Treatment. S.R. Fine, *College of Wooster*

B391 775.10 Differential Phosphatidylserine Sensing by TAM Receptors Regulates AKT Dependent Chemoresistance and PD-L1 Expression in Epithelial Cells. C. Kasikara, S. Kumar, R. Birge, *Rutgers University*

B392 775.11 Overcoming Resistance to Anti-EGFR Therapy in Breast Cancer with Rac Inhibitors. L.D. Borrero-Garcia, A.L. Troche-Torres, M. Maldonado, S. Dharmawardhane, *University of Puerto Rico, Medical Sciences Campus, Puerto Rico, University of Puerto Rico and Rio Piedras Campus, Puerto Rico*

B393 775.12 Targeting Both Aberrant Metabolism and Cell Proliferation in Cancer Therapy. B. Gibbs, C.P. Masamha, *Butler University*

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B394 **775.13** CCN5/WISP-2 Activates Estrogen Receptor-α in Normal and Cancerous Breast Epithelial Cells and Sensitizes Them to Hormonal Therapy. S. Sarkar, A. Ghosh, S. Banerjee, G. Maity, A. Das, V. Gupta, I. Haque, O. Tawfik, M. Larson, S. Banerjee, *University of Kansas Medical Center, Kansas City VA Medical Center, Kansas City VA Medical Center and University of Calcutta, India*

B395 **775.14** Identification of Novel Variants of the CB_1 Cannabinoid Receptor in Cancer Cells. A. Yarbrough, S. Pyrek, L. Wood, A. Urbaniak, J. Bush, P. Prather, A. Radominska-Pandya, *University of Arkansas at Little Rock and University of Arkansas for Medical Science*

B396 **775.15** Attenuation of γ-Secretase Mediated Activation of Notch Signaling Induces Autophagic Cell Death in Triple Negative Breast Cancer Cells. A. Das, A. Ganguli, K. Narayanam, P. Mukherjee, B. Basu, U. Chatterjee, S. Banerjee, P. Karmakar, D. Kumar, G. Chakrabarti, *Jadavpur University, India, Calcutta University, India, University of California, Calcutta University, India, Amity University, India, VA Medical Center, University of Kansas Medical Center and Birla Institute of Science & Technology, India*

B397 **775.16** Activation of Cyr61 Signaling in Solid Tumor Cells Diminishes Response to a Histone Deacetylase Inhibitor: Challenges for HDACIs. A. Ghosh, P. Ghosh, G. Maity, S.K. Banerjee, S. Banerjee, *University of Kansas Medical Center and VA Medical Center*

B398 **775.17** Aspirin: A Regulator of Tumor Angiogenesis in Breast Cancer. G. Maity, J. Chakraborty, S. Banerjee, S.K. Banerjee, *Kansas University Medical Center, VA Medical Center and Blue Valley West High School*

B399 **775.18** Rosehip (*Rosa canina*) Extracts Prevent AKT and MAPK-Mediated Cell Proliferation in Triple Negative Breast Cancer Cells. P. Cagle, P. Martin, *North Carolina A & T State University*

B400 **775.19** SRC Regulates Proliferation in ER+ Breast Cancer Cells by Stabilizing *MYC* mRNA. C. Abdullah, H. Korkaya, S.A. Courtneidge, *Oregon Health & Science University, UC San Diego and Augusta University*

B401 **775.20** Gemcitabine-Induced Exosome Hypersecretion Increases the Chemoresistance and Migration of Pancreatic Cancer Cells. R. Sweeney, K.E. Richards, R. Hill, *University of Notre Dame and Harper Cancer Research Institute*

B402 **775.21** Using a CRISPER/Cas9 Knockout to Evaluate the Role of Furin in the Intoxication Pathway of P*seudomonas* Exotoxin A. J. Sanford, Y. Zhu, J. Weldon, *Towson University*

B403 **775.22** DDB2 Activates Rnf43 and Regulates Wnt/β-Catenin Signaling in Colorectal Cancer Cells. S. Huang, D. Fantini, B. Merrill, S. Bagchi, P. Raychaudhuri, *University of Illinois at Chicago, Northwestern University and Jesse Brown VA Medical Center*

B404 **775.23** Investigation of Affinity at Binding Site Between Human Epidermal Growth Factor Receptor 2 (HER2) and Herceptin. M. Kondrashova, B. Miller, *Truman State University*

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B405 **776.1** Genetic Variants of Tumor Necrosis Factor-α (rs1800629) Gene Enhances Susceptibility to Malaria Infection in West Africa. T. Snyder, J. Noble, R. Funwei, C. Falade, O. Ojurongbe, B.N. Thomas, *Rochester Institute of Technology and Ladoke Akintola University of Technology, Nigeria*

B406 **776.2** Extensive Interethnic Diversity of Cytokine Interleukin-10 Promoter Gene (rs1800872) Single Nucleotide Polymorphisms and Association with Malaria Infection. N. Aziz, S. Adedokun, T.J. Snyder, I. Farid, O. Ojurongbe, B. Thomas, *Rochester Institute of Technology, Rochester, NY, Ladoke Akintola University of Technology, Osogbo, Nigeria*

B407 **776.3** Evaluation of the Immune Response Induced in Mice by a Recombinant Form of SPO-1, a *Schistosoma mansoni* Modulatory Protein. W.D. Bernardes, C.C. Alves, R.A. Pereira, C.T. Fonseca, *Rene Rachou Research Center, Brazil*

B408 **776.4** Polar Lipid in Human Blood Regulates Stage Differentiation in the Human Malaria Parasite *Plasmodium falciparum*. J.P. Gerdt, N.M. Brancucci, C. Wang, S.R. Adapa, M. Zhang, J.H. Adams, R.H. Jiang, M. Marti, J. Clardy, *Harvard Medical School, University of Glasgow, United Kingdom, Harvard T.H. Chan School of Public Health and University of South Florida*

B409 **776.5** Genetic Mapping of Strain Specific Differences in Autophagy Effector Recruitment to the *Toxoplasma gondii* Parasitophorous Vacuole. J.B. Radke, L. Sibley, *Washington University School of Medicine*

B410 **776.6** Molecular Characterization and Pathogenicity of *Meloidogyne incognita* on Tomato Cultivars (*Solanum lycopersicon* L.). M. Abdulai, B.C. Cole, B. Fawole, *Akdeniz University, Turkey and University of Ibadan, Nigeria*

B411 **776.7** Overcoming Challenges in the Diagnosis of *Schistosoma mansoni* Infections Using POC Tests, Recombinant Protein and Monoclonal Antibody Technology. R.F. Queiroz, R. Cruz, M. Pedrosa, M. Oliveira, W. Jeremias, J. Assis, L. Coutinho, D. Taboada, V. Moraes, L. McEwen, D. Harn, P. Coelho, *FIOCRUZ, Brazil and University of Georgia*

B412 **776.8** Discovery Recovery Methods and Detection of Food Borne Parasites. A. Aralu, *University of Georgia*

B413 **776.9** *Toxoplasma gondii* Infection Reprograms Monocyte Adherence and Motility. L.L. Drewry, L. Sibley, *Washington University*

B414 **776.10** Fatty Acid Resource Allocation and the Survival of African Trypanosomes in the Host Bloodstream. K.S. Paul, C.A. McKnight, P.A. Vigueira, *Clemson University*

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B415 **777.1** Anti-Fluoroquinolone Resistance Activity of E558: A Natural Product. W.O. Iyanda-Joel, E.A. Omonigbehin, E.E. Iweala, S.N. Chinedu, *Covenant University, Nigeria*

B416 **777.2** Discrete Structural Dynamics of Pseudo-Palindromic Motifs Control DNA Binding of Bacterial Toxin-Antitoxin Complexes. D.E. Brodersen, K.L. Bendtsen, K. Xu, M. Luckmann, K. Winther, S.A. Shah, C.N. Pedersen, *Aarhus University, Denmark and University of Copenhagen, Denmark*

B417 **777.3** Genesis of Antibiotic Resistance XXII: Mutagenic Potential of the River Ganga (RG): Segment I, II, III-a,b,c, Vacate Hardy-Weinberg-Castle Equilibrium (HWCE), and Concoct as a Plausible Contributor to an Imminent Antibiotic Resistance Pandemic (ARP). M. Francisco, H. Montoya, J. Flores, C. Carbajal, C. Wickham, C. Lopez, D. Johnson; Jr., S. Kannan, *City of Eagle Pass Water Works and Southwest Texas Junior College*

B418 **777.4** Genesis of Antibiotic Resistance XXIII: The River Ganga (RG)-Segment IVB, Secede Hardy-Weinberg-Castle Equilibrium (HWCE), and Concoct as Cataclysmic Epicenter of Antibiotic Resistance Pandemic (ARP) F. Martinez, E. Fuentes, H. Montoya, J. Flores, C. Carbajal, C. Wickham, C. Lopez, D. Johnson; Jr., S. Kannan, *City of Eagle Pass Water Works and Southwest Texas Junior College*

B419 **777.5** Genesis of Antibiotic Resistance XXIV: Impediments in Implementation of Antibiotic Time Out (ATO) to Mitigate Antibiotic Resistance Pandemic (ARP): A Sniffle for Inclusive Approach. R. Lehler, A. Picazo, S. Blackmon, D. Asplaugh, R. Fielder, D. Johnson; Jr., S. Kannan, *Southwest Texas Junior College*

B420 **777.6** Genesis of Antibiotic Resistance XXI Non-Existent F-Tag-428 Implementation in Developing Countries, Exacerbate Genesis of Antibiotic Resistance (AR). C. Carbajal, E. Fuentes, C. Wickham, C. Lopez, D. Johnson; Jr., S. Kannan, *Southwest Texas Junior College*

B421 **777.7** Genesis of Antibiotic Resistance XXV: Mitigation of Antibiotics Resistance Pandemic (ARP) by Immediate Moratorium on Effluent Discharge Practices from Antibiotics Manufacturing Pharmaceutical Industry. C. Carbajal, E. Fuentes, C. Wickham, C. Lopez, D. Carrizales, T. Carrizales, S. Jauregui, R. Thomas, R. Lechler, J. Beautnagel, D. Johnson; Jr., S. Kannan, *Southwest Texas Junior College*

B422 777.8 Genesis of Antibiotic Resistance XXVI: Mitigation of Antibiotic Resistance Pandemic (ARP) by Obdurate Implementation of Guidelines at the International Border Crossing. C. Carbajal, A. Picazo, S. Gutierrez, S. Blackmon, G. Perez, A. Gonzalez, E. Fuentes, C. Wickham, C. Lopez, D. Johnson; Jr., S. Kannan, *Southwest Texas Junior College*

B423 777.9 Genesis of Antibiotic Resistance XXVII: Action Plan for Global Union for Antibiotics Research and Development (GUARD) to Mitigate AR Pandemic (ARP). E. Fuentes, C. Wickham, C. Carbajal, C. Lopez, S. Jauregui, R. Lechler, S. Gutierrez, S. Blackmon, A. Gonzalez, D. Johnson; Jr., S. Kannan, *Southwest Texas Junior College*

B424 777.10 Genesis of Antibiotic Resistance XXVIII: Mitigation of Antibiotic Resistance Pandemic (ARP) Through Obdurate Implementation of Antibiotics Time Out (ATO) J. Martinez, E. Anaya, M. Calzoncit, A. Moran, M. Francisco, H. Montoya, J. Flores, A. Picazo, S. Blackmon, S. Jauregui, R. Lechler, J. Beautnagel, S. Gutierrez, D. Johnson; Jr., S. Kannan, *Fort Duncan Reginal Medical Center, Southwest Texas Junior College and City of Eagle Pass Water Works*

B425 777.11 Genesis of Antibiotic Resistance XXIX: Clinical Perspectives of Obdurate Implementation of Antibiotics Time-Out (ATO) in Mitigating Antibiotic Resistance Pandemic (ARP) E. Anaya, J. Martinez, M. Calzoncit, A. Picazo, S. Blackmon, S. Jauregui, R. Lechler, J. Beautnagel, S. Gutierrez, D. Johnson; Jr., S. Kannan, *Fort Duncan Regional Medical Center and Southwest Texas Junior College*

B426 777.12 Genesis of Antibiotic Resistance (AR) XXX: Mitigation of AR Pandemic (ARP) Through Rational Measures. S. Blackmon, M. Francisco, H. Montoya, J. Flores, E. Anaya, J. Martinez, M. Calzoncit, A. Picazo, S. Jauregui, R. Lechler, J. Beautnagel, S. Gutierrez, D. Johnson; Jr., S. Kannan, *Southwest Texas Junior College, City of Eagle Pass Water Works and Fort Duncan Reginal Medical Center*

B427 777.13 Transformations of Antibiotics in Water Systems and the Impact on Specific Microbes. A. Beavan, A. Bhatnagar, Z. Henkes, J. Peller, S. Dick, *Valparaiso University*

B428 777.14 Gyrase Inhibition by Toxin-Antitoxin Modules. C.R. Bourne, J.C. White, S. Dabadi, M. Muthuramalingam, *University of Oklahoma*

B429 777.15 Isolation, Expression, and Characterization of a β-Lactamase Produced by *Meiothermus ruber.* L. Grulke, A. Bergstrom, T. Groen, E. Analitis, L. Scott, P. Crawford, *Augustana College*

B430 777.16 Withdrawn.

B431 777.17 *Streptococus mitis* and *Streptococcus oralis* Mutate an "Essential" Gene upon Exposure to Daptomycin. H. Adams, L. Joyce, Z. Guan, R. Akins, K. Palmer, *University of Texas at Dallas, Duke University Medical Center and Methodist Charlton Medical Center*

B432 777.18 Effects of Over-Expression of RecA on Transformation in *Bacillus subtilis.* S. Penumutchu, B. Korry, P. Belenky, *University of Maryland, Baltimore County and Brown University*

B433 777.19 Biochemical Characterization of Type II Toxin- Antitoxin Module from *Pseudomonas aeruginosa.* M. Muthuramalingam, J.C. White, C.R. Bourne, *University of Oklahoma*

B434 777.20 Synthesis and Antibacterial Activity of Novel Semi-Synthetic Triterpenoids. G. Da Silva, M. Pereira, J.D. Salvador, *Lab. of Microbiology, Fac. of Pharmacy, University of Coimbra, Portugal, Center for Neurosciences and Cell Biology, University of Coimbra, Portugal, Lab. of Pharmaceutical Chemistry, Fac. of Pharmacy and University of Coimbra, Portugal*

B435 777.21 New Delhi Metallo-Beta-Lactamase Variants NDM-4 and NDM-12 from *E. coli* Clinical Isolates Exhibit Increased Activity and Stability. C. Williams, J. VanPelt, R. Poth, K. Cottingim, A. Stewart, J.C. Nix, W. Fast, D.L. Tierney, M.W. Crowder, R.C. Page, *Miami University, University of Texas at Austin and Lawrence Berkeley National Laboratory*

B436 777.22 Multidrug Resistance and High Prevalence of Class 1 Integrons in *Escherichia coli* Isolated from Irrigation Water and Vegetables in Parts of Nsukka and Enugu, Nigeria. C.B. Chigor, I.I. Ibangha, V.C. Onuora, O.E. Omotosho, T. Chernikova, V.N. Chigor, P. Golyshin, *Chukwuemeka Odumegwu-Ojukwu University, Nigeria, University of Nigeria, Nigeria, Covenant University, Nigeria and Bangor University, United Kingdom*

B437 777.23 The Structure of EmrE and Its Role in Antibiotic Resistance. J. Kenana, B. Langat, C. Kalicki, E. Inthavong, A. Kanna, *Olathe North High School*

B438 777.24 Functional Analysis of *Toxoplasma gondii* cGMP-Dependent Protein Kinase Isoforms Using an Auxin-Inducible Degron System. K.M. Brown, S. Long, L. Sibley, *Washington University School of Medicine*

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Energy Metabolism, Oxidative Phosphorylation

B439 778.1 Determining the Rhodoquinone Biosynthetic Pathway in *Rhodospirillum rubrum* Using Gene Knock-Outs. A. Martin, J. Shepherd, *Gonzaga University*

B440 778.2 Effect of the Mitochondrial DNA 4977-bp "Common Deletion" on Metabolism and Cell Growth in Human Lymphoblast Cell Lines. C. Keck, M. Gulfo, R. O'Donnell, H. Hoops, W. Pogozelski, *SUNY Geneseo and Albert Einstein College of Medicine*

B441 778.3 Leigh Syndrome French Canadian Type Patient Fibroblasts Exhibit Energy Metabolism Adaptations Through a Warburg-Like Effect. Y. Mukaneza, A. Cohen, M. Rivard, J. Tardif, C. Laprise, C. Des Rosiers, L. Coderre, *Montreal Heart Institute, Canada, Université de Montréal, Canada, The Hebrew University of Jerusalem, Israel and Université de Québec à Chicoutimi, Canada*

B442 778.4 Increased N-Acetyltaurine in the Skeletal Muscle After Endurance Exercise. T. Miyazaki, Y. Nakamura, K. Ebina, S. Ra, K. Ishikura, H. Ohmori, T. Ikegami, Y. Matsuzaki, A. Honda, *Tokyo Medical University Ibaraki Medical Center, Japan, University of Tsukuba, Japan, Fukuoka University, Japan and Sojo University, Japan*

B443 778.5 Hydrodynamic Delivery of Isocitrate Dehydrogenase II for the Treatment of Acute Kidney Injury. A. Kolb, S. Atkinson, R. Bacallao, *Indiana University Purdue University Indianapolis, Roudebush VAMC and Indiana University School of Medicine*

B444 778.6 Elucidating the Biosynthetic Pathway of Rhodoquinone in *Caenorhabditis elegans.* S. Babcock, J. Shepherd, *Gonzaga University*

B445 778.7 Expression of Hepatic Acetyl-CoA Carboxylase (ACACA) in Mice (*Mus musculus*) Exposed *in Utero* to Atrazine. A. Wimmer, *Saint Mary's University of Minnesota*

B446 778.8 O-GlcNAc Is Critical for the Regulation of Energy Metabolism. E. Tan, S. McGreal, S. Graw, R. Tessman, S. Koppel, P. Dhakal, Z. Zhang, M. Machacek, M.J. Soares, N. Zachara, D. Koestler, K.R. Peterson, J.P. Thyfault, R.H. Swerdlow, P. Kasturi, U. Apte, C. Slawson, *University of Kansas Medical Center, The Johns Hopkins University of Medicine and University of Kansas Alzheimer's Disease Center*

B447 778.9 Stimulation of Astrocyte Fatty Acid Oxidation Increases Spare Respiratory Capacity Under Nutrient-Deprived Conditions. M. Sifuentes, J. Lechleiter, *University of Texas Health Science Center at San Antonio*

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Oxidative Stress and Reactive Oxygen

B448 779.1 Acute Oxidative Challenge Induces Glucose Uptake Through AMPK-Mediated NO Production in Skeletal Muscle. D.L. Kellogg, K. McCammon, B. Masters, L. Roman, *UTHSCSA and Duke University*

B449 779.2 S-Nitrosylation Is Responsible for Muscle Atrophy and Weakness in GNE Myopathy. M. Miyakawa, A. Cho, M.C. Malicdan, I. Nishino, S. Noguchi, *National Institute of Neuroscience, Japan, Ewha Womans University School of Medicine, Republic of Korea, National Institute of Health and National Institutes of Health*

Monday

B450 779.3 Inflammatory Stress Induces a Biphasic Nrf2 Activation in Neuronal Cells. S.A. Krepel, L. O'Hara, S. Mangum, M.B. Hogan, T.B. Kuhn, *University of Alaska Fairbanks and Fairbanks West Valley High School*

B451 779.4 Exploring the Role of Trehalose-6-Phosphate Synthase in Oxidation and Desiccation Stress Tolerance of *Fusarium verticillioides*. N.R. Oberlie, S.D. McMillan, P.N. Pierson, N.S. Bonich, D.W. Brown, K.L. McQuade, *Bradley University and USDA-ARS-NCAUR*

B452 779.5 Fruit Extract of *Thaumatococcus daniellii* Reduces Oxidative Stress in Rats. F.N. Iheagwam, S.N. Chinedu, O.C. Emiloju, A.C. Okenmuo, *Department of Biological Sciences, College of Science and Technology, Covenant University, Nigeria, Department of Biological Sciences, College of Science and Technology and Covenant University, Nigeria*

B453 779.6 Cross-Talks Between Intracellular Zinc Increases and Reactive Oxygen Species in Hypoxia. K. Slepchenko, Y.V. Li, *Ohio University*

B454 779.7 Effect of Maternal Separation on Oxidative and Nitrosative Stress in the Brain of Rat Offspring. A. Campos-Rangel, L. Torner-Aguilar, A. Saavedra-Molina, S. Manzo-Avalos, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico, Centro de Investigación Biomédica de Michoacán and IMSS, Mexico*

780
Diabetes, Obesity and Metabolic Syndrome (I)

B455 780.1 Lactotransferrin Prevents Hepatic Steatosis Through Inhibition of Hepatic Dietary Lipid Uptake in Hormone Disturbance Non-Alcoholic Fatty Liver Disease Model. S. Lee, B. Son, G. Park, W. Kim, H. Youn, B. Youn, *Pusan National University, Republic of Korea, and Sejong University, Republic of Korea*

B456 780.2 Adiponectin Receptor 1 Resists the Decline of Serum Osteocalcin and GPRC6A Expression in Ovariectomized Mice. Y. Lin, C. Chen, S. Wu, S. Ding, *National Taiwan University, Taiwan and Institute of Biotechnology, Taiwan*

B457 780.3 Use of a Three Dimensional Porcine Retinal Explant Model to Detect HIF1α for Understanding Diabetic Retinopathy B. Iwuagwu, S.F. Cruickshank, I. Rowe, R.M. Knott, *Robert Gordon University, United Kingdom*

B458 780.4 Niclosamide Blocks Glucagon Phosphorylation of Serine 552 on β-Catenin Leading to Decrease Target Genes Expression and Improve Glucose Metabolism via PKA Signalling Pathway. M.H. Chowdhury, M. Morris, N. Turner, L. Wu, P. Shepherd, G. Smith, *UNSW Australia and University of Auckland, New Zealand*

B459 780.5 Potential Role of Dietary Fat- and Obesity-Sensitive Adipose PKCbeta Signaling in Pathophysiology of Adipose Dysfunction. N.K. Mehta, W. Huang, *Northeastern Ohio College of Medicine and The Ohio State University College of Medicine*

B460 780.6 Diabetic Nephropathy Accelerated by Imbalance of Renal Renin-Angiotensin System Components in db/db Mice with High Fat Diet. G. Wang, C. Cho, C. Lin, H. Wu, C. Lin, *National Chiao Tung University, Taiwan and National Chia Yi University, Taiwan*

B461 780.7 Prohibitin Has Sex Dimorphic Role in Adipose and Immune Functions. Y. Xu, S. Ande, S. Mishra, *University of Manitoba, Canada*

B462 780.8 Regulation of Hepatic Inflammation by Folic Acid in Non-Alcoholic Fatty Liver Disease (NAFLD). V. Sid, Y. Shang, C. Siow, K. O, *University of Manitoba, Canada, CCARM, St. Boniface Research Center, Canada and Agriculture and Agri-Food Canada, Canada*

B463 780.9 Lack of Efficient Metabolism Adaption Caused Failure of Regenerative Cell-Based Therapy in a Rat Model of Metabolic Syndrome. A. Jamaiyar, W. Wan, D. Janota, M. Enrick, V. Ohanyan, L. Yin, W. Chilian, *Northeast Ohio Medical University and Kent State University*

B464 780.10 Impact of *VEGF* Gene Polymorphisms on Progression of Diabetic Retinopathy in an Indian Population. D. Jajal, K. Kalia, *Sardar Patel University, India and National Institute of Pharmaceutical Education & Research (NIPER - Ahmedabad), India*

B465 780.11 Altered Islet Function May Promote a Lean Phenotype in Tafazzin Deficient Mice. L.K. Cole, C. Doucette, M. Vandel, M. Fonseca, B. Xiang, V.W. Dolinsky, G.M. Hatch, *University of Manitoba, Canada*

B466 780.12 Lipid Stress Alters Cell Distribution, Traffic, and Desensitization Properties of Melanocortin-4 Receptor, a GPCR Involved in Appetite Control. K. Cooney, B. Molden, S. Russell, G. Baldini, *University of Arkansas for Medical Sciences*

B467 780.13 Mitochondria-Targeted Catalase Primes Adipocyte Differentiation Through Regulation of Pref-1. K. Tavares, B. Christian, *Appalachian State University*

B468 780.14 'Ome Is Where the Wound Is: Biomarkers of Healing in Chronic Diabetic Foot Ulcers. M. Glucksman, K. Philibert, X. Shao, C. Yang, J. Ortiz, S. Wu, *Chicago Medical School and Scholl College of Podiatric Medicine*

B469 780.15 Investigation of Free Fatty Acid on Concerted Trafficking of K_{ATP} and Kv2.1 Channels in the Adipoinsular Axis *in Vivo* and *in Vitro*. J. Ruan, P. Chen, *National Cheng Kung University, Taiwan*

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Lipid Metabolizing Enzymes

B470 781.1 The Activation Loop of PIP5K Functions as a Membrane Sensor Essential for Processing of Lipid Substrates. J. Hu, *Michigan State University*

B471 781.2 The Nem1-Spo7/Pah1 Phosphatase Cascade Is Negatively Regulated by Protein Kinase A. W. Su, G. Han, G.M. Carman, *Rutgers University*

B472 781.3 Structure-Function Analysis of Yeast Pah1 Phosphatidate Phosphatase. Y. Park, G. Han, G.M. Carman, *Rutgers University*

B473 781.4 Potential Role of Hepatic Lipase in the Accrual of Docosahexaenoic Acid (DHA) in the Brain. S. Dhavamani, P. Yang, D. Ng, S. Khetarpal, C. Vitali, D. Rader, P. Subbaiah, *University of Illinois, University of Toronto, Canada and University of Pennsylvania*

B474 781.5 Dual Site Mechanism Governs Sphingosine Kinase 1 Membrane Binding and Biological Function. M. Pulkoski-Gross, J. Truman, M. Salama, C. Clarke, Y.A. Hannun, L. Obeid, *Stony Brook University and Mansoura University, Egypt*

B475 781.6 Monoacylglycerol Acyltransferase (MGAT) 1 and 2 Play Divergent Roles in Adipogenesis/Lipogenesis in Mice. T. Huang, M. Yen, D.W. Nelson, C. Yen, *University of Wisconsin-Madison*

B476 781.7 Biochemical Characterization of a Mycobacterial Acyltransferase Involved in the Metabolism of Long-Chain Fatty Acids. J. Law, J. Daniel, *Indiana University-Purdue University Fort Wayne*

B477 781.8 Crystal Structure and Activation Mechanism of Human Neutral Sphingomyelinase 2. P. Shanbhogue, M. Airola, A. Shamseddine, K. Guja, R. Maini, N. Bartke, B. Wu, L. Obeid, M. Garcia-Diaz, Y. Hannun, *Stony Brook University and Medical University of South Carolina*

B478 781.9 Characterization of *Saccharomyces cerevisiae* Coenzyme Q Biosynthetic Protein Coq11. M.C. Bradley, A.M. Awad, C.M. Allan, J.S. Johnson, D.I. Shirasaki, C. Wang, C.E. Blaby-Haas, J.A. Loo, C.F. Clarke, *University of California, Los Angeles and University of Michigan*

B479 781.10 Mutational Analysis of the *Arabidopsis thaliana* Lysoglycerophospholipid Acyltransferase AT1g78690. S. Nag, T.A. Garrett, *Vassar College*

B480 781.11 The Cardiotoxic and Cardioprotective Potential of Cytochrome P450 2J2 (CYP2J2). W.R. Arnold, J. Baylon, E. Tajkhorshid, A. Das, *University of Illinois Urbana-Champaign*

B481 781.12 AGPAT4 Is a Mitochondrial Lysophosphatidic Acid Acyltransferase That Regulates Learning and Memory in Mice. R. Bradley, E.B. Mardian, A.S. Mitchell, D. Bloemberg, P. Marvyn, E. Bombardier, K. Moes, A. Tupling, J. Quadrilatero, R.E. Duncan, *University of Waterloo, Canada*

B482 **781.13** Investigation of a Role for AGPAT4 in Mouse Skeletal Muscle. R.M. Bradley, D. Bloemberg, A.S. Mitchell, V.A. Fajardo, J. Aristizabal Henao, C. Bellissimo, E.B. Mardian, M. Paré, E. Bombardier, K. Moes, A. Tupling, J. Quadrilatero, K.D. Stark, R.E. Duncan, *University of Waterloo, Canada*

B483 **781.14** *Saccharomyces cerevisiae* Coq10, a Putative START Domain Protein Binds Coenzyme Q and Late-Stage Q-Biosynthetic Intermediates. H. Tsui, C. Clarke, *UCLA*

B484 **781.15** A Conserved Putative Kinase Is Required for Coenzyme Q Biosynthesis: Functional Insights from Yeast Genetics. N.V. Pham, C. Clarke, *University of California, Los Angeles*

B485 **781.16** Elevated Uptake of Glycerophosphoinositol Through the Git1 Permease Causes Cell Growth Inhibition in *Saccharomyces cerevisiae*. P. Ziegler, A. Nikiforov, B. Robinson, A. Bakalinsky, A. O'Donnell, J. Patton-Vogt, *Duquesne University and Oregon State University*

B486 **781.17** Identification of Inhibitors of ACSVL3, a Therapeutic Target in Glioma. E. Clay, X. Shi, Y. Liu, C.C. DiRusso, P.N. Black, P.A. Watkins, *Johns Hopkins University School of Medicine, Kennedy Krieger Institute, University of Nebraska Lincoln*

B487 **781.18** Charecterization of a Glycerophosphocholine Acyltransferase (Gpc1), a Novel Enzyme in Phosphatidylcholine Biosynthesis in *Saccharomyces cerevisiae*. S. Anaokar, I. Lager, B. Glab, A. Banas, S. Stymne, J. Patton-Vogt, *Duquesne University, Swedish University of Agricultural Sciences, Sweden and Intercollegiate Faculty of Biotechnology of University of Gdansk and Medical University of Gdansk, Poland*

B488 **781.19** Four Acyltransferases Uniquely Contribute to Phospholipid Heterogeneity in *Saccharomyces cerevisiae*. P. Oelkers, K. Pokhrel, *University of Michigan-Dearborn*

B489 **781.20** The Malonyl-CoA:ACP Transacylase R117A Variant Catalyzes Acyl-Transfer with a Broad Range of Acyl-CoA Substrates. A.M. Marcella, A.W. Barb, *Iowa State University*

B490 **781.21** Crystal Structure of LCAT Bound to a Small Molecule Allosteric Activator Reveals Its Active Conformation. K.A. Manthei, S. Yang, L. Chang, L.A. Freeman, B. Baljinnyam, M. Shen, D.J. Maloney, A.T. Remaley, A. Jadhav, J.J. Tesmer, *University of Michigan and National Institutes of Health*

B491 **781.22** LplT-Aas System: The Primary Mechanism for Lysophospholipid Remodeling in *E. coli*. L. Zheng, Y. Lin, S. Tong, Z. Guan, M. Bogdanov, *University of Texas Houston Medical School and Duke University*

B492 **781.23** Effect of Myeloid Specific ACAT1 Knockout on Atherosclerosis. J.A. Benson, E. Melton, L. Huang, P. Sohn, H. Li, C. Chang, T. Chang, *Dartmouth College and Geisel School of Medicine*

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Regulation of Lipid Metabolism

B493 **782.1** Acyl-CoA Thioesterase 1 Regulates Hepatic Lipid Metabolism and PPAR-α Signaling. M.P. Franklin, A. Sathyanarayan, D. Mashek, *University of Minnesota*

B494 **782.2** Phosphorylation of the Nem1-Spo7/Pah1 Phosphatase Cascade by Pkc1 Protein Kinase C. P. Dey, W. Su, G.M. Carman, *Rutgers University*

B495 **782.3** Unravelling a Role of LRPPRC in Peroxisomal Lipid Metabolism Through Lipidomic Investigations in Human and Mouse. M. Ruiz, A. Cuillerier, F. Dupuis, P. Morue, B. Bouchard, I. Robillard-Frayne, A. Forest, C. Daneault, J. Thompson Legault, L. Coderre, Y. Burelle, J. Rioux, C. Des Rosiers, *Montreal Heart Institute, Canada and Faculty of Health Sciences, Canada*

B496 **782.4** Regulation of Phosphatidic Acid Phosphatase by High Glucose in the Oleaginous Yeast *Yarrowia lipolytica*. D. Hardman, S. Fakas, *Alabama A&M University*

B497 **782.5** XBP-1: A Key Transcriptional Regulator of Lipid Synthesis in Renal Epithelial Cells. M. Fernandez, M. Fernandez, R. Malvicini, K. Weber, L. Parra, L. Lepera, C. Casali, *Universidad de Buenos Aires, Facultad de Farmacia y Bioquímica, BCM, Argentina, CONICET, Argentina, Administración Nacional de Medicamentos and Alimentos y Tecnología Médica (ANMAT), Argentina*

B498 **782.6** Methionine Restriction Decreases Fat Mass in C57BL/6 Mice via Increasing Endogenous Hydrogen Sulfide Production. Y. Wang, J. Zhang, H. Guo, B. Yan, Y. Shi, G. Le, *Food Nutrition and Functional Factors Research Center, People's Republic of China*

B499 **782.7** Angiopoietin-Like 4 Directs Uptake of Dietary Fat Away from Adipose During Fasting. E.M. Cushing, B. Davies, *University of Iowa*

B500 **782.8** Functional Interplay Between LXR and AMPKα inhibits Atherosclerosis in apoE-Deficient Mice—A New Anti-Atherogenic Strategy. C. Ma, W. Zhang, Y. Duan, Y. Chen, J. Han, *Nankai University, People's Republic of China*

B501 **782.9** ANGPTL8 Promotes the Ability of nNGPTL3 to Inhibit Lipoprotein Lipase. B.S. Davies, X. Chi, E.C. Britt, H.W. Shows, A.J. Hjelmaas, S.K. Shetty, E.M. Cushing, R. Zhang, *University of Iowa and Wayne State University*

B502 **782.10** Energy Substrate Levels and Metabolic Changes in Skeletal Muscle Underlie Increased Activity and Improved Exercise Performance in Liver Fatty Acid-Binding Protein Null Mice. H. Xu, A. Gajda, Y. Zhou, A. Fatima, J. Storch, *Rutgers University*

B503 **782.11** Lantibiotic Synthetase C-Like Protein 2 (LanCL2) Is Necessary for 3T3-L1 Differentiation to Adipocytes. D. Dutta, J. Chen, W. van der Donk, *University of Illinois, Urbana Champaign*

B504 **782.12** N-Terminal Phosphorylation of Thioesterase Superfamily Member 1 (Them1) Regulates Its Subcellular Localization in Brown Adipocytes. Y. Li, L. Ang, S.J. Hagen, D.E. Cohen, *Beth Israel Deaconess Medical Center and Weill Cornell Medical College*

B505 **782.13** Tl(I) and Tl(III) Induce Alterations in MDCK Cell Lipid Metabolism. E. Morel Gomez, S. Verstraeten, M. Fernandez, *Universidad de Buenos Aires, Facultad de Farmacia y Bioquímica, Argentina, CONICET, Argentina, Universidad de Buenos Aires, Facultad de Farmacia y Bioquímica and BCM, Argentina*

B506 **782.14** A Severe Inherited Arrhythmia Syndrome Highlights the Role of Fatty Acid Metabolism in the Regulation of Cardiac Electrical Activity. R. Gelinas, P. Goyette, A. Forest, B. Bouchard, I. Robillard Frayne, L. Pruneau, M. Ruiz, L. Villeneuve, J. Thompson-Legault, M. Talajic, C. Des Rosiers, J.D. Rioux, *Montreal Heart Institute, Canada and Université de Montréal, Canada*

B507 **782.15** Nutrient Sensing and Mitochondrial Coenzyme Q Biosynthesis: Are They Connected by a Phosphatase?. A.M. Awad, S. Venkataramanan, A. Nag, M.C. Bradley, A.R. Galivanche, T.L. Johnson, C.F. Clarke, *UCLA*

B508 **782.16** Regulation of *Schizosaccharomyces pombe* Lipid Homeostasis in Response to Low Oxygen by Coordinated Activation of the Transcription Factors Sre1 and Mga2. R. Burr, E.V. Stewart, W. Shao, S. Zhao, H.K. Hannibal-Bach, C.S. Ejsing, P.J. Espenshade, *Johns Hopkins University School of Medicine, VILLUM Center for Bioanalytical Sciences and University of Southern Denmark, Denmark*

B509 **782.17** Macrophage Catabolism of Aggregated Lipoproteins Using a Novel Extracellular Compartment Regulates Lipid Accumulation During Atherosclerosis. R.K. Singh, A.S. Haka, V.C. Barbosa-Lorenzi, A. Asmal, F. Lund, Y. Xiong, H.F. Chin, I. Grosheva, T. Hla, F.R. Maxfield, *Weill Cornell Medical College*

B510 **782.18** Novel Function of Tetraspanin-Interacting Protein IGSF3 in the Regulation of Glycosphingolipid Metabolism. K. Schweitzer, M.J. Justice, I. Bronova, S.M. Leach, E.V. Berdyshev, I. Petrache, *National Jewish Health and Indiana University*

B511 **782.19** Rottlerin Diminished the Lipid Accumulation in 3T3-L1 Cell Line and Enhanced the Uncoupling of Oxidative Phosphorylation in D16 Cell Line via LRP6 Mediated Pathway. Y. Ryu, J. Jeong, G. Go, *Kookmin University, Republic of Korea*

Monday

B512 782.20 Insights Into the Cellular Trafficking of Perilipin 5. H.M. Bailey, J.T. Tansey, *Otterbein University*

B513 782.21 Detection of a Perilipin-5 Splice Variant. B. Ranzau, D.M. Dubreuil, T. Hubbell, J.T. Tansey, *Otterbein University*

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Vesicle Trafficking and Cargo

B514 783.1 Scavenger Receptor BI Mediates the Uptake and Transcytosis of HDL in Brain Microvascular Endothelial Cells Independent of PDZK1 and Nitric Oxide. K.Y. Fung, C. Wang, S. Nyegaard, B. Heit, G. Fairn, W. Lee, *St. Michael's Hospital, Canada, Hospital for Sick Children, Canada and Western University, Canada*

B515 783.2 Mapping the Atg9 Binding Site on Atg11, a Central Organizer of the Selective Autophagy Initiation Complex. M. Meyer, J. Winzeler, D. Sheppard, S.K. Backues, *Eastern Michigan University*

B516 783.3 The Effect of Cellular Autophagy on Replication and Dissemination of Theiler's Murine Encephalomyelitis Virus. L. Benner, *University of Tampa*

B517 783.4 Multifaceted Role of Glycan Interactions on Clathrin-Independent Endocytosis of MHC1 and CD59 M.P. Mathew, J.G. Donaldson, *National Heart Lung and Blood Institute*

B518 783.5 Designed Proteins Induce Formation of Nanocage-Containing Vesicles. J. Votteler, C. Ogohara, S. Yi, Y. Hsia, U. Nattermann, D.M. Belnap, N.P. King, W.I. Sundquist, *University of Utah and University of Washington*

B519 783.6 Investigating the Effects of Vps45 Mutations Associated with Severe Congenital Neutropenia on SNARE Interactions. A. D'Ordine, P.E. Newburger, M. Munson, *UMass Medical School*

B520 783.7 Structural and Functional Studies of the ANTH Domain as Ubiquitin–Binding Module Involved in Endocytosis. N. Pashkova, R.C. Piper, *University of Iowa*

B521 783.8 The Selective Autophagy Pathway of Nanodiamond-SSEA-1 Antibody in GBM Cells. C. Ting-Hua, *National Chiao Tung University, Taiwan*

B522 783.9 Regulation of Angiotensin Receptor Trafficking by an Upstream Short Open Reading Frame in the mRNA 5' Leader Sequence. P. Kadam, S. Mueller, H. Ji, K. Sandberg, *Georgetown University*

B523 783.10 Use of the Auxin-Induced Degradation System to Dissect Factors Important for Exocyst Assembly and Localization. R.D. Heard, D. Lepore, M. Munson, *University of Massachusetts Medical School*

B524 783.11 Genetic Dissection of Early Endosomal Recycling Highlights a TORC1-Independent Role for Rag GTPases. C. MacDonald, R.C. Piper, *University of Iowa*

B525 783.12 Myopalladin's Role in Cardiac Muscle Function and Disease. V.K. Kadarla, B.M. Bigge, M.R. Beck, *Wichita State University*

B526 783.13 The Effect of Intermolecular Interactions in the Elongation Rates of Actin Filament by Formins. F. Aydin, N. Courtemanche, T.D. Pollard, G.A. Voth, *University of Chicago, University of Minnesota and Yale University*

B527 783.14 Cytoskeleton-Associated Protein 4 (CKAP4) Knockdown Disrupts the Actin Filament Network in Bladder Carcinoma Cells. T. Majernick, B. Chavda, S.L. Planey, *The Commonwealth Medical College*

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Glycans and Glycobiology

B528 784.1 Glycosylation Quality Control by the Golgi Structure. Y. Wang, S. Huang, Y. Haga, H.K. Kweon, H. Hirayama, P. Andrews, T. Suzuki, *University of Michigan and RIKEN, Japan*

B529 784.2 Methodology Toward the Purification and Analysis of Glycopolymers G. Nagy, T. Peng, N.L. Pohl, *Indiana University*

B530 784.3 Toward a Glycosidase Toolbox for Glycan Structure Analysis: General Label-Free Mass Spectrometry-Based Assay to Identify Glycosidase Substrate Competence. T. Peng, G. Nagy, N.L. Pohl, *Indiana University*

B531 784.4 Microbiota-Sensing O-GlcNAc Signaling in Intestinal and Metabolic Homeostasis. H. Ruan, M. Zhao, *University of Minnesota*

B532 784.5 The Expanding Glycouniverse: Diverse Glycan Modifications in Lower Eukaryotes. I.B. Wilson, S. Yan, A. Hykollari, B. Eckmair, J. Vanbeselaere, K. Paschinger, *Universitaet fuer Bodenkultur Wien, Austria*

B533 784.6 Glycoproteins in the Midgut Microvilar Membrane of *Spodoptera frugiperda* (Lepidoptera: Noctuidae). F.J. Fuzita, K.B. Chandler, J.R. Haserick, C. Ferreira, W.R. Terra, C.E. Costello, *University of Sao Paulo, Brazil and Boston University*

B534 784.7 Imaging Specific Glycan Epitopes on Cells Using Glycosyltransferases via Click Chemistry. Z.L. Wu, A. Person, M. Anderson, B. Burroughs, R. Sackstein, T. Geders, *Bio-techne, Brigham & Women's Hospital and Harvard Medical School*

B535 784.8 The Human Lectin Galectin-3 Recognizes Chondroitin Sulfate Proteoglycans (CSPGs) and Sulfated Glycosaminoglycans. T. Dam, M. Talaga, N. Fan, A. Fueri, R. Brown, P. Bandyopadhyay, *Michigan Technological University*

B536 784.9 Using Recombined RNA Aptamers to Specifically Change O-Glcnacylation on a Protein. Y. Zhu, *Johns Hopkins University*

B537 784.10 Toward Facile Automated Glycan Synthesis: Current Progress and Remaining Challenges N.L. Pohl, *Indiana University*

B538 784.11 Examining the Role of the AMP-Activated Protein Kinase in Stress-Dependent O-GlcNAc Signaling. A. Maduka, K. Fahie, N. Zachara, *University of Maryland, Baltimore County and Johns Hopkins University School of Medicine*

B539 784.12 Differing O-Glycan-Forming Glycosyltransferase Expression Profiles in Cancer Cells Act as Signatures That Accurately Identify Cancer Types/Subtypes, Epithelial-Mesenchymal Transforming Cells as Well as Cancer Stem Cells. A.F. Abuelela, J.S. Merzaban, *KAUST, Saudi Arabia*

785
Glycan Function and Control Mechanisms

B540 785.1 Analysis of C-Mannosylated Proteins, Hsc70, and Inflammation. D.A. Seccurro, J. Rakus, *Marshall University*

B541 785.2 Identifying C-Mannosylated Peptides Involved in Hsc70 Mediated Inflammation. N.R. Kegley, *Marshall University*

B542 785.3 Metabolic Modulation of Cell Surface Sialoform of Macrophages. Y. Zhao, *Cleveland State University*

B543 785.4 The Tumor Associated Lectin Galectin-3 Can Bind and Sequester Cancer Biomarkers. N. Fan, M. Talaga, R. Brown, A. Fueri, P. Bandyopadhyay, T. Dam, *Michigan Technological University*

B544 785.5 Enhanced Glycosylation Detection and Characterization of a Human IgG1 Reference Material by Using 2D-LC MS/MS Fractionation and High Resolution Mass Spectral Library. Q. Dong, X. Yan, Y. Liang, S.E. Stein, *NIST*

TUESDAY
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

Poster manning: times:

ODD BOARD NUMBERS: 12:00 – 1:15 pm EVEN BOARD NUMBERS: 1:15 – 2:30 pm

BOARD NUMBER	SESSION TITLE
B1-B24	DNA Repair and Recombination
B25-B28	Transcriptional Assemblies and Mechanisms
B29-B53	Transcriptional Regulation (II)
B54-B61	CRISPR: Methods and Applications
B62-B73	RNA Processing and Editing
B74-B78	RNA Turnover
B79-B117	Protein Interactions and Binding (III)
B118-B129	Intrinsically Disordered Proteins and Amyloids
B130-B136	Protein Turnover and Quality Control
B137-B148	Ubiquitin Pathway and Targeting
B149-B156	Proteasomes: Structure and Regulation
B157-B173	Proteolytic Enzymes and Inhibitors
B174-B177	Multienzyme Complexes
B178-B187	Cytochrome P450
B188-B208	Enzyme Inhibitors and Drug Design
B209-B223	Protein Engineering and Design
B224-B230	Protein-Small Molecule Interactions
B231-B237	Bioanalytical and Biophysical Methods
B238-B247	Nanotechnology
B248-B264	Proteomics (II)
B265-B271	Systems Biology and Regulatory Networks
B272-B278	Cell Stress and Xenobiotics
B279-B283	Signaling Integration and Cross-Regulation
B284-B289	Spatiotemporal Control of Signaling
B290-B294	Cell Motility and Migration

BOARD NUMBER	SESSION TITLE
B295-B300	Checkpoint Mechanisms
B301-B307	Biochemistry of Signaling, Cancer, and Aging
B308-B335	Cancer Signaling and Therapeutics (II)
B336-B339	Mechanisms of Aging
B340-B356	Neurobiology and Neuronal Signaling
B357-B367	Immunity
B368-B377	Targeted Therapies and New Targets for Drug Discovery
B378-B397	Antibacterial Targets and Drug Discovery
B398-B408	Microbiomes
B409-B415	Metabolism and Aging
B416-B432	Metabolism and Cancer
B433-B436	Metabolism and Nutrition
B437-B455	Diabetes, Obesity and Metabolic Syndrome (II)
B456-B458	Lipidomics
B459-B469	Lipid Signaling
B470-B476	Lipids and Inflammation
B477-B481	Lipid Storage and Trafficking
B482-B488	Membrane Structure, Function and Assembly
B489-B499	Membrane Transport and Channels
B500-B505	Glycosyltransferases and Hydrolases
B506-B510	Protein-Glycan Interactions
B511-B514	Glycans in Development and Disease
B515-B519	Glycan Biotechnology and Drug Development

TUESDAY APRIL 25

906

DNA Repair and Recombination

B1 906.1 Impact of Histone Mutations on Mismatch Repair and Cancer. J. Fang, *Tsinghua University, People's Republic of China*

B2 906.2 Functional Analysis of the Role of Phosphorylated PCNA in Cancer Development and Its Potential in Cancer Therapy. B. Peng, Q. Jiang, J. Ortega, L. Gu, J. Dai, G. Li, *Tsinghua University School of Medicine, People's Republic of China, Tsinghua University College of Life Sciences, People's Republic of China, and University of Southern California Keck School of Medicine*

B3 906.3 Activation of Intra-S Phase Checkpoint Facilitates Tolerance of Replication Stress Caused by Mismatch Repair Processing of DNA Damage. D. Gupta, B. Lin, C.D. Heinen, *UConn Health*

B4 906.4 Using Transcriptome Analysis to Solve the Puzzle of DNA Repair in Bdelloid Rotifers. C.C. Huber, G. Glazko, Y. Rahmatallah, S. MacLeod, M. Boerma, A. Schurko, *Hendrix College and University of Arkansas for Medical Sciences*

B5 906.5 Rabbit Polyclonal Antibodies to Detect C7orf49 Proteins Toward Understanding Double Strand Break Repair. B. Englund, *Augustana College*

B6 906.6 DNA Repeat Expansion and Mismatch Repair: A Recurrent Problem. K.T. Fuselier, E. Grabczyk, *LSU Health Sciences Center*

B7 906.7 Down-Regulation of Ubiquitin-Specific Protease 24 Regulates DNA Repair by Homologous Recombination in Lung Cancer Cells. S. Wang, Y. Wang, J. Hung, *Institute of Bioinformatics and Biosignal Transduction, College of Bioscience and Biotechnology, National Cheng-Kung University, Taiwan, Institute of Basic Medical Sciences and National Cheng Kung University, Taiwan*

B8 906.8 An Investigation of Protein Function During DNA Repair in Bdelloid Rotifers. J.C. McReynolds, M. Boerma, S.D. Byrum, L.M. Orr, A.J. Tackett, A. Schurko, *Hendrix College and University of Arkansas for Medical Sciences*

B9 906.9 Filament Formation on Double-Stranded DNA Mediates E38K RecA's Enhanced Activity in the Absence of DNA Damage. M. Ritger, M.M. Cox, *University of Wisconsin-Madison*

B10 906.10 RECQ1 Interacts with rDNA and Promotes Pre-rRNA Transcription. S. Parvathaneni, X. Lu, S. Sharma, *Howard University*

B11 906.11 DNA Polymerase ε Is an Important Bypass DNA Polymerase in the Repair of DNA Interstrand Cross-Links. L. Zhao, *Central Michigan University*

B12 906.12 Characterization of the Interaction Between Mps3 and Cdc5 in *Saccharomyces cerevisiae*. L. Antoniacci, C. Breymeier, *Marywood University*

B13 906.13 Identifying the Contribution of Sumoylation and Ubiquitination to Yeast Replication Factor a Function Through the Examination of "Lysine-Less" RFA Mutants. B.L. Senger, S.J. Haring, *North Dakota State University*

B14 906.14 Development of Novel Nickase Enzymes for Targeted Gene Modification in Higher Eukaryotes. A. Klipp, M. Antoine, E. Kaplan, L. Robins, B. Turner, K. Hillers, *California Polytechnic State University San Luis Obispo and University of Washington*

B15 906.15 Molecular Mechanisms of Mutagenesis Induced by DNA Repair. B. Shen, J. Chapman, A.V. Furano, *NIH*

B16 906.16 Development of a Specialized Yeast Strain to Monitor Recruitment Patterns of Saw1 Mediated Rad1-Rad10 Recruitment to DNA Damage Sites Through Single-Strand Annealing. F.E. Fregoso, P.L. Fischhaber, *California State University Northridge*

B17 906.17 Differential Requirements for Nonhomologous End-Joining (NHEJ) Pathway Genes in DNA Repair and Telomere Stability. N.D. Rodriguez, K. Lewis, *Texas State University*

B18 906.18 Unstable Telomere Cap Structures in *Saccharomyces cerevisiae yku70* Mutants Cause Altered Cell Cycle Phase Distributions. T. Posey, L. Lewis, *Texas State*

B19 906.19 DNA Double-Strand Break Repair Deficiency Is Associated with Changes in Cell Cycling and Cell Morphology in *Saccharomyces cerevisiae*. M. Weis, L.K. Lewis, *Texas State University*

B20 906.20 Exploring the Role of ATP Hydrolysis in the Reca Protein via Stalled DNA Intermediates. L. Sowin, M.M. Cox, *University of Wisconsin-Madison*

B21 906.21 Purification and Characterization of *Deinococcus radiodurans* Polynucleotide Phosphorylase a Phosphate Stimulated Mn^{2+}-Dependent Nuclease. M.N. Spence, L. Uranga, S. Lusetti, *New Mexico State University*

B22 906.22 Effects of DNA Damage on Natural Transformation in *Bacillus subtilis*. B.J. Korry, P.A. Belenky, *Brown University*

B23 906.23 Stress Response and Natural Transformation in *Vibrio cholerae*. A.D. Rowan, P.A. Belenky, *Brown University*

B24 906.24 Acetylpyrazine Thiosemicarbazone Inhibiting Topoisomerase II. L.C. Ngo, G.A. Stults, J. Hill, S.B. Bowman, E.C. Lisic, X. Jiang, *Tennessee Technological University*

907

Transcriptional Assemblies and Mechanisms

B25 907.1 Activation of Transcription-Coupled 5′-RNA Capping by TFIIH. M. Noe-Gonzalez, J. Conaway, R. Conaway, *Stowers Institute and Kansas University Medical Center*

B26 907.2 Solution Structures of Biofilm-Controlling Proteins SinI and SinR from *Bacillus subtilis* Reveal Details of DNA-Binding and Regulatory Mechanism. G.L. Draughn, B.G. Bobay, S.D. Stowe, A.L. Olson, E.A. Feldmann, R.J. Thompson, D.B. Kearns, J. Cavanagh, *North Carolina State University, Duke University, Catalent, BASF, Indiana University and RTI International*

B27 907.3 Re-Emergence of Chloramphenicol Resistance and Associated Genetic Background in *Vibrio cholerae* O1. P. Kumar, P. Yadav, A. Nema, A.K. Goel, P.K. Yadava, *Jawaharlal Nehru University, India, National Centre for Disease Control, India and Defence Research and Development Establishment, India*

B28 907.4 Sensitive and Specific Detection of Ligands Using Engineered Riboswitches. J.P. Laney, D.P. Morse, *United States Naval Academy*

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Transcriptional Regulation (II)

B29 908.1 SOX18 Transcription Factor Interactome: Protein-Protein Interaction a New Road for Anti-Cancer Drug Discovery. M.D. Moustaqil, F. Fontaine, J. Overman, N.D. Giles, A.D. Bhumkar, A.D. O'Caroll, M. Francois, Y.D. Gambin, E.D. Sierecki, *EMBL, Australia and Institute of Molecular Bioscience, Australia*

B30 908.2 Determining the Effect Environmental Conditions Have on the Activity of the 3′-5′ Exoribonuclease Rrp6. B. McAdoo, *St. John Fisher College*

B31 908.3 Resolving Specificity over a Large Footprint Distinguishes Androgen and Glucocorticoid Receptor DNA Binding. L. Zhang, G.D. Martini, H.T. Rube, H.J. Bussemaker, M.A. Pufall, *University of Iowa, and Columbia University*

B32 908.4 Transgene Expression Is Increased When Cells Are Cultured on Defined Biophysical Cues as Detected by a Novel Fluorescence Quantification Method. S.C. Veen, A.J. Youssef, C. Liu, J.Z. Gasiorowski, *Midwestern University and The University of Chicago*

B33 908.5 RXRα Phosphorylation at Threonine 167 Coordinates Energy Metabolism in Mice. T. Sueyoshi, T. Sakuma, S. Shindo, T. Kanayama, R. Moore, M. Negishi, *National Institute of Environmental Health Sciences, NIH, Research Triangle Park, North Carolina*

B34 908.6 Functional Characterization of Caprin2 in Mouse Eye Development and Its Associated Developmental Defect Peters Anomaly. N.C. Borders, *University of Delaware*

B35 908.7 Nutrient Regulation of TATA-Box Binding Protein by O-GlcNAcylation. S. Hardivillé, G. Han, J. Ma, P. Hu, P.S. Banerjee, G.W. Hart, *Johns Hopkins University School of Medicine*

B36 908.8 A Novel Transcription Factor Regulates the Oxidative Stress Response in *Caulobacter crescentus*. N.G. Maragos, N. Mohieddin, B. Smolarek, A. Bryan, C. Peterson, *Suffolk University*

B37 908.9 Angiotensin II-Mediated Repression of Guanylyl Cyclase/Natriuretic Peptide Receptor-A Gene Expression Involving CREB, HSF4a, and HDAC1/2 in Mesangial Cells. K.K. Arise, P. Kumar, K. Pandya, K.N. Pandey, *Tulane University Health Sciences Center and School of Medicine*

B38 908.10 Selective Regulation of Hypoxia Inducible Factors by Endogenous Ligands C. Moreno Romero, H. Wang, R. Bruick, *St. Mary's University and University of Texas Southwestern Medical Center*

B39 908.11 Regulation of Interleukin 33 by Transforming Growth Factor-β in Epithelia Cells, Fibroblasts and Keratinocytes. J.M. Woelfel, J.P. DenHaese, M.E. Gervasi, S. Ruvio, *D'Youville College*

B40 908.12 Regulation of Renal Proximal Tubule Function by CREB-Regulated Transcriptional Coactivators and Salt-Inducible Kinase. M. Taub, D. KIm, F. Cutuli, *University at Buffalo*

B41 908.13 Engineering a Tissue-Specific Cell-Based Therapeutic Delivery System. A. Pandey, J.L. Keenan, K.L. Doiron, T. Siggers, *Boston University and University of Massachusetts Boston*

B42 908.14 Probing the Role of Dynamics in Allosteric Signal Transduction in the CO-Sensing Transcription Factor CooA Using Site-Directed Spin Label EPR Spectroscopy. M.R. Dent, J.P. Hines, D.J. Stevens, J.N. Burstyn, *University of Wisconsin-Madison*

B43 908.15 The Heme-Binding PAS Domain Mediates Dimerization in the Co-Sensing Transcription Factor *Bx*RcoM-1. R.C. Pinhancos, H.E. Bowman, M.R. Dent, B.H. Young, C.E. Berndsen, J.N. Burstyn, *University of Wisconsin-Madison and James Madison University*

B44 908.16 Transcriptome Analysis of Conditional Knockout Mice. A.L. Harvey, C. Biefeld, K. Sztroin, J. Zhu, G. Yu, D.R. Dries, *Juniata College*

B45 908.17 Urinary Proteome Changes Were Detected Earlier Than Serum Biochemical Parameters and Histopathology Changes in a Rat Thioacetamide-Induced Hepatic Fibrosis Model. F. Zhang, Y. Ni, Y. Yuan, Y. Gao, *Institute of Basic Medical Sciences Chinese Academy of Medical Sciences, School of Basic Medicine Peking Union Medical College, People's Republic of China, Beijing Normal University, People's Republic of China*

B46 908.18 Characterization of Transcriptional Changes in a Vimentin Knock-Out Mouse Model Following Influenza a Infection Using RNAseq. C.M. Koch, J.M. Davis, H. Abdala-Valencia, A.V. Misharin, K.M. Ridge, *Northwestern University*

B47 908.19 Analysis of Differentially Expressed Genes in a Gamma-Secretase Conditional Knockout Mouse. C. Biefeld, A. Harvey, J. Zhu, G. Yu, D. Dries, *Juniata College and UT Southwestern*

B48 908.20 Polyunsaturated Fatty Acids (PUFA) Enriched Diet Influences Dynamics of Host Genome and Skin Lipidomics Profile: Implications on Mouse Model Simulating Post-Traumatic Stress Disorder (PTSD) Features N. Chakraborty, B. Sowe, A. Cheema, A. Gautam, R. Hammamieh, M. Jett, *The Geneva Foundation, Georgetown University and USACEHR*

B49 908.21 High-Throughput Gene Expression Profiling of Myeloid Cells in Mechanically Ventilated Patients with Pneumonia. J.M. Walter, P. Reyfman, K.R. Anekalla, R. Wunderink, A.V. Misharin, M. Chi, G. Budinger, *Northwestern University*

B50 908.22 Genomic Cell Lineage Analysis Uncovers Novel Endothelial Gene Expression Programs for Metabolic and Immune Regulation. J. Klomp, A. Malik, *University of Illinois - Chicago*

B51 908.23 mir-140 and mir-6321/miR-6321 Contribute to the Pathogenesis in Acute Myocardial Infarction Revealed by Integrative Study of mRNA and microRNA Transcriptomes. Y. Wang, W. Lin, C. Nugent, R. Zhu, C. Li, L. Zhu, W. Wang, *Beijing University of Chinese Medicine, People's Republic of China, Key Lab of Computational Biology, CAS-MPG Partner Institute for Computational Biology, People's Republic of China, Digestive Diseases and Nutrition Center, Department of Bioinformatics, School of Life Sciences and Technology, People's Republic of China, Genome and Environment and Microbiome Community of Excellence*

B52 908.24 Absolute Quantification of RXRG Isoforms. T. Skotarczak, E. Karnath, L. Monin, Y. Shimanovich, G. Bistulfi, *D'Youville College*

B53 908.25 Differential Gene Expression and Variant Analysis of Clinical Strains of *Cryptococcus neoformans*. R. Seipelt-Thiemann, E. McClelland, *Middle Tennessee State University*

909
CRISPR: Methods and Applications

B54 909.1 Further Development of a CRISPR/Cas9 Platform for 60% of Duchenne Muscular Dystrophy Patients. K. Fernandez, *University of California, San Diego*

B55 909.2 CRISPR/Cas9 Genome Editing to Repair Receptor-Mediated Endocytosis in Homozygous Familial Hypercholesterolemia Induced Pluripotent Stem Cells. L. Omer, E.A. Hudson, J.B. Hoying, N.L. Boyd, *University of Louisville*

B56 909.3 CRISPR-Mediated Removal of Antibiotic Resistance Genes in *Enterococcus faecalis* Populations. M. Rodrigues, K. Hullahalli, K. Palmer, *The University of Texas at Dallas*

B57 909.4 Cell Penetrating Peptide-Mediated Nuclear Delivery of Cas9 to Enhance the Utility of CRISPR/Cas Genome Editing. D.S. Axford, D.P. Morris, J.L. McMurry, *Kennesaw State University*

B58 909.5 Multidimensional Chemical Control of CRISPR-Cas9. C.L. Moore, B. Maji, A. Choudhary, M. Shoulders, *MIT, Broad Institute and Harvard Medical School*

B59 909.6 Developing a Tagged CRISPR-Cas9 Enhancer Pull-Down Assay. S. Yang, R. Rose, *North Carolina State University*

B60 909.7 Conserved DNA Motifs in the Type II-A CRISPR Leader Region. R. Rajan, M. Van Orden, P. Klein, B. Kesavan, F. Najar, *University of Oklahoma*

B61 909.8 Cas9: The Gateway to Genome Engineering. A. Schroeder, N. Mendoza, R. Mahesh, S. Lim, A. Howard, *Olathe North High School*

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RNA Processing and Editing

B62 910.1 Deciphering the Dynamics of Alternative Pre-mRNA Processing of Glutaminase in Ovarian Cancer. P.R. LaFontaine, B. Gibbs, C.P. Masamha, *Butler University*

B63 910.2 Using Cryo-Electron Microscopy to Discover Box C/D s(no)RNP Structure. S.J. Baserga, W. Yip, H. Shigematsu, D.W. Taylor, *Yale University, RIKEN Center for Life Science Technology, Japan, University of California, Berkeley*

B64 910.3 Functional Significance of Intermediate Cleavages in the 5′ETS of *Schizosaccharomyces pombe* Pre-rRNA. W. Van Loggerenberg, S. Nellimarla, J. Park, R.N. Nazar, *University of Guelph, Canada*

B65 910.4 BDF2 Transcript Sensitivity to RNase III-Mediated Decay Is Heavily Governed by Its Transcript Localization and Vulnerability to Cleavage. C. Wang, K. Roy, G. Chanfreau, *UCLA*

B66 910.5 Biochemical Investigation Into Novel Activities of Yeast SPOUT-Superfamily RNA Methyltransferases. H. Mast, A. Hoskins, *University of Wisconsin-Madison*

B67 910.6 How the Splicing Factors Cus2 and Prp5 Influence Global Splicing Efficiency in Yeast. A. Clark, I. Norden, A.A. Hoskins, *University of Wisconsin-Madison*

B68 910.7 A Possible Conserved Role for SR Protein Kinase in the Regulation of Cell Death. V.E. McGhee, S.M. Patel, E.S. McDonald, G.B. Whitworth, *Washington and Lee University*

B69 910.8 Structural Characterization of the Recognition of U6 snRNA by the Yeast U6 Biogenesis Protein Usb1 A.T. DeLaitsch, A.L. Didychuk, E.J. Montemayor, M.A. Larson, S. Lucarelli, S.E. Butcher, *University of Wisconsin-Madison*

B70 910.9 Exploring Dib1's Role in Pre-mRNA Splicing. C.C. Schreib, C. Hernandez, E. Bowman, A. Lucas, C. Maeder, *Trinity University, University of Chicago and Carnegie Mellon University*

B71 910.10 Genetic Delivery of RNA Molecules to Alter Expression of EGFR in Brain Cancer Cells. N. Sivetz, S.C. Falotico, P. Nekrasov, M.J. Hicks, *Monmouth University*

B72 910.11 Understanding How Two Similar RNA Binding Domains Mediate Different Protein-Protein Interactions.. C. Marshall, *California State University, Fullerton*

B73 910.12 Crystal Structure of the Varkud Satellite Ribozyme: Peek Into Trans-Active Enzymes of the RNA World. S. DasGupta, *The University of Chicago*

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RNA Turnover

B74 911.1 Structural and Functional Characterization of a Human Ribonuclease Implicated in Obesity. E. Abshire, J. Chasseur, J. Bohn, P. DelRizzo, A. Goldstrohm, R. Trievel, *University of Michigan and University of Minnesota*

B75 911.2 Postmortem Samples from Aviation Accident Victims Maintain Tissue-Specific mRNA Expression Profiles. D. Burian, D.C. Hutchings, H.A. Uyhelji, D.L. Williams, V.L. White, *Federal Aviation Administration, Venesco, LLC and Cytovance Biologics*

B76 911.3 Deficiencies in RNS2-Mediated Ribosomal RNA Turnover Cause Changes in the Pentose Phosphate Pathway Flux and Alter Cell Growth in *Arabidopsis*. G.C. MacIntosh, S. Morriss, X. Liu, D. Bassham, *Iowa State University*

B77 911.4 The Sbp1p Paralog Rnp1p Has a Role in P-Body Assembly Without Affecting Translational Repression. S.P. Segal, A. Chanhthee, K. Mackay, *Winona State University*

B78 911.5 Design of a Gene Transfer Vector to Deliver a Stabilized Anti-EGFR RNA Aptamer to the Glioblastoma Microenvironment. S. Parikh, M.J. Hicks, *Monmouth University*

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Protein Interactions and Binding (III)

B79 912.1 Investigation of *ck*/MyosinVIIA Interactors Using Affinity Tagged C-Terminal Binding Domains. T.M. Halverson, J.L. Sallee, *North Central College*

B80 912.2 Determining Zebrafish Epitope Reactivity to Commercially Available Antibodies. S.K. Zepeda, M.A. Villarreal, N.M. Biediger, N.A. Bonner, J.N. Miller, B.J. Ricard, D.M. García, K.A. Lewis, *Texas State University*

B81 912.3 Investigating the Role of a Dual Motif in DNA Binding by PAX3-FOXO1. A. Weatherspoon, R. Evans, T. Cherlin, M. Bratton, K. Johanson, *Xavier University of Louisiana*

B82 912.4 Investigating Contributions of the N and C Terminus to FOXO1 and DNA Interactions. J.M. Stenson, *Xavier University of Louisiana*

B83 912.5 Characterization of a Novel Apolipophorin-III/Apolipoprotein E C-Terminal Domain Chimera. L.M. Kakutani, *California State University, Long Beach*

B84 912.6 DNA Binding by a HEAT-Repeat Subunit of *Saccharomyces cerevisiae* Condensin. R. Sarkar, V.V. Rybenkov, *The University of Oklahoma*

B85 912.7 Elucidating Met18 Functionality in Iron-Sulfur Cluster Biogenesis. C.Y. Lee, A. Vo, J. Cosman, D. Perlstein, *Boston University*

B86 912.8 Protein-Protein Interactions in Nickel Acquisition of *Escherichia coli*. Z. Zeng, D. Zamble, *University of Toronto, Canada*

B87 912.9 L-Arginine Inhibits a Critical Structural Contact Required for Transcription of the *IL1B* Gene Coding for Human Interleukin 1β S.H. Pulugulla, N.W. Rutter, E.X. Esposito, Z. Yang, J.D. Madura, P.E. Auron, *Duquesne University, exeResearch, LLC and Pfizer Research Technology Center*

B88 912.10 Characterization of Macromolecular Interactions That Influence *Pichia pastoris* Vac8p Function in Microautophagy. J.T. Bellmore, E.S. Potokar, J.A. Morales; V, S.D. Patel, M.R. Fry, *Bradley University*

B89 912.11 Nanobody Mediated Neutralization of *Listeria monocytogenes*. C. Brooks, I. Huh, M. Toride, A. Shenai, *California State University Fresno*

B90 912.12 Functional Role of the N-Terminal Region of bHLH TWIST Proteins in the DNA-Binding Activity of ADD1/SREBP1c. Y. Rodriguez, C.L. Cadilla, *UPR School of Medicine, Puerto Rico*

B91 912.13 The Role of the C1q Domain of Otolin1 in Otolith Morphogenesis. O. Das, *SUNY Downstate Medical Center*

B92 912.14 Studies on HIV-1 RNA-Protein Interactions. N. Hadler, E. Stockdale, K. Wise, I. O'Carroll, *U.S. Naval Academy*

B93 912.15 Exploring a Possible Role in Copper Transport and Storage for the Vitamin Carrier, Riboflavin Binding Protein. S. Smith, M. Benore, *University of Michigan-Dearborn*

B94 912.16 Investigating the Role of the Human Parvovirus B19's Main Viral Protein, NS1, in Viral Replication and Interactions with Host DNA. C.J. Hernandez, J.L. Sanchez, N.C. Horton, *University of Arizona*

913

Protein Structure and Biophysics (III)

B97 913.1 Extraction of Protein Thermodynamic Parameters from High-Throughput Differential Scanning Fluorimetry Assays. T. Wright, J. Stewart, D. Konkolewicz, R.C. Page, *Miami University*

B98 913.2 β-Helix Structural Stability and Malleability Affords Both a Buried Water Network and an Unoccupied 200 α^3 Void. T. Weaver, B. Bhattacharyya, W. Novak, *University Wisconsin La Crosse and Wabash College*

B99 913.3 Insights Into the Catalytic Mechanism and Transition State Stabilization of 5′-Methylthioadenosine Nucleosidase Using Neutron Crystallography. M.T. Banco, V. Mishra, A. Ostermann, T.E. Schrader, G.B. Evans, A.Y. Kovalevsky, D.R. Ronning, *University of Toledo, Heinz Maier-Leibnitz Zentrum, Germany, Victoria University of Wellington, New Zealand and Oak Ridge National Laboratory*

B100 913.4 Functional Characterization of a Cysteine-Less Isoform of the Human GLUT2 Hexose Transporter. A.M. Reyes, A.A. Pérez, M. Vargas-Uribe, C. Elgueta, A. Cuevas, L. Ojeda, R. Arce, M. Salas, *Universidad Austral de Chile, Chile*

B101 913.5 Computational Analysis of CHP-NHE Protein-Protein Interaction. I.W. Bell, J. Latzer, J.J. Provost, *University of San Diego and Southwestern College*

B102 913.6 Recruitment of Drp1 in Mitochondrial Fission. J.M. Egner, A. Bakkum, A. Gardner, B. Hill, *Medical College of Wisconsin*

BI03 913.7 Selecting Medically Relevant *in Vitro* Protein Characterization Projects with a High Potential for Success. D. Zajac, B. Tucker, A. Cotsoradis, C. Mallmann, C. Cassidy, D. Gurnon, *DePauw University*

BI04 913.8 Purification and Characterization of Clover-Ruby2 as a FRET Substrate for Protease Assays. T.L. Selby, *Mercer University School of Medicine*

BI05 913.9 The Role of a Highly Conserved Loop in Response Regulator Activation in the General Stress Response. D.S. Eaton, J.L. Luebke, S. Crosson, *University of Chicago*

BI06 913.10 Understanding a Fundamental Force in Protien Folding: Tuning the n --> π* Interaction in Designed Peptidess. N. Wenzell, H. Ganguly, A. Pandey, G.P A. Yap, N.J. Zondlo, *University of Delaware*

BI07 913.11 Secondary Structure Analysis of the C-Terminus of Ga-interacting Vesicle Associated Protein Using Circular Dichroism Spectroscopy. A.L. Maddox, D. Bhandari, *California State University, Long Beach*

BI08 913.12 Structural Characterization of SOD4 from *Candida albicans*. K. Randolph, A. Galaleldeen, *St. Mary's University*

BI09 913.13 Evaluating the Role of a Multi-Heme Cytochrome *c* in Electron Transfer from an Electrode Surface to *Heliobacterium modesticaldum*. K.A. Herrera-Theut, C. Gisriel, J. Laureanti, G. Orf, P. Baker, A.K. Jones, K. Redding, *Arizona State University*

BI10 913.14 Structural Insights Into the Interaction Between Autophagy-Regulating Protein BECN1 and GAPR-1. Y. Li, M. Su, Y. Zhao, C. Colbert, B. Levine, S. Sinha, *North Dakota State University and UT Southwestern Medical Center and HHMI*

BI11 913.15 Ras Residue Y71 Promotes Flexibility of Switch I and Switch II. H. Guterres, C. Mattos, *Northeastern University*

BI12 913.16 Conformational Landscape of the Protein Kinase A Inhibitor PKI Studied by Fluorescence and NMR Spectroscopy. C. Olivieri, G. Li, J. Kim, F. Porcelli, M. Neibergall, J.M. Muretta, D.D. Thomas, S.S. Taylor, V. Gianluigi, *University of Minnesota, University of Tuscia, Italy, Bethel College and University of California at San Diego*

BI13 913.17 Crystal Structures of a Bacteriophytochrome from Myxobacteria *Stigmatella aurantiaca*. P.M. Waltz, A. Halavaty, H. Patel, J. Hopkins, N. Woitowich, E. Stojkovic, *Northeastern Illinois University and Northwestern University*

BI14 913.18 Evaluation of a Prefusion Model of the Herpesvirus Fusion Protein via Mutagenesis. C.A. Robinson, S.L. Gallagher, S.A. Connolly, *DePaul University*

BI15 913.19 Investigation of the Molecular Basis of pH-Induced Dna Binding of CooA, a CO-Sensing Transcription Factor. B. Weaver, G. Westerlund, C. McGhiey, S. Markovic, R. Clark, *Valparaiso University*

BI16 913.20 A Conserved Active Site Residue Favours Metal Ion Binding by Destabilizing Apo-Protein. A. Miller, T. Wang, *University of Kentucky*

BI17 913.21 NMR Structural Studies of Stress Responsive Peptide-2 from the Insect **Manduca sexta** L. Schrag, X. Cao, A.I. Herrera, Y. Wang, H. Jiang, O. Prakash, *Kansas State University and Oklahoma State University*

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Intrinsically Disordered Proteins and Amyloids

BI18 914.1 Capillary Dilatometry, in Conjunction with UV Spectrophotometry, Measures Conversion of Insulin to Polymeric Protein Fibrils (Amyloid). P.J. Carman, P.C. Kahn, *Rutgers University*

BI19 914.2 Stress-Triggered Phase Separation, Tuned by Unusual Features of an Intrinsically Disordered Region, Promotes Cellular Fitness During Stress. J.A. Riback, C. Katanski, J.L. Kear-Scott, T.L. Sosnick, D. Drummond, *University of Chicago*

BI20 914.3 Expression, Purification, and Characterization of an Intrinsically Disordered Late Embryogenesis Abundant (LEA) Protein from *Artemia franciscana* Utilizing *Escherichia coli* and *Nicotiana tabacum*. M. Karim, Y.S. Yordanov, M.A. Menze, *Eastern Illinois University and University of Louisville*

BI21 914.4 Transport of the Alzheimer's Disease Associated Amyloid-Beta Peptide by P-Glycoprotein. J.W. McCormick, A.K. Nanayakkara, P.D. Vogel, J.G. Wise, *Southern Methodist University, The Center for Drug Discovery, Design and Delivery (CD4), The Center for Scientific Computation, The Center for Drug Discovery, Design and and Delivery (CD4)*

BI22 914.5 Rosmarinic Acid, a Catechol-Containing Natural Product, Potently Inhibits Amylin Amyloidosis. P.W. Velander, L. Wu, K. Ray, S. Zhang, R. Helm, D. Bevan, B. Xu, *Virginia Tech and Virginia Commonwealth University*

BI23 914.6 An Engineered Bacterial Display System for the Development of a High-Throughput Screen for Compounds That Block Amyloid Fiber Formation. J. Love, M. Soo Ko, *San Diego State University*

BI24 914.7 Regulatory Role of Non-Phosphorylated Tau 441 and Its Antibodies on Tubulin Polymerization. M.M. Imhof, N.L. Zabik, S. 'Martic, *Oakland University*

BI25 914.8 Modulatory Role of Anti-Tau Antibodies on Phosphorylation of Tau-441 by MARK4. I. Ziu, S. 'Martic, **BI26 914.9** High Throughput Quantification of Nucleated Protein Phase Behavior in Vivo

R. Halfmann, T. Khan, E. Bruner, T. Kandola, *Stowers Institute for Medical Research and University of Kansas Medical Center*

BI27 914.10 Quantitative Sequence Specific Protein Footprinting Reveals Structural Details of Amyloid-β (1-42) Peptide Oligomerization. A.L. Klinger, J. Kiselar, A.J. Nix, A. Paravastu, T.L. Rosenberry, *DecipherBio, Case Western Reserve University, Mayo Clinic and Georgia Tech*

BI28 914.11 ALS and Ubiquilin-2: Effects of ALS Mutations on Ubiquilin-2 Structure and Function. C. Castaneda, T. Dao, *Syracuse University*

BI29 914.12 The B Domain of the Mitochondrial Fission Mechanoenzyme Drp1 Is Intrinsically Disordered and Coacervates Under Crowding Conditions. B. Hill, A. Posey, M. Bagheri, N. Kennedy, M. Khan, J. Harden, *Medical College of Wisconsin, Johns Hopkins University and University of Ottawa, Canada*

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Protein Turnover and Quality Control

BI30 915.1 Ubiquitin-Dependent and -Independent Degradation of p35 Activation Subunit of Neuronal Cdk, Cdk5. T. Takasugi, S. Minegishi, T. Saito, H. Kawahara, S. Hisanaga, *Tokyo Metropolitan University, Japan*

BI31 915.2 Determination of Protein Turnover in *E. coli* Cells During Exit from Persistence. M. Semanjski, E. Germain, K. Gerdes, B. Macek, *University of Tuebingen, Germany and University of Copenhagen, Denmark*

BI32 915.3 Effects of Endoplasmic Reticulum Stress on Protein Quality Control. B.W. Buchanan, E.M. Rubenstein, *Ball State University*

BI33 915.4 A Neuronal-Specific Surface-Exposed Membrane Proteasome Complex Modulates Neuronal Signaling Through Extracellular Signaling Peptides. K.V. Ramachandran, S.S. Margolis, *Johns Hopkins School of Medicine*

BI34 915.5 Genetic Requirements for the Degradation of Translocon-Associated Proteins. C.J. Indovina, S.M. Engle, S.G. Watts, E.M. Rubenstein, *Ball State University*

BI35 915.6 Shifting Sands: Modulating Interactions and Outputs of the CHIP-Hsp70/HOP-Hsp70 Protein Quality Control Complexes. R.C. Page, H. Zhang, K. Cottingim, J. VanPelt, J.C. Nix, J. Schisler, *Miami University, Lawrence Berkeley National Laboratory, University of North Carolina, Chapel Hill*

B136 915.7 Repeat Expanded Ataxin-1 mRNA and Protein Is Co-Regulated at PML Bodies. D. Fanslow, A. Cogswell, C. Strojny, A. Garza-Gongora, E. Smith, S. Kosak, *Northwestern University*

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B137 916.1 A Role of Deubiquitinating Enzyme Ubp3 in Coping with Oxidative Stress. X. Jin, *Saint Louis University*

B138 916.2 Withdrawn. **B139 916.3** Multivalent Interactions Between a Ubiquitin Ligase and Its Substrates Mediate Their Recruitment to Liquid Membrane-Less Organelles. T. Mittag, J. Bouchard, E. Martin, J. Otero, S. Marada, S. Ogden, *St. Jude Children's Research Hospital*

B140 916.4 Ubiquitin Specific Peptidase 24-Mediated Interleukin 6 Expression in Tumor-Associated Microenvironment Promotes Tumor Malignancy. Y. Wang, Y. Wu, W. Chang, J. Hung, *National Cheng Kung University, Taiwan and Taipei Medical University, Taiwan*

B141 916.5 Conformational Locking and Unlocking in the Ubiquitin Family of Proteins. R.T. Kelly, C. Berndsen, *James Madison University*

B142 916.6 Which Polyubiquitin Polymer(s) Is Responsible for Mitophagy in Yeast Cells?. T.D. Hoskins, E. Cooper, *Hartwick College*

B143 916.7 Ubiquitin-Mediated Endocytosis Achieves pH Homeostasis by Facilitating Communication Between Intracellular V-ATPases and a Plasma Membrane Proton Exporter. S. Velivela, P.M. Kane, *SUNY Upstate Medical University*

B144 916.8 Interactions and Dynamics Within CHIP/Hsp70 Complexes. M.M. Mannion, H. Zhang, J. VanPelt, K. Cottingim, S. Tsutakawa, R.C. Page, *Miami University and Lawrence Berkeley National Laboratory*

B145 916.9 Effects of VACM-1/Cul5 Gene Knockout on Cellular Proliferation Using CRISPR-Cas9 Approach. C. Gager, S. Rios, M. Cunningham, M. Burnatowska-Hledin, *Hope College*

B146 916.10 Remodeling the Actin Cytoskeleton by Ubiquitin-Dependent Proteolysis. K.M. Mannix, J. Gerdes, A. Hudson, R. Kaufman, L. Cooley, *Yale University*

B147 916.11 Effect of Rad 23 Selectivity to Polyubiquitin Chain Linkage on Far-1 Degradation in Yeast. Y. Liu, E. Cooper, *Hartwick College*

B148 916.12 Molecular Mechanism of JNK Attenuation by Parkin. C.W. Davis, X. Zhan, *Tennessee Tech University*

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Proteasomes: Structure and Regulation

B149 917.1 Pba3-Pba4 Plays a Role in Preventing Non-Productive Interactions Among the α Subunits of the Proteasome. D. Panfair, A. Ramamurthy, M. Hochstrasser, A. Kusmierczyk, *Indiana University-Purdue University Indianapolis and Yale University*

B150 917.2 Molecular Chaperones of the Hsp70 Family Interacting with the Proteasome Assembly Network. L.J. Hammack, K. Firestone, A.R. Kusmierczyk, *Indiana University-Purdue University Indianapolis*

B151 917.3 Proteasome's Proteases Are Altered During Priming, Inflammation and Tolerance by LPS. N. Qureshi, N. Silswal, *University of Missouri*

B152 917.4 Proteasome Activation via a Functional Switch of the Rpt6 C-Terminal Tail Following Chaperone-Dependent Assembly. S. Park, F. Li, V. Sokolova, *University of Colorado Boulder*

B153 917.5 Proteasome Assembly and the Formation of Non-Canonical Complexes *in Vivo*. A.R. Kusmierczyk, L.J. Hammack, *IUPUI*

B154 917.6 Nitrogen Starvation and Rapamycin Both Induce Autophagic Degradation of Proteasome Complexes. J. Roelofs, K.A. Waite, G. Vontz, A. De La Mota-Peynado, *Kansas State University*

B155 917.7 Resveratrol: Proteasome Inhibitor and Immunomodulator. N. Silswal, N. Qureshi, *University of Missouri Kansas City*

B156 917.8 This Is SPrTAC: A New Method to Distinguish Multisubunit Complexes with Highly Similar Compositions *in Vivo*. R.J. Tomko Jr., A.K. Peterson, *Florida State University College of Medicine*

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Proteolytic Enzymes and Inhibitors

B157 918.1 ScMC4 and ScMC5 Are Metacaspases Active in Cleaving Peptides After Arg Residues. M. McDonald, K. Fox, *Union College (NY)*

B158 918.2 ScMC2 Is a Calcium-Dependent Metacaspase Cleaving Peptides After Arg Residues. S.N. Scharbach, K. Fox, *Union College*

B159 918.3 Identifying a Serine Protease Network Involved in Ovarian Cancer Progression Using Activity-Based Protein Profiling (ABPP). C. Mehner, A. Hockla, D.C. Radisky, E.S. Radisky, *Mayo Clinic*

B160 918.4 Label Free Proteomics Profiling of Thrombin-Activated Platelets Highlights the Down-Regulation of the Integrin and RhoA/ILK Signaling Pathways in Response to the Treatment with Direct Thrombin Inhibitors. C.C. Clement, *Albert Einstein Coll Med CUNY*

B161 918.5 Structural and Biochemical Insights Into the Activation and Substrate Selectivity of Clostripain-Like Proteases Secreted from Commensal Gut Bacteria. E.J. Roncase, A.J. O'Donoghue, D.W. Wolan, *The Scripps Research Institute, University of California, San Diego*

B162 918.6 The Effect of Disrupting a Distal Hydrogen Bond Network on Serine Protease Function. R. Villa, T. Baird; Jr., *San Francisco University*

B163 918.7 The Effect of a Y39A Substitution in Trypsin and Its Interaction with Macromolecules—Implications for the Development of Protease Therapeutics. A. Adame, P. Huang, T. Baird Jr, *San Francisco State University*

B164 918.8 Site-Directed Mutagenesis of Recombinant *Aedes aegypti* Trypsin-Like Serine Proteases II and IV (AasSPII and AaSPIV). D.F. Eilerts, A.A. Rascon; Jr., *San Jose State University*

B165 918.9 Biochemical Studies of Recombinant AaCHYMO from the Female *Aedes aegypti* Mosquito. O. Burata, A.A. Rascon; Jr., *San Jose State University*

B166 918.10 *in Vitro* Activation of Purified *Aedes aegypti* Mosquito Early Trypsin (AaET) Wild-Type in Comparison to the Inactive AaET Mutant (Active Site Serine to Alanine). R.M. Lucero, A.A. Rascon; Jr., *San Jose State University*

B167 918.11 Inhibition of *Eurygaster integriceps* Puton Prolyl Endoprotease (spPEP) and Human Prolyl Endopeptidase (hPEP) Using αS1–Casein Peptide Inhibitors. P. Kadakova, *Stephen F. Austin State University*

B168 918.12 Withdrawn. **B169 918.13** How the Loss of a Single Hydroxyl Group Affects the Proteolytic Activity of the Model Serine Protease, Trypsin. J. Huang, A.R. Batt, C.P. St. Germain, T. Baird; Jr., *San Francisco State University*

B170 918.14 Different Phenolic Compounds Selectively Slow Down the Hydrolysis Rates of Sucrose and Isomaltose by Mammalian Mucosal α-Glucosidases. J. Lim, M.G. Ferruzzi, B.R. Hamaker, *Purdue University and North Carolina State University*

B171 918.15 Enhancing Efficacy of Protease Drugs Through Site-Directed Mutagenesis. A.N. Amorello, A. Batt, T. Baird; Jr., *San Francisco State University*

B172 918.16 Chemical Modification of Trypsin Improves Protein Digestion Efficiency. B. Washer, D. Poe, J. O'Grady, K. Meyer, *Wabash College and Perfinity Biosciences*

B173 918.17 Determining ClpXP Substrates Under Different Nutrient Conditions in *Escherichia coli*. C. Peterson, A. Mendes, A. Lambert, A. Papaj, P. Ngo, T. Von Rosen, *Suffolk University*

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BI74 919.1 Overexpression and Characterization of the *rqua* Gene Product Involved in the Biosynthesis of Rhodoquinone. A. Zander, J. Shepherd, *Gonzaga University*

BI75 919.2 The Structure and Function of Sulfite Reductase Flavoprotein: Three Faces of a Dynamic Enzyme. I. Askenasy, R. Andrews, M. Stroupe, *Florida State University*

BI76 919.3 Characterization of the Nicotinic Acid and 6-Hydroxynicotinic Acid Dehydrogenase Complexes in *Bacillus niacini*. K.I. Kalafatis, M.J. Snider, *The College of Wooster*

BI77 919.4 Cofactor Analysis of Nicotinate Dehydrogenase and 6-Hydroxynicotinate Dehydrogenase in *Bacillus niacini*. L.A. Sherer, M.A. Snider, M. Pandelia, R. Rowlett, *The College of Wooster, Brandeis University and Colgate University*

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BI78 920.1 Mechanism and Modulation of Human Androgen Synthesis. R. Duggal, M.C. Gregory, Y. Liu, P.J. Mak, I.G. Denisov, J.R. Kincaid, S.G. Sligar, *University of Illinois Urbana-Champaign and Marquette University*

BI79 920.2 Rolapitant Is Not a Mechanism-Based Inactivator or Tight-Binding Inhibitor of CYP2D6 *in Vitro*. S. Glass, L.L. Furge, *Kalamazoo College*

BI80 920.3 Molecular Dynamics and Distance-From-Average-Structure Characteristics of Human Cytochrome CYP2D6. Q.E. Colwell, L. Furge, *Kalamazoo College*

BI81 920.4 Amino Acid Changes in Allelic Variants of CYP2D6 Alter Kinetics and Susceptibility to Inactivation. C.W. Cho, S.M. Glass, V.M. Osorio, K.F. Sunden, R. Fujiwara, L.L. Furge, *Kalamazoo College*

BI82 920.5 Cytochrome P450 1B1 (CYP1B1) Knockout Mice Are Less Susceptible to Hyperoxic Pulmonary Injury: A Novel Pro-Oxidant Role for CYP1B1 in Vivo. A. Veith, W. Jiang, L. Wang, G. Zhou, X. Couroucli, K. Lingappan, B. Moorthy, *Baylor College of Medicine and Texas A&M University Health Science Center*

BI83 920.6 Oxidative Inhibition of the o-Hydroxylation Activity of Cytochrome P450 4A11 by Sulfenylation of the Heme-Thiolate Cysteine. M.E. Albertolle, D. Kim, F.P. Guengerich, *Vanderbilt University*

BI84 920.7 Characterization of Bacterial Cytochrome P450's Involved in Gibberellin Biosynthesis. R. Nagel, R.J. Peters, *Iowa State University*

BI85 920.8 E3-bglobin-D^{d} Mice: A New Model to Study Hepatic Zonal Regulation of Sex-Biased Cytochrome P450 mRNA Expression. A.N. Nail, J. Jiang, M.L. Peterson, B.T. Spear, *University of Kentucky*

BI86 920.9 Enzymology of H_2S Oxidation in Nanodiscs. A.P. Landry, R. Banerjee, *University of Michigan Medical School*

BI87 920.10 Heterologous Production of Functional Chloroform Reductive Dehalogenase. B. Jugder, K.A. Payne, K. Fisher, M. Manefield, M. Lee, D. Leys, C.P. Marquis, *University of New South Wales, Australia and University of Manchester, United Kingdom*

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BI88 921.1 The Mechanism of Inhibition of Botulinum Neurotoxin Type A by Two Quinolinol Compounds. Y.T. Vroom Teschemaker Minnow, R. Goldberg, S.R. Tummalapalli, D.P. Rotella, N.M. Goodey, *Montclair State University*

BI89 921.2 Expression, Purification, and Characterization of *W. bancrofti* DHFR and Its Evaluation as a Possible Drug Target for Treating Lymphatic Filariasis. A.M. Tobias, U.A. Gubler, N. Goodey, *Montclair State University*

BI90 921.3 Inhibition of Cholinesterases by β-Carboline Derivatives. J. Soule, W. Horton, S. Peerannawar, N. Kugyela, A. Kulkarni, B. Török, M. Török, *University of Massachusetts Boston*

BI91 921.4 Inhibitory Effects of Substituted Pyrazoline Derivatives on *Entamoeba histolytica* Alcohol and Acetaldehyde Dehydrogenase (*Eh*ADH2) Activities. M. Hackey, L. Rossi, A. Espinosa, *Roger Williams University*

BI92 921.5 ATP Synthase: A Molecular Drug Target for Olive Oil Constituent Tyrosol and Its Analogs. A. Amini, Z. Ahmad, *A.T. Still University of Health Sciences - Kirksville College of Osteopathic Medicine*

BI93 921.6 Understanding the Link Between Antimicrobial Properties of Safranal and Microbial ATP Synthase. M. Liu, Z. Ahmad, *A.T. Still University of Health Sciences - Kirksville College of Osteopathic Medicine*

BI94 921.7 Development of Selective Inhibitor of S-Adenosylmethionine Synthetase in *Cryptosporidium parvum*. M. Dziobak, G. Parungao, R. Viola, *University of Toledo*

BI95 921.8 Inhibition of Myeloperoxidase by Staphylococcal SPIN Proteins. N.T. Ploscariu, N.W. de Jong, K.X. Ramyar, B.L. Garcia, A.I. Herrera, O. Prakash, P. Haas, J.A. van Strijp, B.V. Geisbrecht, *Kansas State University and University Medical Center Utrecht, Netherlands*

BI96 921.9 Development and Mechanism of Small-Molecule SIRT6 Activators. M. Klein, C. Liu, B. Camacho, W. Tang, J.M. Denu, *University of Wisconsin - Madison*

BI97 921.10 Investigation of Possible Inhibitors Against Multidrug-Resistant New Delhi Metallo-Beta Lactamase (NDM-1). S.L. Hernandez, S. Shrestha, J. Beckhem, W.L. Fast, *University of Texas at Austin*

BI98 921.11 Novel Inhibitor Targeting ALDOA at Cysteine 289 and the Regulation of Its C-Terminal Tail. G. Stancu, A. Devkota, A. Aleshin, P. De Jong, E. Cho, R. Liddington, G. Powis, K. Dalby, *The University of Texas at Austin and Sanford Burnham Prebys Medical Discovery Institute*

BI99 921.12 Deciphering the Resistance Profile of Cancerous Thymidylate Synthase. Z. Islam, I. Gurevic, M. Saeed, S. Rasool, A. Kohen, *The University of Iowa*

B200 921.13 A Conserved Ser/Thr Kinase from Malaria Parasites Is Inhibited by Tyrosine Kinase Inhibitors. L. Kirkman, A. Perez, B. Lin, D. Harris, J. Schermerhorn, Y. Qian, G. Brandt, *Franklin & Marshall College*

B201 921.14 Deciphering the Selectivity and Reactivity of Ebselen Derivatives Toward *Mycobacterium tuberculosis* Antigen 85C. C.M. Goins, S. Dajnowicz, S. Thanna, S.J. Sucheck, J.M. Parks, D.R. Ronning, *University of Toledo and Oak Ridge National Laboratory*

B202 921.15 High-Throughput Virtual Screening to Identify Novel Inhibitors of 6-Phosphogluconate Dehydrogenase in *Plasmodium vivax*. N.B. Weber, C. Trieu, J. Beckham, *University of Texas at Austin*

B203 921.16 Synthesis of Sphingosine Kinase 1 Inhibitors with Modifications of Zone 2. A. Nemeth, T.C. Grattan, *Winthrop University*

B204 921.17 Modulation of pTyr Signaling by Small Molecule Inhibitors of SH2-Lipid Interaction. Y. Hu, *University of Illinois at Chicago*

B205 921.18 Inhibition Studies of *Brugia malayi* Dihydrofolate Reductase. D. Toska, N. Goodey, U. Gubler, *Montclair State University*

B206 921.19 Quantification of the in Vitro Inhibitory Effects of the *Arachis hypogaea* Lectin on HIV-1 Reverse Transcriptase. C.A. Garza, R. Ynalvez, *Texas A&M International University*

B207 921.20 Identification of Molecular Interactions Within Histone Deacetylase Isozymes for the Development of Selective HDAC2 Inhibitors for the Design of Targeted Cancer Therapies. X. May, D. Watkins, S.V. Stoddard, *Rhodes College and University of Mississippi*

B208 921.21 Aspartate n-Acetyltransferase: A Key Enzyme in Neurobiology and Cancer. Q. Wang, M. Zhao, G.G. Parungao, B. Thangavelu, V. Mutthamsetty, R.E. Viola, *The University of Toledo*

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B209 922.1 Step-Wise Directed Evolution of an Epoxide Hydrolase Against Progressively Larger Non-Natural Substrates. M. Ko, J.J. Love, *San Diego State University*

B210 922.2 Prolonged Half-Life of Recombinant Immunotoxins in Mice by Adding an Albumin Binding Domain. M. Onda, I. Pastan, *NCI/NIH*

B211 922.3 Modular Domain Compatibility Among Cytotoxic Necrotizing Factors — Finding a Universal Platform for BTIDD. E.E. Haywood, M. Ho, B.A. Wilson, *University of Illinois at Urbana Champaign*

B212 922.4 Development of Phospholipase A_2 Receptor Antigen Binding Monobodies for the Inhibition of the Idiopathic Membranous Glomerulonephritis Auto-Antibody Binding. S.V. Stoddard, A. Zaravar, X. May, L. Goldman, *Rhodes College*

B213 922.5 Improving Personalized Medicine by Examining Structure-Function Patterns in the Non-Conserved Regions of Lactate Dehydrogenase (LDH). E.D. Alao, A. Ayella, M.R. Beck, *Wichita State University and McPherson College*

B214 922.6 Optimizing a Screen for Incorporating Unnatural Amino Acids Into Bacterial Proteins. S. Dhar, C. Mammoser, A. Gunter, A. Kneusel, G. Burkhart, B. Brown, L. Rowe, *Valparaiso University and Ivy Tech*

B215 922.7 Modification of Bovine Serum Albumin (BSA) with a Maleimido-Functionalized, 8-Arm Polyethylene Glycol Backbone (Mal-PEG_8) as a Drug Delivery System. J. Hill, D. Huskic, J. Parker, R. Carpino, K.W. Olsen, *Loyola University Chicago*

B216 922.8 In Vitro Development of Synthetic Chromatin Proteins That Function in Live Cells. K.A. Haynes, S. Tekel, D.A. Vargas, *Arizona State University*

B217 922.9 Using Multivalency to Improve the Function of Synthetic Epigenetic Proteins S.J. Tekel, *Arizona State University*

B218 922.10 Engineering a Tunnel to a More Versatile Lipoic Acid Ligase. B. Schmitz, D. Konkolewicz, R.C. Page, *Miami University*

B219 922.11 Biophysical Characterization and Catalytic Reactivity of Rubrerythrin and Symerythrin Model Proteins. J. Pellegrino, K.A. Bell, R.Z. Polinski, S.N. Cimerol, A. Jacobs, E.I. Solomon, A. Reig, *Ursinus College and Stanford University*

B220 922.12 Effects of 8-Arm Polyethylene Glycol (PEG_8) Addition on Thermal Stability of Bovine Serum Albumin (BSA). J.S. Parker, J. Hill, K.W. Olsen, *Loyola University Chicago*

B221 922.13 Expression of Keratin in *Pichia pastoris* for Biopolymer Applications. M.A. Ward, A. Schoepke, L.M. Haverhals, M.R. Fry, *Bradley University and National Center for Agricultural Utilization Research*

B222 922.14 Rational Design of Epitope Binding Monobodies: New Tools for Autoimmune Therapy. A. Zaravar, X. May, S. Stoddard, *Rhodes College*

B223 922.15 Engineering a Biocatalyst to Support a Novel Preparation of Blockbuster Statin Drugs. K. Belecki, *Virginia Commonwealth University*

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B224 923.1 AF4-AF9 Protein-Protein Interaction Inhibitor: Synthesis and Biological Evaluation. S. Roseman, W. Bao, J. Koh, *University of Delaware*

B225 923.2 Lafora Disease Premature Termination Codons (PTCs) Are Likely Candidates for Suppression by Aminoglycosides. Z.R. Simmons, A. Sherwood, V. Dukhande, M. Gentry, *University of Kentucky*

B226 923.3 Discovery and Development of Allosteric Pantothenate Kinase Activators. L. Sharma, C. Subramanian, M. Yun, S. White, S. Jackowski, R.E. Lee, C.O. Rock, *St. Jude Children's Research Hospital*

B227 923.4 Crystal Structures of the Nuclear Receptor, Liver Receptor Homolog 1, Bound to Synthetic Agonists Reveal a Novel Mechanism of Activation. D. Okafor, S.G. Mays, R.J. Whitby, D. Goswami, J. Stec, A.R. Flynn, M.C. Dugan, N. Jui, P. Griffin, E. Ortlund, *Emory University School of Medicine, University of Southampton, United Kingdom, Scripps Research Institute and Emory University*

B228 923.5 Trehalose-6-Phosphate Phosphatase Structure and Inhibitor Design. C. Harvey, C. Liu, D. Globisch, K. Janda, D. Dunaway-Mariano, K. Allen, *Boston University, University of New Mexico and The Scripps Research Institute*

B229 923.6 PA4794 Gcn5-Related N-Acetyltransferase Bisubstrate Inhibitors and Mechanistic Insights from Co-Crystal Structures, Site-Directed Mutants, and Molecular Dynamics. C.T. Reidl, K.A. Majorek, J. Dang, M. Law, D. Tran, K. Jew, P. Chiarelli, W. Minor, M. Kuhn, D.P. Becker, *Loyola University Chicago, University of Virginia and San Francisco State University (SFSU)*

B230 923.7 Inhibition of the Herpesvirus Fusion Protein Using Targeted Small Molecules. S.L. Gallagher, H. Deokar, J.K. Buolamwini, S.A. Connolly, *DePaul University and Rosalind Franklin University of Medicine and Science*

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B231 924.1 Tri-Nucleotide Rolling Circle Amplification: A Novel Method for the Detection of RNA and DNA. J. Zingg, S. Daunert, *University of Miami*

B232 924.2 Purification and Quantification of the Chemical Markers of Melanin to Enhance Early Diagnosis of Melanoma. C. Weddle, K. Sienerth, K. Glass, *Elon University and Duke University*

B233 924.3 Supercritical Fluid Chromatography-Tandem Mass Spectrometry Method Development for the Detection of the Rac/Cdc42 Inhibitor MBQ-167 in Mouse Plasma. M. Maldonado, J. Bloom, E. Hernandez-O'Farrill, C. Vlaar, J.F. Rodriguez-Orengo, S. Dharmawardhane, *University of Puerto Rico Medical Sciences Campus, School of Pharmacy and University of Puerto Rico*

B234 924.4 Genome-Wide Screen for *Escherichia coli* [NiFe]-Hydrogenase Maturation Factors. M.J. Lacasse, J. Côté, E.D. Brown, D.B. Zamble, *University of Toronto, Canada and McMaster University, Canada*

B235 924.5 Bead-Based Enzymatic Assay On-A-Chip S.J. Karnik, S. Cahoon, A. Bhushan, *Illinois Institute of Technology*

B236 924.6 Investigating Electrostatic Fields at Protein Interfaces for Drug Discovery. L. Strong, E. Novelli, B. Chang, L. Webb, *University of Texas*

B237 924.7 Droplette — A Fluid Dynamics Driven Platform for Transdermal and Intra-Cellular Delivery of Large Molecules. A. Mahmood, A. Raja, L. Pulakat, *Harry S Truman VA Hospital and University of Missouri-Columbia*

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B238 925.1 Conductive Gel Polymers as an Extracellular Matrix Mimic and Cell Vehicle for Cardiac Tissue Engineering. M.A. Maldonado, A.J. Bonham, *Metropolitan State University of Denver*

B239 925.2 Synthesis of Water-Stable Material-Organic Frameworks at Room Temperature. N.H. Le, K. Jackson, *Virginia Union University*

B240 **925.3** Covalent Crosslinking of L-Asparaginase II Subunits by Site-Specific Pegylation J. Ramirez-Paz, M. Saxena, L.J. Delinois, F.M. Joaquín-Ovalle, V.A. Rojas-Nieves, K. Griebenow, *University of Puerto Rico and Rio Piedras*

B241 **925.4** Poly(Lactic-Co-Glycolic) Nanoparticles for Biodegradable Chemotherapy Drug Delivery System. B. Liang, *St. Mary's College of Maryland*

B242 **925.5** Funcionalized Gold Nanoparticles as Potential New Treatment for Acute Myeloid Leukemia. A. Gaiser, S. Hafner, M. Schmiech, T. Syrovets, T. Simmet, *Ulm University, Germany*

B243 **925.6** Effect of an Electric Bias on the Antibacterial Properties of AG-GQD Nanocomposites. N.I. Alvarez-Colon, A. Marra, G. Caro, J. Avalos, G. Morell, *University of Puerto Rico Rio Piedras Campus, University of Puerto Rico, Bayamon Campus*

B244 **925.7** Biomimetic Nano-Patterned Design on the Surface of the Implants to Prevent Bacterial Infections. B. Boucher, M.J. Wolyniak, K.M. Hargadon, R. Dua, *Hampden-Sydney College*

B245 **925.8** Tracking of Epidermal Growth Factor Receptor in Cancer Cells Using Nanodiamond. Y. Lin, *National Chiao Tung University, Taiwan*

B246 **925.9** Interactions of Rat Embryonic Hippocampal Neuronal Stem Cell on Au-Nanowire Arrays and Gold Nano-Film Surface A. Islam, *Northeastern University*

B247 **925.10** Phage Templating of Nanoparticles, Proteins, and Biologically Relevant Molecules. S. Prabhu, M. Smith-Boeck, P. Santan, N.W. Martinez, *Cal Poly State University, San Luis Obispo*

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Proteomics (II)

B248 **926.1** Landscape of the Regulatory Elements for Lysine 2-Hydroxyisobutyrylation Pathway. H. Huang, Z. Luo, S. Qi, J. Huang, L. Dai, J. Dai, Y. Zhao, *The University of Chicago, Tsinghua University, People's Republic of China, Sichuan University, People's Republic of China*

B249 **926.2** Dissecting the Proteome of *Drosophila* Hybrids. T.C. Bamberger, M. Montgomery, S. Martínez-Bartolomé, J.R. Yates III, *The Scripps Research Institute*

B250 **926.3** Proteotyping Gene Dosage Effects in Genetic Diseases. Y. Liu, R. Aebersold, *Institute of Molecular Systems Biology, ETH Zurich, Switzerland and Faculty of Science, Switzerland*

B251 **926.4** Phosphoproteins in Extracellular Vesicles as Candidate Markers for Breast Cancer. W.A. Tao, I. Chen, A. Iliuk, *Purdue University*

B252 **926.5** Probing the Global Kinome and Phosphoproteome in *Chlamydomonas reinhardtii* via Sequential Enrichment and Quantitative Proteomics. E.G. Werth, E.W. McConnell, T.K. Gilbert, I.C. Lianez, C.W. Perez, C. Manley, L.M. Graves, J.G. Umen, L.M. Hicks, *University of North Carolina at Chapel Hill and Donald Danforth Plant Science Center*

B253 **926.6** Proximity Labeling and Interactomic Study of Primary Cilia. M. Rinschen, P. Kohli, T. Benzing, B. Schermer, *University Hospital Cologne, Germany*

B254 **926.7** Structure and Function of the Nuclear Pore Complex Cytoplasmic mRNA Export Platform. Y. Shi, J. Fernandez-Martinez, S. Kim, U. Paula, R. Pellarin, M. Gagnon, I. Chemmama, J. Wang, I. Nudelman, W. Zhang, R. Williams, W. Rice, D. Strokes, D. Zenklusen, A. Sali, M.P. Rout, B.T. Chait, *Rockefeller University, University of Pittsburgh School of Medicine, UCSF, NYU School of Medicine and University of Montreal, Canada*

B255 **926.8** A High-Throughput Assay Platform for Quantifying Nucleo-Cytoplasmic Phosphatase Activity. M. Shah, S. Kinicki, Z. Chapman, D. Brautigan, K. Janes, *University of Virginia*

B256 **926.9** Analysis of Proteins and Protein Interactions by Size Exclusion Chromatography–High Resolution Mass Spectrometry. F.M. Busch, A. Sahasrabuddhe, Z. vanAernum, B. Rivera, V.H. Wysocki, *The Ohio State University and Phenomenex*

B257 **926.10** Intracellular/Surface Moonlighting Proteins C. Jeffery, W. Wang, *University of Illinois at Chicago*

B258 **926.11** Mass Spectrometry-Based Salivary Protein Biomarker Discovery in Autism Spectrum Disorder (ASD). K.L. Wormwood, L. Charette, J.P. Ryan, A.G. Woods, C.C. Darie, *Clarkson University and SUNY Plattsburgh*

B259 **926.12** Proteomic Analysis of Hct116 Colon Cancer Cells Treated with Inhibitors That Bind to the N-Terminal Versus the C-Terminal Domain of Hsp90. M. Balch, S.D. Hartson, B.S. Blagg, R.L. Matts, *Oklahoma State University and The University of Kansas*

B260 **926.13** Proteomics Analysis of Human Breast Milk to Assess Breast Cancer Risk. R. Aslebagh, K.F. Arcaro, C.C. Darie, *Clarkson University and University of Massachusetts Amherst*

B261 **926.14** Translational Top Down Proteomics of KRAS-Driven Cancers and Models Thereof. I. Ntai, L. Fornelli, J. Hutton, R. LeDuc, R. Fellers, N. Haverland, P. Compton, G. Whiteley, E. Boja, H. Rodriguez, N. Kelleher, *Northwestern University, Frederick National Laboratory for Cancer Research, Leidos Biomedical Research Inc., Office of Cancer Clinical Proteomics Research and National Cancer Institute*

B262 **926.15** Bradykinin Mediates the Secretion of Coagulation Factor VIII by Mouse Dendritic Cells via Bradykinin 2 Receptor (B2R) Activation C.C. Clement, A. Follenzi, *Albert Einstein Coll Med CUNY, University of Piemonte Orientale, School of Medicine, Italy*

B263 **926.16** Proteomics and Functional Genomics of the *D. grimshawii* Sperm and Associated Male Reproductive Tract Tissues. T. Karr, J. Oses, A. Burlingame, B. Oliver, *Kyoto Institute of Technology, Japan, UC San Francisco and NIH*

B264 **926.17** Mass Spectrometric Approaches Toward Site-Specific Characterization of the ADP-Ribosylated Proteome. Y. Yu, *UT Southwestern Medical Center*

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Systems Biology and Regulatory Networks

B265 **927.1** Dissection of Z-Disc Myopalladin Gene Network Involved in the Development of Restrictive Cardiomyopathy Using System Genetics Approach. L. Lu, Q. Gu, U. Mendsaikhan, Z. Khuchua, B. Jones, J. Towbin, E. Purevjav, *University of Tennessee Health Science Center, Cincinnati Children's Hospital Medical Center, Mongolian National University of Medical Sciences, Mongolia, Le Bonheur Children's Hospital and St. Jude Children's Research Hospital*

B266 **927.2** Temporal Analysis of Coagulopathy in Burn Sepsis Using a Systems Biology Approach. S. Srinivasan, D. Donohue, A. Gautam, L. Detwiler, M.M. McLawhorn, S. Tejiram, L.T. Moffatt, M. Jett, J.W. Shupp, R. Hammamieh, *The Geneva Foundation, USACEHR, MedStar Health Research Institute and MedStar Washington Hospital Center*

B267 **927.3** Altered Fecal Microbiota and Urine Metabolites Following Soman Exposure in a Rat Model. A. Gautam, D. Getnet, R. Kumar, A. Hoke, A.K. Cheema, F. Rossetti, C. Schultz, R. Hammamieh, L.A. Lumley, M. Jett, *U.S. Army Center for Environmental Health Research, Advanced Biomedical Computing Center, Frederick National Lab for Cancer Research, The Geneva Foundation, USACEHR, Georgetown University, Clinical Research Management, Edmond Scientific Company and U.S. Army Medical Research Institute of Chemical Defense*

B268 **927.4** HeteroPath: A Pathway-Based Computational Modeling Approach to Identify Tissue-Specific Gene Expression Networks. A. Jambusaria, J. Klomp, Z. Hong, S. Rafii, A.B. Malik, J. Rehman, *University of Illinois at Chicago and Cornell University*

B269 **927.5** Efficient Automatic Induction of Rules in Biological Systems. M.E. Whiting, P.R. Leduc, J. Cagan, *Carnegie Mellon University*

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B270 927.6 Characterizing the Functions of Structural Genomics Proteins Through Computed Chemical Properties and Experimental Chemistry. C.L. Mills, P.J. Beuning, M. Ondrechen, *Northeastern University*

B271 927.7 Prediction of β-Lactamase Proteins Using Random Forest. C. White, D. KC, *North Carolina A&T State University*

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Cell Stress and Xenobiotics

B272 928.1 Determining the Effects of Intracellular pH on the Translational Response to Heat Shock. C.G. Triandafillou, A.R. Dinner, D. Drummond, *University of Chicago*

B273 928.2 Metabolic Mediation of Antifungal Toxicity. D. Cabral, P. Belenky, *Brown University*

B274 928.3 Effect of Thermal Manipulation During Broiler Chicken Embryogenesis on the Differential Expression of Heat Shock Protein and Factor During Heat Stress on Post-Hatch Chicken. M.B. Alzghoul, *Jordan University of Science and Technology, Jordan*

B275 928.4 Activity of Hepatic Expression of Glutathione S-Transferase Isotypes (Alpha, Pi, and Mu) of *Mus musculus* Exposed to Atrazine *in Utero*. L. Finley, *St. Mary's University of Minnesota*

B276 928.5 Cytotoxicity of Urban Dust and Diesel Exhaust Particulates in Murine Astrocyte Cells. T.R. Fortuna, P.C. Price, K.J. Lopez, A.J. Schwader, P. Mazzer, *Dakota Wesleyan University*

B277 928.6 Cloning and Protein Overexpression of *Chlamydomonas reinhardtii*'s Novel Gene Cia7. H. Gonzalez-Cantu, E. Vazquez, R. Ynalvez, *Texas A&M International University*

B278 928.7 Annotating the CIA7 Gene: Comparing Lead Bioaccumulation, Cell Growth and Morphology in Two Strains of *Chlamydomonas reinhardtii*. J.A. Gutierrez, R. Ynalvez, *Texas A&M International University*

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Signaling Integration and Cross-Regulation

B279 929.1 Design Principles of Pleiotropic G-Protein Signaling Through Guanine Nucleotide Exchange Modulators (GEMs). P. Rangamani, M. Getz, P. Ghosh, *UCSD*

B280 929.2 Glucocorticoid-Induced Inhibition of AKT Leads to CREB Phosphorylation and Increased Myostatin Expression via a PDE/cAMP/PKA Pathway in Skeletal Muscle. Y. Xie, P. Zhang, D. Espinoza, B. Perry, J. Rahnert, B. Zheng, R. Price, *Emory University, Xiangya Hospital and Xiangya School of Medicine, Central South University, People's Republic of China*

B281 929.3 Withdrawn. **B282 929.4** Shoc2 Mediates Hematopoietic Signals of the ERK1/2 Pathway. H. Jang, E. Jang, A. Morris, M. Forbes-Osborne, E. Galperin, *University of Kentucky*

B283 929.5 Identification of a Novel Pathomechanism Underlying a Congenital Disorder of Glycosylation: Crosstalk Between Hexosamine Biosynthetic Pathway, PI3K/AKT Signaling, and Protein Glycosylation. S.Y. Wong, S. Perez, X. Huang, K. Stiers, L. Beamer, F. Foulquier, G. Berry, T. Kozicz, E. Morava, *Tulane University School of Medicine, Boston Children's Hospital, University of Missouri and University of Lille 1, France*

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Spatiotemporal Control of Signaling

B284 930.1 The (AAA+) ATPases PSMC5 and VCP/p97 Control ERK1/2 Signals Transmitted Through the Shoc2 Scaffolding Complex. E. Galperin, E. Jang, D. Anderson, H. Jang, *University of Kentucky and Cleave Bioscience*

B285 930.2 Mating Yeast Cells Concentrate the Pheromone Receptor and Its G Protein as Polarized Crescents at the Default Polarity Site That Then Track to the Eventual Chemotropic Site. X. Wang, D.E. Stone, *University of Illinois at Chicago*

B286 930.3 ERK1/2 Signaling Through Scaffold Protein Shoc2 Complexing with H, K, and M-Ras: A Structure-Function Analysis. R. Norcross, E. Galperin, *University of Kentucky*

B287 930.4 DUOX1 Silencing in Lung Cancer Is Associated with Enhanced Nuclear EGFR Localization. A. Little, K. Danyal, D. Heppner, M. Hristova, A. van der Vliet, *University of Vermont*

B288 930.5 The Role of Diacylglycerol and Cysteine-Rich Domains in Spatiotemporal Regulation of Protein Kinase D1 in Cardiac Myocytes. B.M. Wood, M. Ferrero, L.J. Gilardoni, M.F. Goldman, J. Bossuyt, *UC Davis*

B289 930.6 Characterizing the Role of Yeast Cyclin Pcl1 in the Establishment of Pheromone Receptor Polarity. C Y. Pai, M. Sukumar, D. Stone, *University of Illinois at Chicago*

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Cell Motility and Migration

B290 931.1 Ubiquitin-Like Protein Ubl4a Promotes Actin-Mediated Cell Migration. H. Zhang, Y. Zhao, C.R. Affonso, A. Manas, R. Bonomo, J. Xiang, *Illinois Institute of Technology*

B291 931.2 Galectin-1 Modulates Focal Adhesion Turnover and Migration of Vascular Smooth Muscle Cells. L. Chau, M. Chiang, D. Tsai, M. Tsai, *Institute of Biomedical Sciences and Academia Sinica, Taiwan*

B292 931.3 Serglycin Regulates Cytoskeletal-Related Proteins Associated with Cell Motility in Breast Cancer *in Vitro*. B. Bay, P. Chua, G.W. Yip, J. Gunaratne, *National University of Singapore, Singapore and Institute of Molecular and Cell Biology, Singapore*

B293 931.4 Characterization of the Cask Protein in *Drosophila* Ovaries. S. VanHorn, C. Wirth, T. Hoffman, J. Sanner, C. Warren, S. Liber, M. Popil, D. Miller, S. Maraugha, J.L. Sanford, *Ohio Northern University*

B294 931.5 Generation of a CASK-GFP Transgenic Fly Line. J. Sanner, C. Lovejoy, K. Robinson, E. Olah, J.L. Sanford, *Ohio Northern University*

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Checkpoint Mechanisms

B295 932.1 The Response of Histone H3.3 to Chromosomal Misalignment and Missegregation: A Novel Biochemical Pathway Correlated to Cell Cycle Arrest. S. Fadness, C.A. Day, A. Langfald, E.H. Hinchcliffe*, *Hamline University, The Hormel Institute and University of Minnesota*

B296 932.2 The ULK3 Kinase Regulates the ESCRT Pathway in the Abscission Checkpoint. D.M. Wenzel, J. McCullough, A. Caballe, J. Marin-Serrano, W.I. Sundquist, *University of Utah and King's College London, United Kingdom*

B297 932.3 Functional Characterization of a Novel Role for Rfa2 N-Terminal Hyper-Phosphorylation During Checkpoint Adaptation. T.M. Wilson, T.A. Baumgartner, B.L. Senger, N.M. Miles, S.J. Haring, *North Dakota State University*

B298 932.4 Phosphorylation of Replication Factor a Promotes Checkpoint Adaptation in Adaptation-Deficient Phosphatase Deletion Strains. T.A. Baumgartner, S.J. Haring, *North Dakota State University*

B299 932.5 Phosphorylated Astrin Regulated Kinetochore Function Mediated by TRAIP in Mitosis. H. Chung, J. Park, J. Lee, H. Kim, *Sungkyunkwan University, Republic of Korea, and Sookmyung Women's University, Republic of Korea*

B300 **932.6** Regulation of Mitotic Microtubule Dynamic Instability in Monopolar Spindles by Bundling and Kinetochore Attachment. Z.R. Gergely, P.J. Flynn, S. Montes, J. McIntosh, M. Betterton, *University of Colorado at Boulder*

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Biochemistry of Signaling, Cancer, and Aging

B301 **933.1** Calcineurin Homologous Protein Expression Regulates Na^+/H^+ Exchanger 1 Dependent Tumor Survival. W.T. Cottle, M.A. Wallert, J.J. Provost, *University of San Diego and Bemidji State University*

B302 **933.2** PDEF Induce Luminal Differentiation in Metastatic Prostate Cancer Cells. F. Wang, S. Koul, P. Timiri Shanmugam, Q. Dong, H.K. Koul, *Louisiana State University Health Sciences Center-Shreveport, Overton Brooks VA Medical Center and Feist Weiller Cancer Center*

B303 **933.3** Novel Protein Interactions Provide Insight Into the Regulation of the Polymerase Associated Factor Complex in Acute Myeloid Leukemia. J. Ropa, J. Serio, L. Chen, W. Chen, M. Mysliwski, D. Mellacheruvu, V. Basrur, A. Nesvizhskii, A. Muntean, *University of Michigan*

B304 **933.4** Polyphenon E Alters P53 and P73 Gene Expression. R.A. Cordova, L. Carastro, D.E. Barboto, R.A. Declet-Bauzo, Z.M. Conelly, J.Y. Park, *The University of Tampa, Universidad Central del Caribe and H. Lee Moffitt Cancer Center & Research Institute*

B305 **933.5** Dissecting the TORC1 Gene Interaction Network by Perturbing Different Subunits. C.J. Torres Gutierrez, S.M. Santos, J.L. Hartman, *University of Puerto Rico at Ponce, Puerto Rico and University of Alabama at Birmingham*

B306 **933.6** Arsenic and Line-1 Disrupt Developmental Epithelial to Mesenchymal Transition: Implications for Cardiac Morphogenesis. A.B. Perrera, T. Huang, P. Bojang, M. Tavera-Garcia, E.M. Reyes-Reyes, K.S. Ramos, T.D. Camenisch, *University of Arizona*

B307 **933.7** The Role of CDKN3 in Neuroblastoma Differentiation. V. Partridge, L. Du, *Texas State University*

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Cancer Signaling and Therapeutics (II)

B308 **934.1** Electrophilic Nitro-Oleic Acid Inhibits Triple Negative Breast Cancer Cell Migration via Suppression of NF-κB Activity C. Woodcock, S. Woodcock, S. Salvatore, N. Davidson, Y. Huang, B. Freeman, *University of Pittsburgh and University of Pittsburgh Cancer Institute*

B309 **934.2** Sensitizing Pancreatic Cancer Cells to Chemotherapeutics by Modulating Intracellular Iron Homeostasis. K.D. Bilyeu, C. Li, *University of Louisville*

B310 **934.3** Individualized Proteogenomics in Analysis of Resistance to BRAF Inhibition in Malignant Melanoma. M. Schmitt, N. Nalpas, A. Maass, B. Macek, *University of Tuebingen, Germany*

B311 **934.4** Kv3.1 and Kv3.4 as Tumor Hypoxia Related Voltage-Gated Potassium Channels. M. Song, S. Park, J. Park, J. Byun, H. Jin, S. Seo, P. Ryu, S. Lee, *Seoul National University, Republic of Korea*

B312 **934.5** TG-Interacting Factor Can Elicit Hedgehog Pathway to Increase Resistance to Gemcitabine in Urothelial Carcinoma. H. Huang, Y. Huang, *Department of Medical Laboratory Science and Biotechnology, College of Medicine and National Cheng Kung University, Taiwan*

B313 **934.6** Sequence-Dependent Sorafenib Therapy in Combination with Natural Phenolic Compounds for Hepatocellular Carcinoma and Possible Mechanism of Action. M. Abaza, A.M. Bahman, S. Khoushiash, R. Al-Attiyah, *Kuwait University, Kuwait*

B314 **934.7** The Potential Role of NMDA Receptor Regulating TGF-β/Smad Pathway in Radiation-Induced Resistance in Glioblastoma Multiforme. C. Liu, S. Wu, C. Sze, *The Institution of Basic Medical Science, National Cheng Kung University, Taiwan, Department of Physiology, National Cheng Kung University, Taiwan, Department of Cell Biology and Anatomy and National Cheng Kung University, Taiwan*

B315 **934.8** The Chemosensory Bitter Taste Receptors (T2Rs) Are Involved in Proliferation and Migration of Breast Cancer N. Singh, F. Shaik, R.P. Bhullar, P. Chelikani, *University of Manitoba, Canada*

B316 **934.9** Holographic View of the Senescent Cells: Imagine All the Senescent Cells Are Not Flattened. Y. D. Simay, A. Özdemir, B. Ibisoglu, M. Ark, *Gazi University, Turkey*

B317 **934.10** Anticancer Activity of Novel Benzimidazole Derivatives Against MCF-7 Cancer Cells. A. Özdemir, S. Uzunoğlu, B. Çalışkan, E. Banoglu, M. Ark, *Gazi University, Turkey*

B318 **934.11** Puringeric Signaling in Bone as a Potential Mechanism in Prostate Cancer Proliferation and Cancer-Induced Bone Pain. M. Wilson, R. Duncan, M. Boggs, *University of Delaware*

B319 **934.12** Exploiting Immunogenic Modulation in Chordoma: Sublethal Radiation Increases EGFR Expression and Sensitizes Tumor Cells to Cetuximab. J. Griner, M. Padget, J. Hodge, *Florida Southern College, National Cancer Institute and National Institutes of Health*

B320 **934.13** Connections Between NF-κB Misregulation and Carcinogenesis. T. Link, D. Chyong, A. Naderi, C. Lee, T. Arpornsuksant, A. Lu, M. Dilip, M. Zhang, *Walton High School*

B321 **934.14** 3,4',7-O-Trimethylquercetin as a Novel Agent to Inhibit in Vitro Ovarian Cancer Cell Migration and Invasion. K. Yamauchi, S.H. Afroze, D.M. Dean, T. Mitsunaga, D.C. Zawieja, M.N. Uddin, *Gifu University, Japan, Texas A&M Health Science Center College of Medicine and Baylor Scott & White Health/Texas A&M Health Science Center College of Medicine*

B322 **934.15** Hypoxia and Serum-Deprivation Impacts Calcineurin B Homologous Protein Isoform 2 Expression and Activity in Non-Small Cell Lung Cancer. C.H. Wallert, J.J. Provost, M.A. Wallert, *Bemidji State University and University of San Diego*

B323 **934.16** The Role of the Na^+-H^+ Exchanger Isoform 1 (NHE1) and Calcineurin B Homologous Protein Isoform 2 (CHP2) on Cell Proliferation and Migration in Squamous Cell Carcinoma of the Lung. A.J. Kooiker, J.J. Provost, M.A. Wallert, *Bemidji State University and University of San Diego*

B324 **934.17** Characterizing the Role of the Na^+-H^+ Exchanger Isoform 1 (NHE1) in Cell Proliferation and Migration in Ovarian Cancer Cells. T.M. Manzella, J.J. Provost, M.A. Wallert, *Bemidji State University and University of San Diego*

B325 **934.18** Targeting Integrin-Linked Kinase with Small-Interfering RNA Suppresses Invasion and Metastasis in Cisplatin-Resistant Ovarian Cancer. J.M. Reyes-González, P. Báez, F. Valiyeva, P.E. Vivas-Mejía, *University of Puerto Rico, Medical Sciences Campus, Comprehensive Cancer Center*

B326 **934.19** Role of Bcl-2 in Hematological Cancer Formation. T. Link, A. Fortier, S. Jain, A. Kepner, A. Koh, L. Stanovski, M. Ul-Islam, E. Walter, *Walton High School*

B327 **934.20** Cinobufotalin Inhibits Ovarian Cancer Cell Metastasis via Apoptotic Signaling and Targeting the mTOR Pathway. S.H. Afroze, C. Peddaboina, D.M. Dean, A. McDowell, T.C. McCormick, K. Newell-Rogers, D.C. Zawieja, T.J. Kuehl, M.N. Uddin, *Texas A&M Health Science Center College of Medicine and Baylor Scott & White Health/Texas A&M Health Science Center College of Medicine*

B328 **934.21** Evaluation of the High Mobility Group A1 Proteins (HMGA1) as a Key Mediate in the Anticancer Activity of EF24. M.N. Diaz, L. Travis, S. Barber, T.F. Sumter, *Winthrop University*

B329 **934.22** A Novel Endoglin Variant in Pancreatic Ductal Adenocarcinoma. S. Kumar, N. Shah, N. Zaman, N.Y. Lee, *The Ohio State University Columbus, Ohio*

B330 **934.23** Role of Autophagy in Temozolomide-Induced Apoptosis in Rhabdomyosarcoma Cells. A. Rezaeimoghadam, J. Alizadeh, J. Field, S. da Silva Rosa, J.W. Gordon, S. Ghavami, *University of Manitoba*

B331 **934.24** Effects of Charged Resveratrol Derivatives on Ca^{2+} Homeostasis in Human Cancer Cells. J.A. Peterson, J.P. Hastings, J.D. Kenealey, *Brigham Young University*

B332 **934.25** Salicylates Promote ROS-Induced Endoplasmic Reticulum Stress Triggering Apoptosis on B16F10 Melanoma. P. Ausina, J.M. Albanese, J.B. Leandro, A.M. Mendonça, F. Palhano, D. Foguel, M.F. Oliveira, P. Zancan, M. Sola-Penna, *Universidade Federal do Rio de Janeiro, Brazil*

B333 **934.26** Inhibition of microRNA-17 Promotes the Progression of Thyroid Cancer in a Xenograft Murine Cancer Model. Y. Yan, S. Eliason, R. Ries, L. Hong, H. Cao, B.A. Amendt, *University of Iowa, Craniofacial Anomalies Research Center, Carver College of Medicine and Iowa Institute for Oral Health Research*

B334 **934.27** Synthesis of a Mini-Reporter Construct to Test Gene Transfer of RNA Therapeutics. K. Muralidharan, A.M. Khan, K. Fuoco, H. Patel, M.J. Hicks, *Monmouth University*

B335 **934.28** Characterizing the Specificity of E3 Ubiquitin Ligase MARCH1 for CD98. S.S. Najera, J. Ablack, M. Ginsberg, *San Diego State University, University of California, San Diego*

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B336 **935.1** An Ageless Wonder: Decreasing Cardiac CapZ Prevents Myocardial Decline in Aged Mice. W.G. Pyle, I. Lorenzen-Schmidt, C.J. Reitz, F.J. Alibhai, T.A. Martino, *University of Guelph, Canada*

B337 **935.2** Analysis of Telomere Length in Aging and Age-Related Illness. S.M. Connon, G.P. Einstein, O.L. Tulp, *USAT Montserrat, Montserrat*

B338 **935.3** Follicle Stimulating Hormone and Reproductive Aging. A. Pardue, I. Dvoretz, C. Wright, A. Custard, E. Barbara, D. Langat, *Olathe North High School*

B339 **935.4** The Role of the Sphingolipid Metabolism Pathway in Healthy Aging. H.P. Hrobuchak, A.P. Ardasheva, D.P. Servello, A.P. Nolan, J.P. Chan, *Juniata College*

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Neurobiology and Neuronal Signaling

B340 **936.1** Comparative Study of the Response to Light on the Sensory Motor Integration of Gill Lateral Cell Cilia in Bivalve Mollusc. D. Semple, J. Jean-Pierre, M.A. Carroll, E.J. Catapane, *Medgar Evers College*

B341 **936.2** Immunohistofluorescence Localization of Biogenic Amine Receptors in Ganglia and Tissues of the Bivalve Mollusc, *Mytilus edulis*. D. Cummings, M. Jacobs, M.A. Carroll, E.J. Catapane, Catapane, *Medgar Evers College*

B342 **936.3** Coordinated Beating of Gill Lateral Cell Cilia of *Mytilus edulis* and *Crassostrea virginica* Involves Neuronal Innervation and Functioning Gap Junctions. R. Buchanan, C. Robertson, D. Frank, E.J. Catapane, M.A. Carroll, *Medgar Evers College*

B343 **936.4** High-Throughput Functional Annotation of the *Caenorhabditis elegans* Neural Network. W. Aoki, H. Yokoyama, H. Matsukura, M. Ueda, *Kyoto University, Japan, JST, PRESTO, Japan, JST and PRESTO, Japan*

B344 **936.5** Neural Stem Cells Promote Nerve Regeneration Through IL12-Induced Schwann Cell Differentiation. I. Chiu, D. Lee, J. Chen, *National Health Research Institutes, Taiwan*

B345 **936.6** Attenuation of Glia Maturation Factor Enhances Mitochondrial Biogenesis, Decreases Oxidative Stress and Apoptotic Cell Death in N27 Dopaminergic Neurons. G.P. Selvakumar, D. Kempuraj, R. Thangavel, M.E. Ahmed, S. Zaheer, S.S. Iyer, A. Zaheer, *University of Missouri and HSTM Veterans Hospital*

B346 **936.7** The Role of Rho/ROCK Pathway on the Sacral Neural Crest Cell Migration in the Mouse Gut. X. Zhang, W. Chan, *School of Biomedical Sciences, Faculty of Medicine and The Chinese University of Hong Kong, Hong Kong*

B347 **936.8** Potential Mechanisms of the Antidepressant Effects of FGF2: Gene Expression Changes in Postmitotic Human Excitatory Neurons. S. Gupta, T. Redmond, F. Meng, M. Uhler, *University of Michigan*

B348 **936.9** Molecular Cloning of a Novel 69 kDa Brain-Specific Isoform of Regulator of G Protein Signaling 6 (RGS6) K.E. Ahlers, A. Stewart, J. Yang, J.G. Koland, R.A. Fisher, *University of Iowa and Florida Atlantic University*

B349 **936.10** Optogenetic Stimulation of BLA Cholinergic Terminals Induces a Hypophagic Phenotype. A.P. Addison, J. Ortiz-Guzman, B.R. Arenkiel, *University of St. Thomas, Baylor College of Medicine and Jan & Dan Duncan Neurological Research Institute*

B350 **936.11** PR_n Poly-Dipeptides Encoded by the Repeat Expansion in C9orf72 Block Nuclear Import and Export. K. Shi, *UT Southwestern*

B351 **936.12** The Role of Neurotropism in HIV-1 gp120 Induced Oxidative Stress and Neurodegeneration. L. Smith, K. Walsh, L. Whittington, A. Shaw, L. Minamide, K. Watson, G. Cartagena, J. Bamburg, T. Kuhn, *University of Alaska Fairbanks and Colorado State University*

B352 **936.13** Identifying the Expression Patterns of xCT in Zebrafish to Determine Its Role in Neuroregeneration. M.A. Solorzano, N.A. Ladd, K.C. Franz, C.O. Da Silva, S.M. Degnan, L.A. Chase, A.P. Putzke, B.P. Krueger, *Hope College and Whitworth University*

B353 **936.14** Measuring Nestin Expression in RA-BDNF Differentiated SH-SY5Y Human Neuroblastoma Cells by Flow Cytometry. J. Graham, T. Laakko Train, *Elon University*

B354 **936.15** Elucidating the Reproductome: System-Wide Regulation of Reproductive Neuropeptides. M. Glucksman, K. Philibert, N. Woitowich, J. Urban, G. DeJoseph, *Chicago Medical School and Northwestern University*

B355 **936.16** Novel Role of bHLH Proteins in Synaptogenesis: Class I bHLH Proteins TCF4 and Daughterless Restrict Synaptic Branching and Bouton Formation via Neurexin Repression in Postmitotic Neurons. E.L. Robinson, E.A. Waddell, M. D'Rozario, D.R. Marenda, *Drexel University, Washington University School of Medicine and Drexel University College of Medicine*

B356 **936.17** An Artistic Approach for Purification of Adeno-Associated Virus and Adenovirus. D. He, M. Xie, *C&M Biolabs*

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B357 **937.1** Prion-Like Protein Polymerisation Underlies Signal Transduction in Innate Immunity: The Emergence of a Universal Mechanism?. A. O'Carroll, T. Ve, M. Moustaqil, N. Giles, A. Bhumkar, D. Hunter, B. Kobe, E. Sierecki, Y. Gambin, *UNSW (University of New South Wales), Australia and UQ (University of Queensland), Australia*

B358 **937.2** Novel Mechanism That Regulates Innate Immunity. A. Frolov, C. Csepeggi, L. Yang, M. Jiang, E. Cook, L.J. Crofford, *Saint Louis University, University of Cincinnati, University of Kentucky and Vanderbilt University*

B359 **937.3** Investigating Structural Drivers of Antigen Specificity. N.K. Singh, S. Smith, D. Harris, D. Kranz, B.M. Baker, *University of Notre Dame and University of Illinois- Urbana Champagne*

B360 **937.4** Detecting Pal Lipoprotein in Gram-Negative Sepsis Patients. K. Farquharson, B. Novick, E. Snyder, M. Pichichero, J. Hellman, L. Michel, *Rochester Institute of Technology, Rochester General Hospital, University of California, San Francisco*

B361 **937.5** Elucidating the Effects of Antibiotics on the Release of Pal from *Escherichia coli* and P6 from Nontypeable *Haemophilus influenzae*. N. Fernandez, C. McNamara, M. Pichichero, J. Hellman, L. Michel, *Rochester Institute of Technology, Rochester General Hospital, University of California, San Francisco*

B362 **937.6** Effect of ZNT7 on the CD40 Signaling Pathway in B Lymphocytes: A Possible Mechanism for a Regulatory Role of Zinc in Immune Function. L. Huang, S. Tepaamorndech, P. Oort, C.P. Kirschke, Y. Cai, *University of California, Davis, USDA/ARS/Western Human Nutrition Research Center and National Center for Genetic Engineering and Biotechnology (BIOTEC), Thailand*

B363 **937.7** Protection from Influenza a Virus Infection by Modulating Nucleotide-Binding Oligomerization Domain Containing 2 (NOD2) Signaling K.M. Wiese, C.M. Koch, B. Coates, K.M. Ridge, *Northwestern University*

B364 **937.8** The Effects of Thapsigargin and Concanavalin a on Jurkat T-Cell Interleukin-2 (IL-2) Production: A Preliminary Study. R.M. Lee, W. Jones, *Viterbo University*

B365 **937.9** HIV-1 $gp120_{JRFL}$ Mediated Human $\alpha 7$ nAChR's Up-Regulation and Its Implications in the Cholinergic Anti-Inflammatory Response (CAP). S. Cotto, J.O. Colon, O. Quesada, J.A. Lasalde, *University of Puerto Rico, Puerto Rico, UPR Medical Sciences Campus, Puerto Rico and UPR Rio Piedras, Puerto Rico*

B366 **937.10** YKL40: A Key Modulator of the CF Inflammatory Response?. G.F. Bouvet, O. Bulka, A. Coriati, C. Massé, Y. Berthiaume, *IRCM, Canada*

B367 **937.11** Recombinant Adenoviral Vaccine Carrying the S1 Subunit of the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Spike Gene Can Elicit Cellular Immune Response in Mice. M. Ababneh, *Jordan University of Science and Technology, Jordan*

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Targeted Therapies and New Targets for Drug Discovery

B368 **938.1** Lentivirus-Mediated RNA Interference Knockdown of Inositol Requiring 1 Enhances Sorafenib Lethality in Hepatoma Hep3B Cells Involving Autophagy Inhibition. Y. Hu, H. Ye, G. Zhang, L. He, Z. Liu, L. Chen, *The People's Hospital of Guangxi Zhuang Autonomous Region, People's Republic of China, Guangxi Medical University, People's Republic of China, First Affiliated Hospital of Guangxi Medical University, People's Republic of China*

B369 **938.2** Muscle Growth by Activin Type II Receptor Blocking Ameliorates Weakness in GNE Myopathy Mice. S. Noguchi, T. Yonekawa, M.V. Malicdan, M. Miyakawa, E. Lach-Trifilieff, I. Nonaka, I. Nishino, *National Institute of Neuroscience, NCNP, Japan, National Human Genome Research Institute, National Institutes of Health and Novartis Institutes for Biomedical Research, Switzerland*

B370 **938.3** The Tyrosine Phosphatase PRL3 Drives T-Cell Acute Lymphoblastic Leukemia Progression. R.E. Sieg, S. Lammers, S. Hausman, J. Blackburn, *Blackburn, University of Kentucky*

B371 **938.4** A Time Course Analysis of the Effects of Arachidin 1 and Arachidin 3 on a Rotavirus-Infected Human Intestinal Cell Line. C.M. Witcher, H.N. Lockwood, R. Napier-Jameson, M.N. Mattila, E.B. Strange, J. Taylor, B. Clack, F. Medina-Bolivar, J.M. Ball, *Stephen F Austin State University, Arkansas State University and Texas A&M University Commerce*

B372 **938.5** Inulin Acetate Nanoparticles as Vaccine Adjuvants. S. Narisetty, *Kalamazoo College*

B373 **938.6** Peptide B7-33, a Single-Chain Derivative of the Relaxin Hormone Protects Cytotrophoblasts from Marinobufagenin-Induced Preeclampsia Phenotype. A.F. Pantho, S.H. Afroze, D.M. Dean, M.A. Hossain, R. Bathgate, S. Xia, D.C. Zawieja, T.J. Kuehl, M.N. Uddin, *University of Texas at Austin, Texas A&M Health Science Center College of Medicine, Baylor Scott & White Health/Texas A&M Health Science Center College of Medicine, University of Melbourne, Australia and Boster Biological Technology*

B374 **938.7** Characterization of Asialoglycoprotein Receptor (ASGPR) Directed Hepatocellular Delivery Using a Pfizer Developed Targeting Ligand PF-06853291. M. Roy, J. Finley, T. Coskran, A. Shen, S. Xia, B. Thuma, V. Mascitti, *Pfizer, Groton, CT*

B375 **938.8** Use of Novel Drug Carrier System to Selectively Deliver Rolipram to the Liver for the Treatment of Alcoholic Liver Disease. W. Rodriguez-Alvarez, J. Zhang, G. Perez-Abadia, C. McClain, S. Barve, C. Maldonado, L. Gobejishvili, *University of Louisville*

B376 **938.9** Targeting the Transcriptional Kinases CDK12 and CDK13 in Breast and Ovarian Cancer. K. Hamman, M. Bradley, J. Marineau, Y. Choi, G. Malojcic, D. Orlando, Y. Ren, N. Ke, S. Hu, E. Olson, C. Fritz, C. Roberts, *Syros Pharmaceuticals*

B377 **938.10** TRPM7 Kinase Domain Rather Than the Channel Regulates Breast Cancer Cell Migration and Tumor Metastasis. T.S. Kaoud, X. Xie, R.A. Mangieri, J. Park, C.D. Tavares, N.D. Ebelt, M. Cano, S.V. Ravenstein, S. Mitra, M.F. Radwan, R.A. Morrisett, C. Bartholomeusz, K.N. Dalby, *The University of Texas at Austin, MD Anderson Cancer Center, Harvard Medical School, King Abdulaziz University, Saudi Arabia*

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B378 **939.1** The Development of Novel Small Molecule Inhibitors of *Listeria monocytogenes* and *Staphylococcus aureus* Pyruvate Carboxylase. B.N. Wyatt, S. Matloub, M. St. Maurice, *Marquette University*

B379 **939.2** Unravelling the Myths and Mysteries of the Antimicrobial Agent, Silver. J. Lemire, K. Chatfield-Reed, L. Kalan, N. Gugala, C. Westersund, H. Almblad, G. Chua, R.J. Turner, *The University of Calgary, Canada and Perelman School of Medicine*

B380 **939.3** Aral Phosphatase from *Bacillus subtilis*, a Member of the HAD Superfamily. C. Martin, J. Armeli, M. Madaio, J. Hill, S. O'Handley, *Rochester Institute of Technology*

B381 **939.4** Exploring Inhibitors of the Periplasmic Chaperone SurA Using Fluorescence Anisotropy. E.J. Zheng, E.W. Bell, L.M. Ryno, *Oberlin College*

B382 **939.5** Targeting Sigma Factor Controlled Signaling Pathways to Modulate Biofilm Growth and Composition. L.M. Ryno, E.R. Brezel, S.J. Loewus, E.J. Zheng, *Oberlin College*

B383 **939.6** Diadenosine Polyphosphatases of the NUDIX Hydrolase Superfamily in *M. tuberculosis*. A.M. DiCola, A. Knowles, S. O'Handley, *Rochester Institute of Technology*

B384 **939.7** Suppression of Biofilm Formation in *Staphylococcus aureus* by Targeting Staphylococcal Accessory Regulator X Expression Using siHybrids. M. Morrow, *Westminster College*

B385 **939.8** Discovery of Antibiotic Peptides from Novelty-Prioritized Natural Product Genome Mining. C.J. Schwalen, D. Mitchell, *University of Illinois at Urbana-Champaign*

B386 **939.9** Small-Molecule Inhibitors Against Type 1 Pili Selectively Target Uropathogenic *E. coli* in the Gut and Bladder. C.N. Spaulding, A.L. Kau, R.D. Klein, J.W. Janetka, J.I. Gordon, S.J. Hultgren, *Washington University in St. Louis*

B387 **939.10** Synthesis of Potential AAC(6')-Ib Inhibitors to Combat Bacterial Resistance to Aminoglycoside Antibiotics. M. Simes, K.J. Labby, K. Johnson, *Beloit College*

B388 **939.11** Phagosomal Copper Triggers a Peptidomimetic's Oxidative Activity and Enables Eradication of Intracellular *Mycobacterium tuberculosis*. M.J. Libardo, K. Anand, G. Krishnamoorthy, S.H. Kaufmann, A. Singh, A. Angeles-Boza, *University of Connecticut, Indian Institute of Science, India and Max Planck Institute for Infection Biology, Germany*

B389 **939.12** Targeting Resistant Bacterial Pathogens with Next Generation Antifolates. D. Wright, *University of Connecticut*

B390 **939.13** The Antimicrobial Properties of Extracts Isolated from Lichen *Parmelia Vagans*. V. Bondarenko, M. Korczynski, W. Techathaveewat, *Touro University Nevada*

B391 **939.14** MsbA as a Drug Discovery Target for Compounds with Antibacterial Activities. C.A. LaVigne, J.W. McCormick, P.D. Vogel, J.G. Wise, *Southern Methodist University*

B392 **939.15** Inhibition and Dispersion of Biofilms: Targeting Bacterial Response Regulators to Resensitize Multidrug Resistant Bacteria to Antibiotics. M.E. Milton, G.L. Draughn, E.A. Feldmann, R.J. Thompson, D. Jung, B. Kang, K.E. Theisen, D. Zeng, J.L. Lucas, C.C. Melander, J. Cavanagh, *RTI International, North Carolina State University, Agile Sciences, Inc. and MRIGlobal*

B393 **939.16** Kinetic Evaluation of the Reaction of Glutamate Racemase with Computationally Derived Inhibitors Provides Validation of a Successful Pharmacophore Model for a New Line of Antibiotic Therapy. M. Young, E. Wells, O. Dinsmore, J. Marchiano, T. Mahfouz, A. Stockert, *Ohio Northern University*

B394 **939.17** Evaluating the Activity of Bacterial Enzyme DXP Synthase a Potential Target for Newer Antibiotics. A.M. Kessler, S. Anand, K.P. Callahan, *St. John Fisher College*

B395 **939.18** Structural, Biochemical, and Cellular Studies of TarA, the Novel Wall Teichoic Acid Glycosyltransferase, for the Discovery of Gram-Positive Bacterial Inhibitors M. Kattke, J. Gosschalk, R. Clubb, *UCLA*

B396 **939.19** Analysis of Lysin a from Two Novel Mycobacteriophages. N. Surendranathan, *Montclair State University*

B397 **939.20** Association of Acid Phosphatase-1 (ACP1) Gene Polymorphism with MAI Infection. R.G. Andavolu, A.A S. Rubakovic, O.G. Rodriguez, C. Stafford, *Genetic Research Institute of the Desert*

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B398 **940.1** Antimicrobial Activity of a High-Pressure Enzymatic Extracts Using *Prunus mume*. J. Jang, T. Oh, *Hanseo University, Republic of Korea, Sunmoon University, Republic of Korea*

B399 **940.2** The Use of Next Generation DNA Sequence to Determine Fungal Diversity on Potato Tubers Treated with 1,4-Dimethylnaphthalene. R.N. Patel, R.A. Diaz, M.A. Campbell, *Penn State Behrend*

B400 **940.3** The Role of the Negative Control in Microbiome Analyses. K. Edmonds, L. Williams, *Providence College*

B401 **940.4** Bladder and Vaginal Microbiomes Have a Corresponding Shift Following Estrogen Treatment in Post-Menopausal Women. K. Thomas-White, S. Taege, D. Johansen, E.E. Hilt, C. Brincat, E.R. Mueller, L. Brubaker, A.J. Wolfe, *Loyola University Chicago*

B402 **940.5** Gulliver Prototype Development and Deployment. C. Williams, B. Berdy, S. Epstein, *Northeastern University*

B403 **940.6** Microbial Masterpieces: Bacterial Community Profiling in the Hastings College Art Buildings. S. Athy, E. Tidwell, A. Laederach, A. Solem, *Hastings College and UNC Chapel Hill*

B404 **940.7** The Metatranscriptome of the Rhesus Macaque: Investigating Potential Causes of Idiopathic Chronic Diarrhea. S.T. Westreich, A. Ardeshir, M.E. Kable, I. Korf, D.G. Lemay, *University of California, Davis and USDA ARS Western Human Nutrition Research Center*

B405 **940.8** Bacterial and Fungal Microbiota Changes Distinguish *C. difficile* Infection from Other Forms of Diarrhea: Results of a Prospective Inpatient Study. J.N. Hackman, W. Sangster, J.P. Hegarty, K.M. Schieffer, J.R. Wright, D.R. Toole, R. Drucker, D.B. Stewart Sr., R. Lamendella, *Juniata College, The Pennsylvania State University, Wright Labs, LLC*

B406 **940.9** Effects of a Junk-Food Diet on the Rat Gut Microbiome. A. Gutilla, C. Campbell, M. Pikaart, P. Vollbrecht, *Hope College*

B407 **940.10** Design and Analysis of a Microbiome Mock Community: Understanding and Mitigating Methodological Biases. S. Mosby, M. Kiflezghi, D. Edwards, P.J. Brooks, M. Rivera, *Virginia Commonwealth University*

B408 **940.11** Probiotics Alter Avian Serum Profile to Stimulate Energy Consumption and Change of Gene Expression in Immune Cells. A. Ballou, R. Ali, M. Koci, *NC State University*

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B409 **941.1** Resveratrol Shortens the Chronological Life Span of *Saccharomyces cerevisiae* Under Dietary Glucose Restriction. L. Madrigal-Perez, I. Olivares-Marin, M. Canizal-Garcia, J. Gonzalez-Hernandez, G. Nava, M. Ramos-Gomez, *Universidad Autonoma de Queretaro, Mexico, Instituto Tecnológico Superior de Ciudad Hidalgo, Mexico and Instituto Tecnologico de Morelia, Mexico*

B410 **941.2** Association Between the Serum Metabolome and All-Cause Mortality: A Prospective Analysis in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention (ATBC) Study Cohort. J. Huang, S. Weinstein, S. Moore, J. Sampson, D. Albanes, *NIH/NCI*

B411 **941.3** Teniposide Reduces Vascular Calcification by Inhibiting BMP2 Expression. L. Liu, X. Zhang, Y. Chen, Y. Duan, J. Han, *Nankai University, People's Republic of China*

B412 **941.4** Time Course Metabolic Profiling of Senescing Flight Muscles in the Hawk Moth, *Manduca sexta*. B. Wone, J.M. Kinchen, E.R. Kaup, B.W. Wone, *University of South Dakota and Metabolon*

B413 **941.5** Hepatic Metabolic Reprogramming by Caloric Restriction in Rhesus Monkeys. T.W. Rhoads, M.S. Burhans, S.J. McIlwain, P.D. Hutchins, V.B. Chen, H.R. Eghbalnia, I.M. Ong, J.L. Markley, J.J. Coon, R.M. Anderson, *University of Wisconsin-Madison and Fred Hutchinson Cancer Research Center*

B414 **941.6** Sirtuin 3- and Diet-Mediated Regulation of Mitochondrial Function During Aging. R.S. Dhillon, P.R. van Ginkel, V. Fu, T.A. Prolla, J.M. Denu, *University of Wisconsin*

B415 **941.7** The Transmembrane Sequences of Amyloid Precursor Protein Family Members Regulate Their Ectodomain Shedding. G. Multhaup, L. Schauenburg, M. Mayer, C. Walter, M. Eravci, C. Weise, F. Liebsch, *McGill, Canada and FU Berlin, Germany*

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Metabolism and Cancer

B416 **942.1** 3D Vasculature Structure in Breast Cancer on a Chip Approaches Through Micromilling L. Wan, P.R. LeDuc, C. Neumann, *Carnegie Mellon University and University of Pittsburgh*

B417 **942.2** E-Cadherin Regulates Mitochondrial Metabolism and Induces Cell Growth Through NF-κB in E-Cadherin Deficient AGS Cells. S. Park, J. Shin, S. Kee, *Korea University, Republic of Korea*

B418 **942.3** Human Hepatocellular Carcinoma Cells Adapt to ASCT2 and LAT1 Amino Acid Transporter Silencing by shRNA and CRISPR-Cas9. P. Bothwell, B. Bode, *Northern Illinois University*

B419 **942.4** MED28 Mediates Glucose Metabolism in Human Colorectal Cancer Cells. N. Hsieh, C. Huang, Y. Weng, Y. Lin, M. Lee, *China Medical University, Taiwan and Chang Jung Christian University, Taiwan*

B420 **942.5** Involvement of SNX27-Retromer in ASCT2 Trafficking and Glutamine Uptake. Z. Yang, J. Follett, M. Kerr, T. Clairfeuille, B. Collins, R. Teasdale, *Institute for Molecular Bioscience, Australia*

B421 **942.6** Metformin Kills Breast Cancer Cells by Inducing NADH Accumulation, Pyruvate Depletion and Reductive Stress. C.L. Iglesias, B.A. Ratti, C. Kang, A.L. de Abreu, M.G. Bonini, *University of Illinois at Chicago*

B422 **942.7** Succinate Drives Aggressiveness in Breast Cancer. C. Kang, M. Bonini, *University of Illinois at Chicago*

B423 **942.8** An Integrated Biology Approach to Determine Metabolic Dysfunction in Retinoblastoma. N. Guha, L. Winer, V. Suresh Babu, D. Sa, S. Lateef, S. Gundimeda, A. Padmanabhan, B. Dranka, A. Ghosh, *Agilent Technologies, India, Agilent Technologies and Narayana Nethralaya, India*

B424 **942.9** Potential Role for a Phosphoserine Aminotransferase 1 and Pyruvate Kinase M2 (PSAT1:PKM2) Functional Interaction in Lung Cancer Cells. B.F. Clem, T. Kruer, J. Bradley, M. Merchant, J.O. Trent, R.B. Sit, *University of Louisville*

B425 **942.10** Inhibition of Glycogen Metabolism as a Potential Strategy for Anticancer Therapy. V.V. Dukhande, S. Barot, S. Husein, C. Palaguachi, *St. John's University*

B426 **942.11** Development and Standardization of Methodology for Diagnosis and Detection of Response to Chemotherapy in Patients with Colorectal Cancer. J.V. Assis, L.A. Coutinho, M. de Oliveira Silva Pinto, R.R. Cruz, R.F G. Queiroz, *Rene Rachou Research Center, Oswaldo Cruz Foundation, CPqRR-FIOCRUZ, Fiocruz, Brazil*

B427 **942.12** Pyruvate Carboxylase Is Essential for Breast Cancer Metastasis *in Vivo*. T.M. Wilmanski, A. Shinde, S.S. Donkin, J. Burgess, M. Wendt, D. Teegarden, *Purdue University*

B428 **942.13** Combination Therapy to Enhance the Efficacy of Recombinant Immunotoxins: Evaluating the Role of Mitochondrial Translation in Toxin-Mediated Cell Death. Y. Zhu, J. Weldon, *Towson University*

B429 **942.14** Targeting Mitochondrial Molecular Chaperones as a Potential Therapeutic Target in Leukemia. K.G. Bryant, D.C. Altieri, *Wistar Institute*

B430 **942.15** The UDP-Glucuronosyltransferase (UGT) 2A1^{308arg} Variant Isoform: Its Role in Modulating Wild-Type UGT2A1 Activity and Its Association with Lung Cancer Risk. A.K. Sutliff, R. Bushey, J.H. Ashmore, P. Lazarus, *Washington State University and Duke University*

B431 **942.16** Buffer Therapy for Cancer. C.J. Pilot, R. Gillies, *The University of Tampa and Moffitt Cancer Center*

B432 **942.17** Cancer-Specific Cell Death in Response to Palmitoylcarnitine Is Associated with Increased Mitochondrial Hydrogen Peroxide. P.C. Turnbull, C.G. Perry, *York University, Canada*

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Metabolism and Nutrition

B433 **943.1** Thimet Oligopeptidase (EP24.15), a Neuropeptide Processing Enzyme Regulatingxenin Signaling. M. Glucksman, K. Philibert, T. Mizuno, P. Lew, *Chicago Medical School and University of Manitoba, Canada*

B434 **943.2** Vitamin E Deficiency Causes Mortality in Zebrafish Embryos via Metabolic Dysregulation due to Redox-Mediated Mechanisms. M.Q. McDougall, J. Choi, H. Kim, G. Bobe, E. Ho, J.F. Stevens, E. Cadenas, R. Tanguay, M.G. Traber, *Linus Pauling Institute, Oregon State University, Catholic University of Korea, Republic of Korea, University of Southern California and Sinnhuber Aquatic Research Laboratory*

B435 **943.3** Effects of Acute Aerobic Exercise on Whole Genome Nucleosome Maps and Gene Expression in Skeletal Muscle of Lean vs Overweight/Obese Men. P.M. Devarshi, A.D. Jones, W.W. Campbell, E.M. Taylor, T.M. Henagan, *Purdue University*

B436 **943.4** Isolation, Identification, and Characterization of Local Wild Yeasts for Use in Fermentation. L.N. DeLong, B. Noone, L. Erickson, *Salisbury University*

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Diabetes, Obesity and Metabolic Syndrome (II)

B437 **944.1** Role of iNKT Cells in Obese Adipose Tissue. J. Park, J. Huh, Y. Ji, J. Kim, *School of Biological Sciences, Institute of Molecular Biology & Genetics, Seoul National University, Republic of Korea*

B438 **944.2** Anti-Hyperglycemic Effect of Arginyl-Fructosyl-Galactose (AFL) in SD Rat Model Induced Lactase Expression Using Milk Administration J. Lee, H. Choi, Y. Kim, E. Apostolidis, Y. Kim, Y. Kwon, *Hannam University, Republic of Korea, University of Massachusetts, Framingham State University, Chungnam National University, Republic of Korea*

B439 **944.3** Effects of 3D Culture and Aqueous Cinnamon Extract on 3T3-L1 Adipogenesis E. Wells, O. Dinsmore, A. Aulthouse, D. Kinder, J. Marchiano, A. Stockert, *Ohio Northern University*

B440 **944.4** Development of Novel Allele Specific PCR Based Assays to Investigate the Contribution of Cortisol to Metabolic Syndrome. B.R. Godlewski, J.R. Salm, B.D. Cohen, *Union College*

B441 **944.5** FoxO1 Localization Changes in *Cinnamonium cassia* Treated 3T3-L1 Pre-Adipocytes. K. Bova, A. Aulthouse, A. Stockert, *Ohio Northern University*

B442 **944.6** Analysis of Gene Expression in a Female Rat Model of Diet-Induced Non-Alcoholic Fatty Liver Disease Using RNA Sequencing. J.J. Bowman, J.K. Lee, R.A. Perets, M.L. Knabe, J.W. Guider, S. Phillips, U.D. Sarwadnya, S.N. Blythe, N. Toporikova, G.B. Whitworth, *Washington and Lee University*

B443 **944.7** Determining the Association and Interaction of Obesity Gene Risk Variants with Metabolic Disease Phenotypes. J.J. Castillo, V.R. Shah, L. Luo, W.S. Garver, *University of New Mexico*

B444 **944.8** Micro RNAs Mediating Effects of Adipose Angiotensinogen in Adipocyte Inflammation and ER Stress. K.R. Menikdiwela, N. Moustaid-Moussa, L. Ramalingam, S. Scoggin, N.S. Kalupahana, *Texas Tech University and University of Peradeniya, Sri Lanka*

B445 **944.9** Chronic Diabetic Wounds: Longitudinal Profiling of the Evolving Microbiome and Metabolic Landscape in Diabetic Patients. M.B. Ammons, A.L. Fuchs, B.P. Tripet, V. Copie, A.J. Weaver, A. Braaksma, E. Johnson, C. Yeoman, *Montana State University and Bozeman Deaconess Health Hospital*

B446 **944.10** Effect of the Bioactive Compounds Genistein and Resveratrol on Insulin Resistance in Patients with Metabolic Syndrome. E.T. Godínez Salas, M. Guevara-Cruz, P. Villanueva- Luna, M. Guizar-Heredia, G.M. Torres Villalobos, E. Pichardo Ontiveros, G. Ordaz Nava, I. Torres Villalvazo, N. Torres, A.R. Tovar, *Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Mexico*

B447 **944.11** Therapeutic Targeting of Skeletal Muscle Nix in Early-Onset Insulin Resistance. S.C. da Silva Rosa, L. Nguyen, Y. Hai, D. Chapman, C. Rampitsch, J.W. Gordon, *University of Manitoba, Canada and Children's Hospital Research Institute of Manitoba, Canada*

B448 **944.12** Novel Crosstalk Between Insulin and TGF-Beta Signaling in Vascular Endothelial Cells. N. Shah, C. Pan, S. Kumar, N. Zaman, F. Elmasry, N.Y. Lee, *The Ohio State University Columbus, Ohio*

B449 **944.13** Environmental Lead (Pb)-Exposure, When Combined with Diet-Induced Obesity, Induces Metabolic and Behavioral Abnormalities in Mice. E.A. Lisznyai, D. Yamin, M. Lisieski, P. Stemmer, T. Leff, S. Perrine, *Wayne State University*

B450 **944.14** Effect of Surfactin Administration on Glucose and Lipid Metabolism in Mice Fed a High Fat Diet. M.A N. Porto, P.R. Marinho, M.E. Oliveira, P.A. Granjeiro, M.E S M. Santos, *Federal University of São João del Rei, Brazil*

B451 **944.15** Improvement of Diabetic Cardiomyopathy by *Eryngium carlinae*. D. García-Cerrillo, R. Noriega-Cisneros, D. Peña-Montes, R. Salgado-Garciglia, S. Manzo-Avalos, M. Clemente-Guerrero, R. Montoya-Pérez, A. Saavedra-Molina, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico*

B452 **944.16** Attenuation of Mitochondrial Dysfunction During Hepatic Steatosis by Avocado Oil Supplementation. C.i. Garcia-Berumen, O. Ortiz-Avila, C. Márquez-Ramírez, E. Calderón-Cortés, R. Montoya-Pérez, A. Rodriguez-Orozco, A. Saavedra Molina, C. Cortés-Rojo, *Universidad Michoacana de San Nicolas de Hidalgo, Mexico*

B453 **944.17** Comparative Effects of Avocado Oil and a Thiol Reductant on Impaired Complex I Activity in Mitochondria from Diabetic Rats. M. Hernandez, C. Flores-Ledesma, L. Sánchez-Briones, C. Alonso-Velázquez, R. Aguilar-Toral, J. Campos-García, A. Saavedra-Molina, C. Cortés-Rojo, *Universidad Michoacana de San Nicolas de Hidalgo, Mexico*

B454 **944.18** Expression of Myoinositol Transporters in Nervous System Tissues in the Course of Experimental Diabetes. C.F. Santos, V.X. Farias, P.N. Uchôa, C.P. Aquino, M.C. Fonteles, N.R 'F. Nascimento, *Ceara State University, Brazil and Ceara State University and Mackenzie University, Brazil*

B455 **944.19** Relation of Hypoglycemic Activity and the Antioxidant Capacity of *Justicia spicigera* Leaf Extracts in Diabetic Rats. J.A. Martínez-Mora, M. Murillo-Villicaña, R. Salgado-Garciglia, S. Manzo-Avalos, C. Cortés-Rojo, R. Montoya-Pérez, A. Saavedra-Molina, *Universidad Michoacana de San Nicolás de Hidalgo, Mexico*

945
Lipidomics

B456 **945.1** The Ebola Virus Matrix Protein VP40 Interacts Selectively with Plasma Membrane Lipids to Promote Viral Egress. K. Del Vecchio, A. Shwarz, E. Ollmann Saphire, R. Stahelin, *University of Notre Dame, The Scripps Research Institute and Indiana University School of Medicine*

B457 **945.2** Optimization of ESI Parameters for Comprehensive Lipid Analysis. R.M. Gathungu, P. Larrea, M.J. Sniatynski, B.S. Kristal, *Brigham and Women's Hospital & Harvard Medical School*

B458 **945.3** Time Resolved IRMS Study of Staurosporine Induced Apoptosis in Murine Astrocyte Cells. K.N. Weber, S.C. Husher, P.A. Mazzer, *Dakota Wesleyan University*

946
Lipid Signaling

B459 **946.1** Homeostatic Regulation of Serine Palmitoyltransferase (SPT) Is Mediated by a Direct Interaction of Ceramide with the SPT/ORMDL Complex. D. Davis, B. Wattenberg, *Virginia Commonwealth University*

B460 **946.2** Differential Growth State-Dependent Activation of p38MAPK by Treatment of Endothelial Cells with Docosahexaenoic Acid (DHA). Y. Du, C.G. Taylor, H.M. Aukema, P. Zahradka, *University of Manitoba, Canada and St Boniface Albrechtsen Research Centre, Canada*

B461 **946.3** Tocopherols and Tocotrienols Prevent Lipoxygenase-Driven Phospholipid Oxidation in Ferroptosis. G. Mao, F. Qu, J. Angeli, C. St Croix, H. Dar, V. Tyurin, V. Ritov, A. Kapralov, A. Amoscato, T. Anthonymuthu, D. Mohammadyani, Q. Yang, B. Stockwell, Y. Tyurina, M. Conrad, H. Bayır, V. Kagan, *University of Pittsburgh, Helmholtz Zentrum München, Institute of Developmental Genetics, Germany and Columbia University*

B462 **946.4** Generating a Transgenic Mouse Line Containing the Plasma Membrane Phosphatidylinositol 4,5-Bisphosphate Depletion System. G. Gulyás, B. Szalai, M. Geiszt, T. Balla, L. Hunyady, P. Várnai, *Semmelweis University, Department of Physiology, Hungary, NICHD and NIH*

B463 **946.5** Withdrawn.

B464 **946.6** Differential Effects of Lipids on Cellular Activities of SH2 Domain-Containing Proteins. I. Singaram, W. Cho, *University of Illinois at Chicago*

B465 **946.7** Orthogonal Lipid Sensors Determine Differential Signaling Roles of PtdIns(3,4,5)P_3 and PtdIns(3,4)P_2. Z. Wang, S. Liu, W. Cho, *University of Illinois at Chicago*

B466 **946.8** PIP4Kγ as a Potential Target for Huntington's Disease. S. Panapakkam Giridharan, I. Al-Ramahi, J. Hasegawa, N. Safren, S. Patnaik, A. Gee, S. Titus, W. Zheng, M. Ferrer, N. Southall, S. Barmada, J. Botas, J. Marugan, L.S. Weisman, *University of Michigan, Baylor College of Medicine, National Center for Advancing Translational Sciences, NIH*

B467 **946.9** Targetting Cysteinyl Leukotriene 2 Receptor as a Therapeutic Target for Tumor Growth and Metastasis: A New Function for an Old Receptor. L.R. Teegala, E. Duah, V. Kondeti, N.Z. Al-Azzam, R. Adapala, S. Ghebreigziabher, C. Thodeti, S. Paruchuri, *University of Akron, the University of Akron and Northeast Ohio Medical School*

B468 **946.10** Single-Molecule Analysis of PKB/AKT-Lipid Interactions. N. Singh, E. Arauz, V. Aggarwal, T. Ha, J. Chen, *University of Illinois at Urbana Champaign*

B469 **946.11** Readers, Writers and Erasers of Nuclear PIP3. R.D. Blind, *Vanderbilt University School of Medicine*

947
Lipids and Inflammation

B470 **947.1** Skin-Specific Stearoyl-CoA Desaturase 1 Deficiency Protects Against Adiposity by Enhancing IL-6 Expression. S.N. Dumas, C. Guo, J.M. Ntambi, *University of Wisconsin-Madison*

B471 **947.2** High Salt Intake Induces Adipogenesis by the Modulation of MAPK/ERK1/2 Pathway in Both 3T3-L1 Adipocytes and Co-Culture with Macrophages. H. Park, J. Kim, S. Bak, M. Lee, *Sungshin Women's University, Republic of Korea*

B472 **947.3** Effects of High-Fat Diet and Age on the Blood Lipidome and Circulating Endocannabinoids of Female C57BL/6 Mice. S. Pati, S. Krishna, J.H. Lee, C. de La Serre, D. Harn, J. Wagner, N. Filipov, B. Cummings, *University of Georgia*

B473 **947.4** Alcohol and HIV Protease Inhibitor-Induced Inflammasome Activation and Hepatic Lipotoxicity. M. Hinton, W. Pandak, P. Hylemon, H. Zhou, *Virginia Commonwealth University and McGuire Veterans Affairs Medical Center*

B474 **947.5** Lipidomic Analysis of Liver Injury Caused by a ω6-PUFA-Enriched Diet and Ethanol Exposure. D. Warner, M. Miller, X. Yin, X. Wei, A. Prodhan, X. Zhang, A. Feldstein, C. McClain, I. Kirpich, *University of Louisville, University of California, San Diego and Robley Rex VAMC*

B475 **947.6** Inflammatory Generation and Signaling Actions of Conjugated Nitro-Linoleic Acid. F.J. Schopfer, D. Vitturi, L. Minarrieta, S.R. Salvatore, N. Khoo, S. Jobaggy, L. Li, S. Woodcock, R. Berman, A. Ferreira, B. Freeman, L. Villacorta, *University of Pittsburgh, Institute for Infection Immunology, Twincore, Germany, University of Michigan and University of La Republica, Uruguay*

B476 **947.7** Macrophage Cholesterol Efflux and Atherosclerosis in Psoriasis: A Role for microRNA-33. D. Karunakaran, G. Dwevidi, K. Rayner, *University of Ottawa Heart Institute, Canada*

948
Lipid Storage and Trafficking

B477 **948.1** NPC1-Mediated Cholesterol Export from Lysosomes. S.R. Pfeffer, *Stanford University*

B478 **948.2** Sterol O-Acyltransferase 1 Enhances Cholesterol Esterification via Cyclic AMP-Dependent Pathway in the Yolk Sac Membrane Endodermal Epithelial Cells. H. Lin, S. Wang, Y. Chen, H.J. Mersmann, S. Ding, *National Taiwan University, Taiwan*

B479 948.3 HDLs and LDLs in the Brain: Characterizing the Lipid Secretome of Astrocytes. A. Nguyen, *Trinity University*

B480 948.4 Sac1 Degrades Its Lipid Substrate PI4P in the ER to Maintain a Steep Electrochemical Gradient on Donor Membranes. G. Hammond, R. Wills, J. Zewe, *University of Pittsburgh*

B481 948.5 Cholesterol Hydroperoxide Trafficking: Impairment of Macrophage Cholesterol Efflux with Implications for Atherogenesis Under Oxidative Stress. W. Korytowski, K. Wawak, P. Pabisz, A.C. Chadwick, D. Sahoo, A.W. Girotti, *Jagiellonian University, Poland and Medical College of Wisconsin*

949

Membrane Structure, Function and Assembly

B482 949.1 Functional Reconstitution of the Beta Cell *Porosome*. A.R. Naik, K.T. Lewis, B.P. Jena, *Wayne State University*

B483 949.2 Biological Inspiration of Salt Exclusion Membranes in Mangroves Toward Fouling-Resistant Reverse Osmosis Membranes. A.R. Wood, K. Justus, E. Parigoris, A. Russell, P. LeDuc, *Carnegie Mellon University*

B484 949.3 A Membrane Trafficking Screen to Identify Components Involved in Clathrin-Independent Endocytosis. D. Dutta, J. Wayt, J.G. Donaldson, *National Institutes of Health*

B485 949.4 Palmitoylation Impact on the Sodium Hydrogen Exchanger Isoform 1 Function. E. Pritsch, A. Holland, A.J. Kooiker, D.E. Rastedt, R.A. Vaughan, J.D. Foster, M.A. Wallert, J.J. Provost, *University of San Diego, Bemidji State University, University of Michigan Medical Center, University of North Dakota, School of Medicine and Health Sciences*

B486 949.5 Mutation of Follicle Stimulating Hormone Receptor Putative Caveolin Binding Motif Results in Altered Signaling. J.H. Fleischer, B.D. Cohen, *Union College*

B487 949.6 Functional Characterization of a Novel Caveolin-1 Adenine 474 Deletion (c.474delA Mutation) in TGFβ Signaling and Caveolae Formation. Y. Yuan, G. Marsboom, Z. Chen, R.D. Minshall, J. Rehman, A.B. Malik, *University of Illinois at Chicago*

B488 949.7 Lipid Raft Disruption Alters Human Follicle Stimulating Hormone Receptor Signaling in a Human Granulosa Cell Line. J.G. Pradhuman, G.R. Geisel, B.D. Cohen, *Union College*

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Membrane Transport and Channels

B489 950.1 Machinery Mediating Kiss-and-Run Mechanism of Cell Secretion B.P. Jena, *Wayne State University*

B490 950.2 Type 2 Diabetes-Associated Variants Disrupt Function of SLC16A11, a Proton-Coupled Monocarboxylate Transporter, Through Two Distinct Mechanisms. E. Hoch, V. Rusu, S.L. Schreiber, J.C. Florez, S.B. Jacobs, E.S. Lander, *Broad Institute of MIT and Harvard and Massachusetts General Hospital*

B491 950.3 *HM2* From *S. cerevisiae* and *Y. lipolytica*: Comparison of Their Role in Oxidative Stress. J. Hartnett, P.N. Pierson, J. Nicaud, P.J. Trotter, *Augustana College, INRA and AgroParisTech, France*

B492 950.4 Structural and Functional Characterization of Outer Membrane Usher Activation in Uropathogenic *E. coli*. N. Omattage, Z. Deng, P. Yuan, S.J. Hultgren, *Washington University School of Medicine*

B493 950.5 In Vitro Activity of a Purified Natural Anion Channelrhodopsin. H. Li, O. Sineshchekov, G. Wu, J. Spudich, *University of Texas Medical School at Houston*

B494 950.6 Probing the Structural Basis of P-Glycoprotein Transport of μ-Opioid Receptor Agonists: Methadone and Loperamide. M.E. Gibbs, K. Ledwitch, A. Roberts, *University of Georgia*

B495 950.7 Investigation of a Mitochondrial Twin Arginine Transport Pathway in *Arabidopsis thaliana*. T.S. Weerakoon, Q. Ma, C. Dabney-Smith, *Miami University*

B496 950.8 Activation of Akt Increases Cell Surface Expression of System X_C^-. P. Versluis, A. Gibson, M. Schmidt, D. Smith, L. Chase, *Hope College*

B497 950.9 System X_C^- Regulation: Effects of Mutations on Membrane Expression and Ubiquitination Status. M. Schmidt, A. Gibson, E. Hardy, P. Versluis, S. Lang, A. Georges, L. Chase, *Hope College*

B498 950.10 Inhibition of Na,K ATPase Partial Reactions by Organic Amines. K. Stanley, P. Artigas, C. Gatto, *Illinois State University and Texas Tech University Health Sciences Center*

B499 950.11 Glucose Transporter (HXT) Homeostasis in *Saccharomyces cerevisiae*. E. Swain, *Presbyterian College*

951

Glycosyltransferases and Hydrolases

B500 951.1 Dolicholphosphate Mannosyltransferase: A Glycosyltransferase with Unity in Molecular Diversities. K. Baksi, Z. Zhang, D.K. Banerjee, *Universidad Central del Caribe, University of Puerto and University of Puerto Rico*

B501 951.2 Regiospecificity of Galactan Polymerization by Divergent GlfT2 Orthologs. P.W. Sadecki, A.M. Justen, J.S. Ho, L.L. Kiessling, *University of Wisconsin-Madison*

B502 951.3 Optimization for Transfection and Isolation of *C*-Mannosyltransferase DPY19-L1. B. Murdock, *Marshall University*

B503 951.4 Three-Dimensional Structure of Xyloglucan Xylosyltransferase 1 and Proposed Mechanism of Catalysis. A.T. Culbertson, A. Tietze, A. Smith, O. Zabotina, *Iowa State University*

B504 951.5 Investigating the Role of GlfT2 in Mycobacterial Cell Wall Assembly. L.M. Kim, A.M. Justen, L.L. Kiessling, *University of Wisconsin-Madison*

B505 951.6 Cellulase-Polymer Bioconjugates to Improve Enzyme Stability for Biofuel Production. J. Stewart, T. Wright, B. Schmitz, C. Williams, K. Makaroff, D. Konkolewicz, R.C. Page, *Miami University*

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Protein-Glycan Interactions

B506 952.1 'Real Time Imaging of Tri-Molecular Protein Interactions in Live Cells by Förster Resonance Energy Transfer (FRET) Microscopy. H. Kuo, N. Chang, *National Cheng Kung University College of Medicine, Taiwan*

B507 952.2 Electrostatic Contributions of Aromatic Residues in Protein-Carbohydrate Interactions S.A. Early, R.C. Diehl, L.L. Kiessling, *University of Wisconsin-Madison*

B508 952.3 Structural Effects of Skp1 Glycosylation. D.F. Thieker, G. Chalmers, X. Xu, M.O. Sheikh, J.N. Glushka, J.H. Prestegard, R. Woods, C.M. West, *University of Georgia*

B509 952.4 N-Glycan Composition Impacts CD16A Structure and Antibody Binding on Natural Killer Cells. A.W. Barb, K.R. Patel, J.T. Roberts, G.P. Subedi, *Iowa State University*

B510 952.5 Sulfation Pattern of Chondroitin Sulfates Regulates SHP2, the Non-Receptor Tyrosine Phosphatase. J.K. Tobacman, S. Bhattacharyya, L. Feferman, *University of Illinois at Chicago and Jesse Brown VA Medical Center*

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Glycans in Development and Disease

B511 953.1 FUT8 Promotes Breast Cancer Cell Invasiveness Through Remodeling of TGF-β Receptor Core Fucosylation. C. Tu, M. Wu, Y. Lin, R. Yang, *Institute of Biomedical Sciences and Academia Sinica, Taiwan*

B512 953.2 Glycolipid Storage and Phenotypes in a New Rat Model of Fabry Disease. J.J. Miller, K. Aoki, C.A. Murphy, C.L. Stucky, I.S. Kassem, M. Tiemeyer, N.M. Dahms, *Medical College of Wisconsin and University of Georgia*

B513 953.3 Identification of a Post-Translational Modification with Ribitol-Phosphate and Its Defect in Muscular Dystrophy: Roles of ISPD, Fukutin, and FKRP in α-Dystroglycan Glycosylation. M. Kanagawa, K. Kobayashi, M. Tajiri, H. Manya, A. Kuga, Y. Yamaguchi, Y. Wada, T. Endo, T. Toda, *Kobe University, Japan, Osaka Medical Center and Research Institute for Maternal and Child Health, Japan, Tokyo Metropolitan Geriatric Hospital and Institute of Gerontology, Japan and RIKEN Global Research Cluster, Japan*

B514 953.4 A Novel Hemolysin with Anti-Cancer and Anti-Fungal Properties Binds to Serum Glycoproteins and Cholesterol. C. Welch, N. Fan, R. Brown, M. Talaga, A. Fueri, K. Driscoll, K. Lawry, A. Vizurraga, R. Rekhi, P. Bandyopadhyay, T. Dam, *Michigan Technological University*

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Glycan Biotechnology and Drug Development

B515 954.1 Deconvolution of Glycan Occupancy Heterogeneity for Rational HIV Immunogen Design. W. Yu, P. Zhao, M. Draghi, C. Arevalo, C. Karsten, L. Wells, D. Lauffenburger, G. Alter, *Massachusetts Institute of Technology, Ragon Institute and Complex Carbohydrate Research Center*

B516 954.2 Mannose Moieties Exhibit Self-Adhesive Interactions. K.H. Perera, P.L. Chandran, *Howard University*

B517 954.3 GRP78 Is *Neither* Expressed on Er^-/PR^-/$Herr2^-$ Human Breast Cancer Cell Surface *nor* Secreted. J.E. Serrano, E.C. Romero-Nutz, N. Sanchez, A. Banerjee, K. Baksi, D.K. Banerjee, *University of Puerto Rico and Universidad Central del Caribe*

B518 954.4 Arabidopsis Plants Expressing a Fungal Pectin Methylesterase Enzyme Have Reduced Degree of Polysaccharide Methylation and Exhibit a Dwarfed Phenotype and Resistance to Stresses. L. Chambers, O. Zabotina, N. Reem, S. Abdullah, *Iowa State University*

B519 954.5 *Bifidobacterium dentium* Regulates Intestinal Mucus Production and Glycosylation. M.A. Engevik, B.K. Luk, C. Visuthranukul, J. Versalovic, *Baylor College of Medicine, Texas Children's Hospital and King Chulalongkorn Memorial Hospital, Thailand*

WEDNESDAY
ASBMB Late-Breaking Poster Sessions
SKYLINE BALLROOM

POSTER SET UP BY: 9:00 am **POSTER DISPLAY:** 9:00 am – 4:00 pm **POSTER REMOVAL:** 4:00 – 6:00 pm

Poster manning: times:

ODD BOARD NUMBERS: 12:00 – 1:15 pm EVEN BOARD NUMBERS: 1:15 – 2:30 pm

BOARD NUMBER	SESSION TITLE
LB50-LB60	Genome Dynamics: DNA Replication, Repair and Recombination
LB61-LB70	Chromatin Structure and Gene Expression
LB71-LB74	RNA: Processing, Transport, and Regulatory Mechanisms
LB75-LB107	Protein Chemistry, Synthesis and Turnover
LB108-LB112	Biomolecular Catalysis
LB113-LB132	Chemical Biology, Drug Discovery and Bioanalytical Methods

BOARD NUMBER	SESSION TITLE
LB133-LB139	Systems Biology Technologies and Applications
LB140-LB196	Signal Transduction and Cellular Regulation
LB197-LB207	Microbial Systems and Parasitology
LB208-LB223	Metabolism and Bioenergetics
LB224-LB231	Lipids and Membranes
LB232-L242	Cell and Organelle Dynamics
LB243-LB246	Glycans and Glycobiology
LB247-LB271	ASBMB Education and Professional Development

WEDNESDAY APRIL 26

LATE BREAKING

Genome Dynamics: DNA Replication, Repair and Recombination

LB50 De Novo Thymidylate Biosynthesis and Dutpase Interact in DNA Synthesis. J. Chon, J.C. Gondokusumo, M.S. Field, P.J. Stover, *Cornell University*

LB51 Lysine Acetylation of Nuclear Pif1 Regulates Its Helicase Function. O.E. Ononye, C.W. Sausen, M.W. Bochman, L. Balakrishnan, *Indiana University-Purdue University Indianapolis and Indiana University*

LB52 Chemical Cross-Linking of Doxorubicin to Synthetic Oligonucleotides by Formaldehyde. J. Medina, A. Nagesetti, A.J. McGoron, F. Leng, *Florida International University*

LB53 Base Unpairing at the Flap Junction Controls the Rate of FEN1-Catalyzed Cleavage of DNA During Replication and Repair. B. Song, M.M. Hingorani, *Wesleyan University*

LB54 Has the Duration and Temperature of Lysis Buffer Been Minimized for the Comet Assay? A.A. Alohaly, Y. Ji, M.S. Cooke, M. Karbaschi, *Florida International University*

LB55 Outer Membrane Vesicles from Clinical Strains of Escherichia coli can Cause Megalocytosis and DNA Damage in HeLa Cells. Y. Morales-Lozada, R. Gómez-Moreno, A. Baerga-Ortiz, *University of Puerto Rico, Rio Piedras Campus, University of Puerto Rico and Medical Science Campus*

LB56 Regulation of the Functional Properties of Xeroderma Pigmentosum Complementation Group A (XPA) Protein Through Lysine Acetylation. C. Njeri, J. Kaur, J. Turchi, L. Balakrishnan, *Indiana University-Purdue University Indianapolis and Indiana University School of Medicine*

LB57 A SUMO-Ubiquitin Mediated Proteasome Pathway in Repair of DNA Damage Induced by Topoisomerase II Inhibitors. Y. Sun, *University of Illinois at Chicago*

LB58 NHEJ and BER Concurrently Repair Oxidative DNA Damage via Initiation of APE1 in Rat Cortical Neurons. J-L. Yang, Y-P. Chen, S-F. Sun, S-D. Chen, *Kaohsiung Chang Gung Memorial Hospital, Taiwan*

LB59 A Humanized Single Chain Fragment Variable Constructed to Use in Breast Cancer Immunotherapy. E.O. Mahgoub, *Qatar University, Qatar*

LB60 Cross-Tissue Telomere Length Measurement to Determine Auxiliary Marker of Brain Telomere Length in Neurosurgery Patients. S. Lussier, P. Braun, J. Potash, G. Shinozaki, H. Stevens, *University of Iowa*

LATE BREAKING

Chromatin Structure and Gene Expression

LB61 Hyperinsulinemia Induced Changes in Chromatin Acetylation and Gene Expression in Triple Negative Breast Cancer. P. Senapati, D.K. Ann, V. Seewaldt, D.E. Schones, *Beckman Research Institute at City of Hope*

LB62 Identification of Misregulated Histone Post Translational Modifications in Melanoma. L.E. Davis, S.D. Byrum, S.G. Mackintosh, S. Shalin, A.J. Tackett, *University of Arkansas for Medical Sciences*

LB63 Role of Acyl-CoA Short Chain Synthetase 2 and Acetyl-CoA in Regulation of Chromatin Modifications and Gene Expression. A.J. Lindahl, J.R. Moffett, J.K S. Krishnan, A. Appu, N.V. Puthillathu, K. Krautkramer, J.A. Dowell, A.M A. Namboodiri, J.M. Denu, *University of Wisconsin-Madison and Uniformed Services University of the Health Sciences*

LB64 Investigating the Role of Arginine Methylation on Serine Phosphorylation in Histone H3. A.P. Mendiola, D. Fuentes, M. Mendoza, C. Zurita-Lopez, *California State University Los Angeles and University of Pennsylvania*

LB65 The Roles of Flanking DNA and Transcriptional Activators in Regulating SAGA-Mediated Nucleosome Acetylation. S.J. Olson, C. Mittal, M.A. Shogren-Knaak, *Iowa State University and Pennsylvania State University*

LB66 Expression and Activity of the BioH Esterase of Biotin Synthesis Is Independent of Genome Context. X. Cao, L. Zhu, Z. Hu, J. Cronan, *University of Illinois Urbana Champaign and University of Illinois*

LB67 Mitronic tsmiR miR6855 Biosynthesis Regulation by Oxidative Stress in the Basal-Like Breast Cancer Cells. M. Ellison, S. Misra, G. Chaudhuri, *Meharry Medical College*

LB68 Allostery in Nuclear Hormone Receptor Transactivation. E.J. Fernandez, *University of Tennessee*

LB69 Intron 5 of RUNX1 Gene Harbors a Putative Promoter Region. S. Gutierrez, M. Hinojosa, N. Schnake, M. Martinez, *Universidad de Concepcion, Chile*

LB70 Characterization of Gene Expression of the E. coli abg Region, Which Encodes Proteins Involved in Folic Acid Catabolism. N. Patel , L. Pitstick, J. Green, *Midwestern University*

LATE BREAKING

RNA: Processing, Transport, and Regulatory Mechanisms

LB71 Investigating the Role of the DYW Deaminase in RNA Processing. J.A. Aldana-Mendoza, M.I. Hayes, *California State University, Los Angeles*

LB72 MicroRNA Profile of Excised Cutaneous Squamous Cell Carcinoma Tissues Comparative to Adjacent Normal Tissue. C.S. Pulford, E.M. Loomis, M.R. Montgomery, C.K. Uppalapati, A.S. Pascual, E.E. Hull, K.J. Leyva, *Midwestern University*

LB73 Micro-RNA 203 Regulates Myometrial Smooth Muscle Cell Expression of the Transient Receptor Vanilloid 4 Channel. L. Ying, E.A. Barnes, S. Rodriguez, C.M. Alvira, D.N. Cornfield, *Stanford University*

LB74 Reversibly Constraining the Human U1 snRNP and the Spliceosome to a Pre-mRNA via an Engineered Site-Specific Disulfide Bond. P. McCarthy, E. Garside, A. MacMillan, D. Pomeranz Krummel, *Brandeis University, University of Alberta, Canada and Emory University*

LATE BREAKING

Protein Chemistry, Synthesis and Turnover

LB75 Evidence for Direct Interactions Between RNA Polymerase and Ribosomes. G.M. Blaha, H. Fan, A.B. Conn, S. Diggs, J. Hahm, P.B. Williams, Y. Wang, *University of California, Riverside*

LB76 Purification and Subsequent Binding Assay of B-Cell Activating Factor's Receptor (BAFF-R) to an Oligonucleotide Aptamer (BAFF-R1). C.F. Inman, *Sonoma State University*

LB77 Discovery of a Cell-Penetrating Peptide via Heparin-Binding from Pereskia bleo. S. Loo, A. Kam, J.P. Tam, *Nanyang Techonological University, Singapore*

LB78 Studies on the Interaction of Human Phospholipid Scramblase 1 with C-Terminal Domain of Topoisomerase Iiα. U. Sivagnanam, S.N. Gummadi, *Indian Institute of Technology Madras, India*

LB79 Withdrawn.

LB80 Altering Oligomerization of EphA2 via Mutations in the Intracellular Domain. R.W. Lingerak, X. Shi, D.M. Bowman, V.M. Hapiak, J. Zheng, M. Buck, B. Wang, A. Smith, *The University of Akron, Case Western Reserve University/Rammelkamp Center of Metrohealth Medical Center and Case Western Reserve University*

LB81 Dihydroxyacetone Phosphate (DHAP) Induced Type-I Collagen Glycation and the Formation of Cross-Linked Advanced Glycation End-Products (AGEs) in Vitro. W. Liu, G.W. Dombi, J.A. Dain, *University or Rhode Island*

LB82 Human Peptidylarginine Deiminase Types 2 and 4 Target Glycine-Containing Motifs for Citrullination: An in Silico Study. J.S. Olson, D. Meyer, J. Grant, *The University of Wisconsin at Stout*

LB83 ngPalmPISC: A Sensitive Method for Proteome-Wide Characterization of S-Acylation. B. Zhou, Y. Yan, M.R. Freeman, W. Yang, *Cedars-Sinai Medical Center*

LB84 Assessing Cysteine Residue Thiol Status in t-Darpp, a Protein Involved in Chemoresistance. J.A. Aldana-Mendoza, P. Farias, J.A. Momand, *California State University, Los Angeles*

LB85 Activation and Binding Mechanisms of the Tandem Collagen-Binding Domain of ColG Collagenase. R. Bauer, K. Janowska, K. Tanaka, O. Matsushita, J. Sakon, *University of Arkansas, Nippi Research Inc., Japan and Okayama University, Japan*

LB86 Nuclear Transport of Fungal Transcription Factors Mediated by Importin-α and Specificities of This Interaction. N.E. Bernardes, D. Litvac, M.C. Bertolini, N. Panté, M.R. de Matos Fontes, *São Paulo State University, Brazil and University of British Columbia, Canada*

LB87 The Folding Mechanism of an Artificial Knotted Protein Characterized by Optical Tweezers. A. Bustamante, M. Rivera, J. Molina, M. Baez, *Facultad de Ciencias Químicas y Farmacéuticas and Universidad de Chile, Chile*

LB88 Implications of Neuroglobin Structure and Function in Human Brain Degenerative Disorders. J.L. Demski, R. Beekman, K. Ellcey, B. Guenzel, J. Hollander, A. Jodarski, M. Johnson, D. Moore, *Laconia High School*

LB89 Initial Crystallography of a Phage DNA Kinase. A. Gnann, P. Weigele, D. Dowling, *University of Massachusetts Boston and New England Biolabs*

LB90 Characterization of a Putative Monooxygenase Involved in Climate Regulation from Hyphomicrobium sulfonivorans. J.M. Gordon, M.B. Culpepper, M.A. Culpepper, *Appalachian State University*

LB91 Diversity and Evolutionary Analysis of Iron-Containing (Type-III) Alcohol Dehydrogenases in the Three Domains of Life. A. Julián-Sánchez, C. Gaona-López, H. Riveros-Rosas, *Fac. Medicina, Universidad Nacional Autónoma de México, Mexico and Colegio Benedictino, Mexico*

LB92 NMR Mapping of the Allosteric Network in the Oncogenic Protein Kinase A Chimera Dnajb1-PRKACA. A.N. Karamafrooz, G.N. Li, S.M. Simon, S.S. Taylor, G.N. Veglia, *University of Minnesota, Rockefeller University, and University of California at San Diego*

LB93 Mechanical Untying of the Smallest Knotted Protein from Different Pulling Axis Using Optical Tweezers. M. Rivera, A. Bustamante, Y. Hao, R.A. Maillard, M. Baez, *Universidad de Chile, Chile and Georgetown University*

LB94 Bio-Incorporation of Amino Acid Analogs into Target Proteins. E.E. Rush, *Tennessee Technological University*

LB95 Multi-Domain Dynamic Studies of Calcium Bound Polycystic Kidney Disease-Like and Collagen Binding Domains. C.E. Ruth, J. Sakon, *University of Arkansas*

LB96 Investigating the Catalytic Molecular Details of Malonyl-Thioester Decarboxylating Enzymes. L.M. Stunkard, J.M. Lohman, *Purdue University*

LB97 The Structure and Function of VE-Cadherin in Endothelial Cells. A.L. Wary, S. Sreedhar, *York Community Hight School*

LB98 An Integrated Approach to Investigate Toxic Oligomers of Amyloidogenic Proteins and Potential Inhibitors: Application to the Effects of Humanin on Aβ Oligomers. M. Gobbi, M. Romeo, M. Stravalaci, M. Beeg, A. Cagnotto, F. Fiordaliso, M. Salmona, L. Diomede, *IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Italy*

LB99 Insight into Parkinson's Disease from Yeasts: Evidence for Sumoylation as a Protective Factor Against Alpha-Synuclein Toxicity. P. Jones, R. Thomas, Y. Ganev, A. Roman, M. Marshall, G. Lipkin, E. Ong, S. DebBurman, *Lake Forest College*

LB100 Understanding the Nature of Toxicity of Parkinson's Disease Associated Alpha-Synuclein Familial Mutants H50Q, G51D, and A53E with Yeast Models. E.N. Ong, M. Tembo, C. Mwale, M. Marshall, C. Alvarado, M. Buabeng, N. Kukulka , S. DebBurman, *Lake Forest College*

LB101 FTDP-17 Mutants S320F and S352L Have Subtle Differential Effects on 4R Tau Isoform Aggregation in Vitro. M. Yenjerla, C.T. Gamblin, *University of Kansas*

LB102 Identification of an Arabidopsis WD-Repeat Protein That Activates the Deubiquitinase UBP3 and Interacts with Two E3 Ubiquitin Ligases. A.T. Baskerville, J. Donahue, G. Gillaspy, L. Erickson, *Salisbury University and Virginia Polytechnic Institute and State University*

LB103 Rotavirus NSP1 as a Phosphorylated Substrate Adaptor of Hijacked Cullin-RING Ligases. K.A. Davis, M. Morelli, J.T. Patton, *University of Maryland and National Institutes of Health*

LB104 Modification of CUL3 by Related to Ubiquitin (RUB) Is Partially Regulated by the Phytochrome B Pathway in Arabidopsis thaliana. A. Orellana, M. Christians, *Grand Valley State University*

LB105 Redundancy Between Proteasome Chaperones Nas2 and Hsm3 During Proteasome Assembly. A. Suppahia, R.S. Chingakham, A. 'De La Mota Peynado, J. Roelofs, *Kansas State University*

LB106 Proprotein Convertase Selectivity in the Activation of the Human Papilloma Virus. G. Izaguirre, *University of Illinois at Chicago*

LB107 Characterizing Small Molecule Inhibitors of the LINE1 Endonuclease. M. Smith, S. Bertrand, Q. Bolden, B. Russell, C. DeFreece, *Xavier University of Louisiana*

LATE BREAKING

Biomolecular Catalysis

LB108 Molecular Mechanism of the Functions and Allosteric Regulations of the αβ and αγ Heterodimers of Human NAD-Dependent Isocitrate Dehydrogenase. J. Ding, T. Ma, Y. Liu, Y. Peng, W. Huang, *Shanghai Institute of Biochemistry and Cell Biology, People's Republic of China, and School of Life Sciences, Shanghai University, People's Republic of China*

LB109 Streptomyces wadayamensis MppP: A Novel PLP-Dependent L-Arginine Hydroxylase in L-Enduracididine Biosynthesis. L. Han, N. Silvaggi, *University of Wisconsin-Milwaukee*

LB110 Elucidating the Molecular Details of Catalysis for Type III Polyketide Synthases Using Near Natural Substrate/intermediate Analogs. L.R. Richards, L. Stunkard, A. Benjamin, B.P. Manning, J. Lohman, *Purdue University*

LB111 The Effect of Substrate Presentation and Activation on Neuraminidase NEU2 Specificity. R.J. Woods, O.C. Grant, S. Makeneni, B.L. Foley, *University of Georgia*

LB112 Preliminary Investigation by NMR of the Electron Transfer Complex Between the Vitamin D Metabolizing Cytochrome P450 24A1 and Adrenodoxin. D. Estrada, Y. Tu, *University at Buffalo*

LATE BREAKING

Chemical Biology, Drug Discovery and Bioanalytical Methods

LBI13 Cellular Uptake of a Cystine-Knot Peptide and Modulation of Its Intracellular Trafficking. X. Gao, K. Stanger, H. Kaluarachchi, T. Maurer, P. Ciepla, C. Chalouni, Y. Franke , R.N. Hannoush, *Genentech*

LBI14 Investigation of the Mechanism of Cytotoxic Natural Product PateamineA Analog. S S. Kommaraju, W-K. Low, D. Romo, *St. John's University and Texas A&M University*

LBI15 Lybatide: Naturally Occurring Disulfide-Stapled Helical Peptides from Lycium barbarum. W L. Tan, K.H. Wong, J.P. Tam, *Nanyang Technological University, Singapore*

LBI16 A Multifunctional Platform for Rapid Detection and Post-Detection Analysis of Circulating Tumor Cells. Y. Yang, R. Datar, R. Cote, S. Daunert, *University of Miami*

LBI17 Antioxidant Effects of Agastache mexicana Extracts: An in Vitro Approach. E.R. Esquivel-Gutiérrez, E. Coria-Orozco, R. Torres-Martínez, A. Hernández-García, P. Ríos-Chávez, S. Manzo-Ávalos, A. Saavedra-Molina, R. Salgado-Garciglia, *Centro de Investigaciones Biológicas del Noroeste S.C., Mexico and Universidad Michoacana de San Nicolás de Hidalgo, Mexico*

LBI18 Improving Therapy for Refractory Mantle Cell Lymphoma Using Small Molecule Inhibitors Vorinostat and Palbociclib to Target Histone Deacetylase and Cyclin Dependent Kinase 4/6. N. Hatch, N. Chaturvedi, M. Kling, S. Joshi, *University of Nebraska Medical Center at Omaha*

LBI19 Inhibitory Effects of Single Component Isolated in Natural Product Complex (No-ap) on the AT1 Receptor Expression and Oxidative Stress in Angiotensin II-Stimulated Cells. E Y. Hong, G.U. Hong, Y H. Shin, Y-I. Kwon, J Y. Ro, *Hyunsungvital Co. Ltd., Life & Science Research Center, Republic of Korea, and Daedeok Valley Campus, Republic of Korea*

LBI20 Inhibition of Osteoarthritis-Related Molecules by Single Component Identified from Natural Product Complex (Ryupunghwan) in IL-1β-Stimulated SW1353 Cells. G U. Hong, E Y. Hong, Y.H. Shin, Y-I. Kwon, J.Y. Ro, *Hyunsungvital Co. Ltd., Life & Science Research Center, Republic of Korea, and Daedeok Valley Campus, Republic of Korea*

LBI21 Profiling and Authentication of Herbal Products. J. Huang, K.H. Wong, J.P. Tam, *Nanyang Technological University, Singapore*

LBI22 Effects of the Vascular Disrupting Agent OXi8006 on Activated Endothelial Cell Signaling and Tumor Growth Delay in a Breast Cancer Mouse Model Treated with the Corresponding Phosphate Prodrug Salt OXi8007. S.O. Odutola, T.E. Strecker, E.A. Taylor, J. Schwartze, J. Gerberich, M.T. MacDonough, D.J. Chaplin, L. Liu, R.P. Mason, K.G. Pinney, M.L. Trawick, *Baylor University, University of Texas Southwestern Medical Center and Mateon Therapeutics Inc.*

LBI23 Serum Protein S100B, a Biomarker for Head Injury or Skeletal Muscle Damage?. A. Harris, S. Keuler, A. Kerska, M. Rogatzki, *University of Wisconsin Platteville*

LBI24 Bioorthogonal Protein Conjugation: Application for the Development of a Highly Sensitive Bioluminescent Immunoassay for the Detection of Interferon-γ. A. Moutsiopoulou, E. Hunt, D. Broyles, C.A. Pereira, K. Woodward, E. Dikici, A. Kaifer, S. Daunert, S. Deo, *University of Miami, and Universidade Federal de Goias, Brazil*

LBI25 Employing Surface-Displayed Proteins on Bacillus megabacterium Spores to Detect Environmental Pollutants. D.T. Wynn, R. Mittal, L. Knecht, S. Deo, S. Daunert, *University of Miami*

LBI26 Using Small Angle X-Ray Scattering to Determine the Role of Poly-Cystic Kidney Disease-Like Domains in Clostridium histolyticum. P.C. Caviness, T. Koide, O. Matsushita, J. Sakon, *University of Arkansas, Waseda University, Japan and Okayama University Graduate School of Medicine, Japan*

LBI27 Differential Sedimentation of Linear Versus Circular DNAs Using Divalent Metal Cations. C.J. England, T. Grey, K. Lewis, *Texas State University*

LBI28 Determination of Total Oxytocin in Human Serum by Traditional LCMS. A. Franke, A. Menden, X. Li, *University of Hawaii*

LBI29 Absolute Quantitation of mRNA and DNA Copy Number in Different Nutritional States: A Methodological Approach in Primer Design, mRNA Copy Number and Discrimination Between Highly Homologous Gene Families. P. Rote, L.A. Shirota, K. Sharma, J.P. Hardwick, *Northeast Ohio Medical University (NEOMED), University of Marilia Medical School (UNIMAR), Brazil and Case Western University School of Medicine*

LBI30 Strategies for Point-of-Care Detection of Nucleic Acid Targets. D. Broyles, S.K. Deo, *University of Miami*

LBI31 Identification of a High-Risk Cardiovascular Disease Population: Combining Computational Modeling and Bioluminescence Imaging. T. Head, P. Dau, V. Andreev, S. Deo, P. Daftarian, P. Goldschmidt-Clermont, S. Daunert, *University of Miami Miller School of Medicine, Arbor Research Collaborative for Health and NGM Biopharmaceuticals Inc.*

LBI32 Role of Albumin on the Cellular Uptake and Selective Autophagy of Nanodiamonds. E.N.R. Lawrence, H-C. Su, K-K. Liu, J-I. Chao, *National Chiao Tung University, Taiwan*

LATE BREAKING

Systems Biology Technologies and Applications

LBI33 Integrated Sigma Dynamics Quantum Energy Therapy Presented by Mathematical Function and Matrices in Immune Stimulation. G.P. Einstein, O.L. Tulp, M. Idle, C.M. Konyk, *University of Science, Arts and Technology, Montserrat, and Einstein Medical Institute*

LBI34 Linking Nutrition and Molecular Biology Using Data Mining and Graph Theory. R. Linchangco, J.J. Jay, C. Brouwer, *University of North Carolina at Charlotte*

LBI35 Association Between Women with Endometriosis and Human Leukocyte Antigen-C Genotyping. Y-C. Chou, C-R. Tzeng, *Taipei Medical University, Taiwan and Taipei Medical University Hospital, Taiwan*

LBI36 Altered Brain Hemoglobin Gene Expression in the Frontal Cortex of Patients with Alzheimer's and Acquired Creutzfeldt-Jakob's Disease. S. Vanni, M. Zattoni, F. Moda, F. Tagliavini, S. Haik, J-P. Deslys, G. Zanusso, J.W. Ironside, I. Ferrer, G. Kovacs, G. Legname, *Scuola Internazionale Superiore di Studi Avanzati, Italy, IRCCS Foundation Carlo Besta Neurological Institute, Italy, Sorbonne Universités, France, Commissariat à l'énergie atomique et aux énergies alternative, France, University of Verona, Italy, National CJD Research & Surveillance Unit, United Kingdom, Bellvitge University Hospital, Institut d'Investigació Biomèdica de Bellvigte, Spain and Medical University of Vienna, Austria*

LBI37 The Pseudophosphatase MK-STYXs Effects on Dynein. A. Whitaker, L. Hall-Mozingo, S. Hinton, *College of William & Mary*

LBI38 The Sweat Mediator Lipidome Is Affected by Stimulation Technique but Not Sampling Location. K. Agrawal, J.D. Waller, M.V. La, E.L. Bonnel, J.W. Newman, *University of California-Davis, National Institutes of Health West Coast Metabolomics Center and U.S. Department of Agriculture-Agricultural Research Service-Western Human Nutrition Research Center*

LBI39 Using Metabolite Profiling to Understand the Consequences of Iron-Source Choices by Staphylococcus aureus. J. DuBois, A. Celis, *Montana State University*

LATE BREAKING

Signal Transduction and Cellular Regulation

LB140 Activation of the D2 Dopamine Receptor Hampers the Protective Effect of the A_{2A} Adenosine Receptor on TDP-43 Mislocalization. Y. Chern, C-Y. Lai, Y-J. Liu, H-L. Lai, *IBMS and Academia Sinica, Taiwan*

LB141 Investigating Methylated Arginine Residues in PGC-1α. J.M. Cuala, I.M. Osuji, C. Zurita-Lopez, *California State University Los Angeles*

LB142 Effect of Outer Hair Cell-Specific STAT3 Deletion in the Noise-Induced Cellular Stress Response. S. Dziennis, T.L. Wilson, S.L. Foster, A.L. Nuttall, *OHSU*

LB143 Role of Serotonin Signaling in the Remodeling of Thioridazine-Induced Craniofacial Deformities in Xenopus laevis Pre-Metamorphic Tadpoles. J.S. Familia, K. Pinet, K.A. McLaughlin, *Tufts University*

LB144 AKT2 Is the Predominant Akt Isoform Expressed in Human Skeletal Muscle. A.V. Geddis, M.N. Abdalla, L.A. Leandry , H.L. McClung, S.M. Pasiakos, R.W. Matheny Jr., *USARIEM*

LB145 Arl4A Interacts with Robo1 to Promote Cell Migration via Up-Regulating Cdc42 Activation. F-J.S. Lee, T-S. Chiang, C-H. Chen, M-C. Tsai, L-T. Jang, *National Taiwan University, Taiwan*

LB146 NFκB Activation and Cytokine Output in LPS-Treated RAW 264.7 Macrophages. M. Reynoso, A. Geddis, A. Mitrophanov, R.W. Matheny Jr., S. Hobbs, *U.S. Army Research Institute of Environmental Medicine, DoD Biotechnology High Performance Computing Software Applications Institute, Telemedicine and Advanced Technology Research Center and U.S. Army Medical Research and Materiel Command*

LB147 CD95-Ligand from Myeloid Cells Contributes to Abdominal Aortic Aneurysm Formation. W. 'Xiong, T. Meisinger, M. Fitzgerald, R. Batra, B T. Baxter, *University of Nebraska Medical Center*

LB148 Dissecting the Dual Activity of Cellular Retinoic Acid Binding Protein 2 (CRABP2). A. Vreeland, D. Driscoll, N. Noy, *Cleveland Clinic Foundation/Lerner Research Institute*

LB149 AKT Signaling Is Essential for Functional and Structural Integrity of the Heart. S. Goedecke, A. Heinen, F. Moeller, R. Deenen, K. Koehrer, A. Goedecke, *UKD Heinrich-Heine-University, Germany*

LB150 Probing the Structural and Biochemical Basis for the Development of Cushing's Syndrome Caused by a Somatic Mutant of Protein Kinase A. C. Walker, A. Karamafrooz, Y. Wang, S. Taylor, G. Veglia, *University of Minnesota-Twin Cities and University of California at San Diego*

LB151 EphA2 Organization and Dynamics in Cancer Cells. D.M. Bowman, X. Shi, V. Hapiak, J. Zheng, J. Muller-Greven, R. Lingerak, M. Buck, B-C. Wang, A. Smith, *University of Akron, MetroHealth Medical Center and Case Western Reserve University*

LB152 The Bacterial Chloride/Proton Antiporter: A Molecular Machine. D. Shannon, J. Glass, B. Hall, K. Peters, J. Hardesty, *Moeller*

LB153 Carbon Monoxide as a Mediator of Ca^{2+} SIgnaling for Insulin Secretion in Pancreatic Islets. F.U. Rahman, U-H. Kim, *Chonbuk National University Medical School, Republic of Korea*

LB154 Ecdysoneless, a Novel Regulator of Calcium Influx. A. Sarkar, *University of Nebraska Medical Center*

LB155 Modulations of Calcium in Adipose Tissue by TRPC1: A Key Player in Obesity. A. Schaar, D. Krout, J.N. Roemmich, K.J. Claycombe-Larson, B.B. Singh, *University of North Dakota, USDA-ARS and Grand Forks Human Nutrition Research Center*

LB156 Inositol Hexakisphosphate Increases the Transition Constant and the Affinity of Horse Aquomethemoglobin for 5,5′-Dithiobis(2-Nitrobenzoate). O.E. Omotosho, S.N. Chinedu, *Covenant University, Nigeria*

LB157 Heterogeneity Pattern of Apoptosis Mediators in Cervical Carcinoma Cells. I. García-Aguiar, O. Del Moral-Hernández, M. Martínez-Castillo, R. Bonilla-Moreno, N. Villegas-Sepúlveda, *Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico*

LB158 Regulation of MAP Kinase Signaling by c-Myc Mediates the Apoptotic Response to Vinca Alkaloids. R.A. Gristock, C. T K. Wales, A.T. Jacobs, *University of Hawaii at Hilo*

LB159 C-Terminal 15kDa Fragment from β-Actin Causes Apoptotic Cell Death. N. Ito, S. Tone, M. Tanaka, *Tokyo Denki University, Japan*

LB160 Downregulation of X-Linked Inhibitor of Apoptosis Protein by "7-Benzylidenenaltrexone Maleate" Sensitizes Pancreatic Cancer Cells to TRAIL-Induced Apoptosis. S-Y. Kim, S. Park, S. Yoo, J K. Rho, E S. Jun, S. Chang, K.K. Kim, S.C. Kim, I. Kim, *ASAN Medical Center, Republic of Korea, University of Ulsan College of Medicine, Republic of Korea, and University of Ulsan College of Medicine, Republic of Korea*

LB161 Treatment Effects of Vorinostat and Letrozole Combination on Breast Cancer Cell Survival and Peripheral Blood Mononuclear Cell Differentiation. U. Natarajan, S. Samuel, R. 'Vijiyaraghavan, A. Rathinavelu, *VRR Institute of Biomedical Science, India, VRR Insttitue of Biomedical Sceince, India and Nova Southeastern University*

LB162 Paspalum scrobiculatum Polyphenol Rich Extracts Inhibit Human Cervical Cancer Cell Proliferation and Induce Apoptosis In Vitro. S. Ramasamy, K. 'Anupam, C.V. 'Ratnavathi, D. 'Karunagaran, T.S. 'Chandra, *Indian Institute of Technology-Madras, India and Indian Institute of Millets Research, India*

LB163 Analysis of the Expression of E6^E7, a Short Splicing Variant of HPV-16-E6 in the HPV Negative Cervical Carcinoma Cells C33-A. C.E. Vaisman, R. Bonilla-Moreno, N. Villegas-Sepúlveda, *Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico*

LB164 Role of Primary Cilia in Cell Migration. J. Ganesh, F. Miskevich, *University of Michigan, Flint*

LB165 Analysis of Cell Spreading as a Function of Integrin Inhibition. P. Soneral, H. Zipoy, K. Lunacek, *Bethel University*

LB166 Suppressor of IKK Epsilon (SIKE) Acts as a Bridge Between Innate Immune Signalling Pathway and Cytoskeletal Rearrangements. K.A. Wittenberg, F.A. Slykas, H.A. Sonnenschein, J.K. Bell, *University of San Diego*

LB167 Signaling Pathways Implicated in Butyrate-Arrested Vascular Smooth Muscle Cell Proliferation. O.P. Mathew, K. Ranganna, C. Selvam, Z. Yousefipour, *Texas Southern University*

LB168 Mangosteen Extract as Agent for Inhibiting Breast and Lung Cancer Cell Growth. A.H. Bahannan, T. Johnson, E. Myles, *Tennesse State University*

LB169 BET Inhibition Suppresses Gastric Cancer Cell Proliferation by Inducing Cell Senescence. X. Dong, *University of Illinois at Urbana-Champaign*

LB170 Prolyl Isomerase Pin1 Regulates the Stability, Transcriptional Activity and Oncogenic Potential of Brd4. X. Hu, *University of Illinois at Urbana–Champaign*

LB171 Characterization of Human SH2 Domain-Containing Protein 4A(SH2D4A) in HeLa Cells. L. Tamborlin, K.D. Pereira, L. Meneguello, A.R.G. de Proença, A.D. Luchessi, *University of Campinas, Brazil and São Paulo State University, Brazil*

LB172 Characterizing the Transcriptional Regulation of Importin α1 Expression in Non-Small Cell Lung Cancer. C-J. Yu, Y-Y. Cheng, H-P. Feng, P-Y. Li, C-L. Wang, *Chang Gung Memorial Hospital, Linkou, Taiwan and Chang Gung University, Taiwan*

LB173 LPIN1 Promotes Epithelial Cell Transformation and Mammary Tumourigenesis via Enhancing Insulin Receptor Substrate 1 Stability. H S. Choi, *Chosun University, Republic of Korea*

LB174 Breast Tumor Cell-Derived FGF-5 Induces MEKK1-Dependent Chemokine Expression in Mammary Fibroblasts: Implications for Tumor Microenvironment. B.D. Cuevas, *Loyola University Chicago*

LB175 Synthesis and Anti-Cancer Activity of Cysteine-Deleted Tachyplesin Analogs. A. Eitel, N. Hendrickson, D. Heyl-Clegg, H. Evans, J. Guthrie, *Eastern Michigan University*

LB176 Targeting Potassium Channels in Cancer: zcx=1 Strategy for Therapeutic Intervention. S. Gentile, *Loyola University Chicago*

LB177 Inhibition of Human Prostate Cancer Growth by Mesenchymal Stem Cells Delivering MiR-16. E. Jones, P. Mazirka, M.A. McNurlan, P. Brink, G. Caso, *Rutgers, Robert Wood Johnson Medical School and Stony Brook University Medical Center*

LB178 Mir-16 and Mir-34a Suppress Growth of a Variety of Human Cancer Cells. E. Jones, P. Mazirka, M.A. McNurlan, P. Brink, G. Caso, *Rutgers, Robert Wood Johnson Medical School and Stony Brook University Medical Center*

LB179 Withaferin A Suppresses and Inhibits Hepatocellular Carcinoma-Cell Proliferation and Tumor Burden via Activation of ERK1/2-ELK1-RSK-DR5 Axis. P. Kuppusamy, A. Nagalingam, C. Drachenberg, D. Sharma, N.K. Saxena, *University of Maryland School of Medicine and Johns Hopkins University School of Medicine*

LB180 Haspin Is a Survival Factor for H3T3 Phosphorylation and Survivin Recruitment in Malignancy of Colorectal Cancer. T-C. Lee, Y-H. Chang, T-W. Yu, T-K. Shen, M-C. Tsai, C-C. Huang, T-W. Yang, C-C. Lin, G-Y. Chiou, Y-J. Jong, J-I. Chao, *National Chiao Tung University, Taiwan and Chung Shan Medical University Hospital, Taiwan*

LB181 A Novel Synthetic Compound Overcomes Drug Resistance on EGFR (T790M) and Cancer Stemness in Human Non-Small Cell Lung Cancer. P Y. Pan, C-J. Chang, K-K. Liu, Y-C. Chan, Y-T. Chen, J-I. Chao, *National Chiao Tung University, Taiwan*

LB182 Glioma Cell Proliferation Promoted by AK4 Regulated mTORC1 Pathway Activation. J. Silva, N. Lanning, *California State University Los Angeles*

LB183 Characterization of a Patient Fibroblast Cell Line with Infantile Neuronal Ceroid Lipofuscinosis Disorder. B. Balouch, Q. Chu-LaGraff, *Union College*

LB184 Subpopulations of Neurotensin Neurons in the Lateral Hypothalamic Area Respond to Distinct Cues and Contribute to Energy Balance by Discrete Mechanisms and Projections. J.A. Brown, A. Wright, R. Bugescu, H.L. Woodworth, G. Kurt, G.M. Leinninger, *Michigan State University - Dept of Physiology*

LB185 Influence of Farnesene on Male Aggression in Rodents: A Behavioral and Mapping Study. A. Ganga, I. Davison, Y. Gao, *Valley High School and Boston University*

LB186 The Cytoprotective Effect of Chlorogenic Acid Against Oxidative Stress-Induced Cell Damage via the ERK and PI3K/Akt-Mediated Nrf2/HO-1 Signaling Pathways. M. Jang, G-H. Kim, *Duksung Women's University, Republic of Korea*

LB187 Assessment of an Immortalized Rat Dopaminergic Neuronal Cell Line as a Potential Model for Studying Dopamine Transporter Function. G.H. Larson, D.J. Stanislowski, J.D. Foster, *University of North Dakota School of Medicine & Health Sciences*

LB188 The Neuroinflammatory Role of Fyn-PKC-δ Signaling Pathway in the Mouse Kainate Model of Epileptogenesis. S. Sharma, S. Puttachary, M. Putra, S. Sarkar, A.G. Kanthasamy, T. Thippeswamy, *Iowa State University*

LB189 Subpopulations of Dopamine Transporters Show Enrichment in Phosphorylation or Palmitoylation. M.H. Storandt, M.J. Hovde, D.J. Stanislowski, R.A. Vaughan, J.D. Foster, *University of North Dakota School of Medicine & Health Sciences*

LB190 Antioxidant Activity and Protective Effect on PC12 Against H_2O_2 of Epimedium koreanum. S. You, M. Jang, G-H. Kim, *Duksung Women's University, Republic of Korea*

LB191 Maintenance of Antibody Avidity in Alaska Native Adolescents Receiving Quadrivalent Human Papillomavirus (HPV) Vaccine. A.M. Brady, G. Panicker, E. Meites, L. Bulkow, D. Hurlburt, L. Markowitz, E. Unger, M. Bruce, *Centers for Disease Control and Prevention*

LB192 The Role of Glucose-6-Phosphate Dehydrogenase of Inflammasome Activation. D.T-S. Chiu, W. Yen, Y-H. Wu, *Department of Medical Biotechnology and Laboratory Sciences, Chang Gung University, Taiwan, Department of Pediatric Hematology/Oncology and Linkou Chang Gung Memorial Hospital, Taiwan*

LB193 NLRP3 Inflammasome Is Critical for Lipopolysaccharide-Induced Depressive-Like Behaviors. E. Lee, S-A. Jeon, I. Hwang, J. Yu, *Department of Microbiology and Immunology, Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Republic of Korea*

LB194 Modulation of Inflammasome Signaling by Advanced Glycation End Products (AGEs). S. Son, I. Hwang, J-W. Yu, *Yonsei University College of Medicine, Republic of Korea, Brain Korea 21 PLUS Project for Medical Science, and Republic of Korea*

LB195 Pseudomonas aeruginosa Attenuates Inflammasome Activation via Quorum Sensing-Dependent Mechanism. J. Yang, K-M. Lee, S. Park, S-S. Yoon, J-W. Yu, *Department of Microbiology and Immunology, Institute for Immunology and Immunological Diseases, Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Republic of Korea*

LB196 Generating a Novel Cell Line with a Codon Optimized LINE1 Element at a Single Locus. B. Russell, M. Morales, C. DeFreece, *Xavier University of Louisiana and Tulane University*

LATE BREAKING

Microbial Systems and Parasitology

LB197 Identification of Amidase Negative Strains of bacillus thuringiensis. S.Z. Filfilan, T. Johnson, A. Ejiofor , *Tennessee State University*

LB198 Elucidating Peptide Pheromone Signaling in Pathogen Conversations to Understand Advantages of Social Cooperation. M.J. Federle, *University of Illinois at Chicago*

LB199 Direct and Specific Interaction of MIF and Bacterial Endotoxin May Play an Important Role in the Pathogenesis of Sepsis. T. Cho, *Saint Louis University School of Medicine*

LB200 Epstein-Barr Viral microRNAs Coordinately Repress Human Transcripts in Inflammatory and Apoptotic Pathways. D. Kolakada, C. Katrak, K. Riley, *Rollins College*

LB201 Identification and Characterization of Population Heterogeneity of Vibrio cholerae in Vivo. Y.N. Nguyen, L.M. Shull, A. Camilli, *Tufts University School of Medicine*

LB202 Genotypically Distinct Helicobacter pylori Causes Gastric and Peptic Ulcer Diseases in Kashmir Indian Patients. S. Rehman, A.C. Bharti, B.C. Das, J. Talukder, *West Virginia University, University of Delhi North Campus, India and University of Wisconsin-Stout*

LB203 Characterizing the Mechanism of Trogocytosis in Entamoeba histolytica. S.E. Feeney, K.S. Ralston, *University of California, Davis*

LB204 Toxoplasma gondii Reprogram Metabolism of the Host During Infection. I. Gendlina, K. Kim, *Albert Einstein College of Medicine*

LB205 Spectroscopic Investigation of Novel New Delhi Metallo-β-Lactamase-1 Inhibitors. A. Bergstrom, Z. Cheng, C. Miller, A. Chen, P. Thomas, R. Bonomo, W. Fast, S.M. Cohen, R.C. Page, D.L. Tierney, M.W. Crowder, *Miami University, University of California, University of Texas, Louis Stokes Cleveland Department of Veterans Affairs Medical Center and Case Western Reserve University*

LB206 Spinal Cord Injury and the Gut Microbiome: Mechanisms and Therapies for Bowel Dysfunction. E. Jeffrey, G. O'Connor, S. Deo, D. Dietrich, S. Daunert, *University of Miami Miller School of Medicine*

LB207 Detection and Quantification of Probiotic Strains in Clinical Fecal Samples of Healthy Adults by Real-Time PCR. V. Nagulesapillai, J. Belvis, T. Tompkins, S. Girard, *Lallemand Health Solutions, Canada*

LATE BREAKING
Metabolism and Bioenergetics

LB208 EIF5A1 Isoform A Can Modulate the Metabolism in HeLa Cells. K.D. Pereira, L. Tamborlin, L. Meneguello, L.H. Bomfim, A.R. de Proença, C.F. Melo, R.R. Catharino, L. Silveira, A.D. Luchessi, *University of Campinas, Brazil and São Paulo State University, Brazil*

LB209 Generation of Leigh Syndrome Cell Models. J. Alvarado, *California State University, Los Angeles*

LB210 Metabolic Differences in Nonessential Amino Acid Plasma Concentrations in High- and Low-Active Mice. J.Z. Granados, G.A M. Ten Have, A.C. Letsinger, N.E P. Deutz, J. Lightfoot, *Texas A&M University*

LB211 Metabolic Differences in Essential Amino Acid Plasma Concentrations in High- And Low-Active Mice. A.C. Letsinger, J. Granados, G.A M. Ten Have, N.E P. Deutz, J T. Lightfoot, *Texas A&M University*

LB212 Elucidation of Juglone Synthesis in Black Walnut. R.M. McCoy, Y. Ye, J.R. Widhalm, *Purdue University*

LB213 The Good, the Bad and the Ugly of Nitric Oxide, Superoxide and Peroxynitrite Signaling During Oxygen-Glucose Deprivation in Rat and Arctic Ground Squirrel. S. Bhowmick, K. Drew, *University of Alaska Fairbanks*

LB214 SP-A2 Contributes to miRNA-Mediated Sex Differences in Response to Ozone-Induced Oxidative Stress: Pro-Inflammatory, Anti-Apoptotic, and Anti-Oxidant Pathways Are Involved. N. Thorenoor, G.T. Noutsios, X. Zhang, D.S. Phelps, T.M. Umstead, F. Durrani, J. Floros, *Penn State University College of Medicine*

LB215 Tales from the Crypt: Malic Enzyme 1 (ME1) Links Metabolism to Intestinal Cancer. L. Fernandes, A. Al-Dwairi, M. Marji, D. Brown, R.C M. Simmen, F.A. Simmen, *University of Arkansas for Medical Sciences*

LB216 Comparison of Postprandial Hypoglycemic Effect of Ecklonia cava Extract in Healthy Subjects Using Three Different Challenge Models. Y. Kim, H. Lee, Y.S. Ahn, O. Kwon, *Ewha Womans University, Republic of Korea*

LB217 Oral Supplementation of Soybean and Hop Restored Bone Mass and Bone Turnover in Ovariectomized Rats. H. Lee, D. Noh, Y. Lim, O. Kwon, *Ewha Womans University, Republic of Korea*

LB218 Persimmon Tannin Regulates Gene Expressions Important for Lipogenesis and Cholesterol Efflux in HepG2 Cells. E K. Oh, Y. Ahn, O. Kwon, *Ewha Womans University, Republic of Korea*

LB219 Ethanol Extract of Phlomis tuberosa l. Promotes Glucose Uptake in 3T3-L1 Preadipocytes via Insulin Signaling Pathway. D. Baatar, O. Sukhbaatar, B. Oyungerel, S. Hwang, *Hankyong National University, Republic of Korea, and Mongolian University of Life Sciences, Mongolia*

LB220 P311, an Intrinsically Unstructured Protein, in Adipogenesis. K.R. Badri, K.M. Muppuru, R.E. Samuel, *Hampton University, Morehouse School of Medicine and Sree Vidyanikethan Engineering College, India*

LB221 Melatonin Improves Insulin Resistance and Hepatic Steatosis Through Attenuation of ER Stress. J. Heo, *Korea University, Republic of Korea*

LB222 Cytokine Production by Insulin Resistant Adipocytes. K.R. Levenberg, T. Laakko-Train, *Elon University*

LB223 The Optical Spectroscopic Properties of Glycation Induced Changes in Hemoglobins. V. Sriramoju, R. Dudley, J.A. Secor, S. Ashrafi, R.R. Alfano, *The City College of New York, City University of New York and NxGen Partners*

LATE BREAKING
Lipids and Membranes

LB224 A Novel Assay for Cardiolipin Quantification in Isolated Mitochondria and Cell Lysates. V. Bahl, S. Saddar, *BioVision*

LB225 Identification of Sterolic and Phenolic Catalpa Extractive Components. G.S. Epstein, *University of Wisconsin-Madison and U.S. Department of Agriculture, Forest Products Laboratory*

LB226 Yeast Pah1 Phosphatidate Phosphatase Regulates the Expression of Phosphatidylserine Synthase for Membrane Phospholipid Synthesis. G. Han, G.M. Carman, *Rutgers University*

LB227 HIF-1a-Mediated Induction of Insig-2 Regulates Cholesterol Metabolism by Accelerating Degradation of HMGCR. S. Hwang, Y. Jo, N. Wolff, J. Brugarolas, R. DeBose-Boyd, *University of Texas Southwestern Medical Center*

LB228 Dietary Long-Chain Monounsaturated Fatty Acid (LCMUFA) as Functional Ingredient in Fish Oils: A Novel Approach for Cardioprotection. Z. Yang, S. Gordon, M. Pryor, H. Miyahra, J. Takeo, A.T. Remaley, *National Institutes of Health (NIH), Central Research Laboratory and Nippon Suisan Kaisha, Japan*

LB229 Targeted LC/MS-Based Quantitative Determination of 8 Endogenous Free Fatty Acids in Human Pleural Effusion Using Surrogate Analytes. L Y. Yip, N. Basri, K L. Lim, G S. Tan, D S.W. Tan, T K.H. Lim, Y.S. Ho, *Bioprocessing Technology Institute, Singapore, Singapore General Hospital, Singapore and National Cancer Centre, Singapore*

LB230 Identification of Metabolites of Maresin 1 in Human Neutrophils. M.A. Gijón, A-C. Almstrand, C.A. Johnson, R.C. Murphy, S. Zarini, *University of Colorado Denver and Sahlgrenska University Hospital, Sweden*

LB231 Skin of the Catfish (Arius bilineatus, Val.) Contains Lipid Compounds That Regulate NET Formation and NET-Mediated Inflammation. C. Pace-Asciak, J.M. Al-Hassan, M. Afzal, B. Paul, S. Oommen, M. Khan, Y.F. Liu, N. Palaniyar, *Research Institute, The Hospital for Sick Children, Canada, Kuwait University, Kuwait and CMS College, India*

LATE BREAKING
Cell and Organelle Dynamics

LB232 The Role of the Subunits of the Conserved Oligomeric Golgi Complex in Filamentous Growth of the Fungus Aspergillus nidulans. S. Gremillion, *Armstrong State University*

LB233 A Novel Yeast-Based Screening System Identifies Signal Motifs That Regulate Membrane Protein Trafficking. J. Bernstein, Y. Okamoto, S. Shikano, *University of Illinois at Chicago*

LB234 Type I Interferons Block Extracellular Vesicle-Mediated Cargo Transfer. M.P. Hantak, E. Qing, T. Gallagher, *Loyola University Stritch School of Medicine*

LB235 Cellular Proteases Prime Extracellular Vesicles for Intercellular Communication. E. Qing, M. Hantak, T. Gallagher, *Loyola University Stritch School of Medicine*

LB236 Regulatory Mechanisms of Sec1/Munc18 Proteins in Intracellular Vesicle Fusion. H. Yu, Y. Liu, J. Shen, *University of Colorado at Boulder*

LB237 Nuclear Blebbing Solely as a Function of Chromatin Compaction State. P.Z. Liu, A.D. Stephens, E.J. Banigan, L. Almassalha, V. Backman, S.A. Adams, R.D. Goldman, J.F. Marko, *Northwestern University and Feinberg School of Medicine Northwestern University*

LB238 Comparison of the Structure Between the Wild Type Lamin A/C Protein and the Cardiac Disease Causing Variant D192G . S. Wall, A. Akman, A. Chow, M. Deng, F. Dumitrascu, M. Jiang, M. McCartney, T. Nguyen , T. Rulko , N. Sullivan, L. Wang, M. Xiao, H. Nicolas, *Ashbury College School, Canada and University of Ottawa, Canada*

LB239 Drug Delivery in the Eye. J. Hosten, S. Penumutchu, E. Lavik, *University of Maryland, Baltimore County*

LB240 Peroxynitrite Produced in Isolated Guinea Pig Cardiac Mitochondria: Role of Mitochondrial NOS. H.J. Gerdes, J.S. Heisner, M. Yang, A.K S. Camara, D.F. Stowe, *Medical College of Wisconsin*

LB241 First-In-Class Naturally Occurring Bioenergetic Peptide from Hibiscus sabdariffa. A. Kam, S. Loo, J.P. Tam, *Nanyang Technological University, Singapore*

LB242 MELAS and POLG Exhibit High Rates of Hypertension with Differential Resistance to Anti-Hypertensive Drugs Suggesting Divergent Pathogenic Mechanisms. A.D. Pauls, D-L. Nevay, D. Young, V. Sandhu, D.F. Yeung, M.M Y. Tsang, T.S.M. Tsang, A. Mattman, M.M. Mezei, D. Poburko, *Simon Fraser University, Canada, Vancouver General Hospital, Canada, University of British Columbia, Canada and Vancouver General Hospital and University of British Columbia, Canada*

LATE BREAKING
Glycans and Glycobiology

LB243 Antidiabetic Activity and Gene Expression Profiling of db Mice Treated with Catharsius molossus (a Type of Dung Beetle) Glycosaminoglycan. M. Ahn, H. Kim, B. Kim, J. Hwang, *National Academy of Agricultural Science, Republic of Korea*

LB244 Anti-Cancer Effect and Gene Expression Profiling of Melanoma Induced Mice Treated with Dung Beetle Glycosaminoglycan. M Y. Ahn, H J. Kim, B J. Kim, J S. Hwang, *National Academy of Agricultural Science, Republic of Korea*

LB245 Cellulose Degradation in Anaerobic Condition by Filament Fungi. B. Mercado-Garcia, *University of Puerto Rico, Puerto Rico*

LB246 Biological Roles of Oligosaccharides on Recombinant Eel LH and Functions of EelLH Receptors. M. Byambaragchaa, M-H. Kang, D. Kim, K-S. Min, *Hankyong National University, Republic of Korea, Hoseo University, Republic of Korea, National Institute of Fisheries Science (NIFS), Republic of Korea, and Institute of Genetic Engineering, Republic of Korea*

LATE BREAKING
ASBMB Education and Professional Development

LB247 Improving the Recruitment, Retention, and Success of Students in STEM Disciplines. D.M. Baker, K.M. Slunt, *University of Mary Washington*

LB248 Shadow-A-Postdoc Initiative: Evaluation of the Undergraduate Students' Research Workshop Series at the University of Alabama at Birmingham. O. Adedoyin, G. Jones, L. Schwiebert, *University of Alabama at Birmingham*

LB249 Simulating a Graduate Student Experience in an Undergraduate Course. A.E. Bednarski, *Washington University in St. Louis*

LB250 A 3D Intervention Addressing Enzyme-Substrate Interactions Misconceptions. C. Terrell, C. Bongers, *University of Minnesota, Rochester*

LB251 Development of an Interdisciplinary Undergraduate Research Training Program to Improve Retention and Future Success of Women in STEM. L.A. Nogaj, L. Roberts, S. Deprele, *Mount Saint Mary's University Los Angeles*

LB252 Integrase Move-In Day: Mechanisms of HIV DNA Integration. T.A. Windgassen, S. Fahlberg, B. Hanson, K. Klauser, S. Semia, J.L. Keck, *University of Wisconsin Madison and Monona Grove High School*

LB253 Fix the Wrecks, RecA. K. Dubiel, A. Liang, L. Sandholm, J.L. Keck, *University of Wisconsin Madison and Madison West High School*

LB254 Developing 3-D Molecular Models to Highlight the Angiotensin II Type I Receptor and Olmesartan Binding for Medical and Educational Applications. E.F. Schmitt Lavin, G. Merus, V. Ramirez, R. Vohra, *Nova Southeastern University*

LB255 Industry and Community Engagement in a High School Bioscience Course. A.J. Tabor, R.J. Gray, *Northern Arizona University, Coconino Community College and CAVIAT*

LB256 The Role of MeCP2 Mutations in a Reg-Rett-Able Syndrome. M. Arnholt, H. Bertucci, M. Bertucci, T. Dorosz, T. Hart , A. Heimermann, M. Lentz, T. Rusch, J. Schultz, N. Weber, H. Weiss, G. Makky, *Hartford Union High School and Marquette University*

LB257 Dll4: "Notch" Your Normal Pathway. E. Barmantje, E. Nelson, A. Agrawal, S. Chanjeevaram, A. Jhaveri, M. Lazar, K. Li, D. McManus, N. Santebennur, M. Schlidt, M. Medhora, *Elmbrook Schools and Medical College of Wisconsin*

LB258 Kinesin, the Workhorse of the Living Cell. J. Blythe, M. Burns, K. Fuchs, Z. Uttley, *Pittsburg High School*

LB259 Neuroglobin Gone Wild. C.L. Bresniker, S.A. Martinez, P. Anderson, B. Bartolomei, T. Bingham, P. Bogdon, J. Dulay, J. Mergens, A.W. Shipley, *El Capitan High School*

LB260 Histidine Kinase CheA: You Spin Me 'Round'. C. Chou, R. Martyr, D. Barila, M. Chaney, J. Drewes, I. Hak, H. Harroun, T. Kamenides, M. Lippard, C. Martyr, J. Merrill, T. Mugunga, Z. Neuhard, S. Real, D. Swope, T. Wilkinson, J.J. Falke, *Longmont High School and University of Colorado Boulder*

LB261 BRCA2's Role in Homologous Recombination Through Interaction with RAD51. M. D'Ausilio, A. Beckman, G. Brown, U. Emeghara, F. Ho, E. Malzberg, B. Spellman, K. Tavan, J. Xiao, R. Jensen, *The Pingry School and Yale University*

LB262 Neuroglobin's Protective Role in Ischemic Stroke. J. Fangmann, *Greenfield High School*

LB263 Host Cell-Zika Virus Interaction Determined by Envelope Protein Structure. A. Fassler, R. Shah, H. Khan, A. Shukla, K. Schultz, *School District of Marshfield and Marshfield High School*

LB264 "Buzz Off" Zika. F. Grant, N. Arendt, K. Ducheny, M. Norton, T. Ovsepyan, M. Ruege, H. Wildermuth, N. Silvaggi, *Grafton High School and University of Wisconsin-Milwaukee*

LB265 RPE65— Essential Visual Cycle Protein. C. Kaiser, P. Ahn, K. Arnhold, S. Bartos, B. Burkle, M. Chang, M. Coury, N. Cowan, N. Dittrich, R. Foster, J. French, T. Gamblin, J. Gorski, M. Hameed, L. Homberg, R. Johnson, S. Khan, E. Lewis, J. Otten, M. Rivera, A. Sabatino, T. Sargent, J. Schimmels, A. Smith, R. Stegeman, D. Strom, J. Strom, B. Tsuji, C. Visaya, J. Yamat, N. Yorke, K. Klestinski, A. Huckenpahler, *Marquette University High School and Medical College of Wisconsin Eye Institute*

LB266 TolC: An Important Component of Bacterial Efflux Pumps, and Potential Target for Ameliorating Antibiotic Resistance. E. Kessler, J. Whalen, H. Bradford, V. Chavali, D. Engle, J. Jeng, T. Meier, G. Merchant, S. Narayanan, A. Song, A. Sundar, E. Van Lieshout, *Center for Advanced Professional Studies (CAPS)*

LB267 Inhibition of δ-Opioid Receptors. P. Krukar, K. Burmeister, E. Davis, L. Dragseth, A. Gent, A. Janssen, S. Koch, M. Shaheer, S. Panta, K. Brown, C.W. Cunningham, *Whitefish Bay High School and Concordia University Wisconsin*

LB268 Structural and Evolutionary Insights from the Reconstructed Ancestral Plant Hydroxynitrile Lyase, HNL1. A. Peterson, L. Bunday, E. Bussman, S. Chadha, J. Ridler, E. Romashkova, *Minnetonka High School*

LB269 NMDAR Helps You Think, So Please Reconsider That Extra Drink. D. Sampe, G. Block, TJ. Davis, N. Dong, J. Freuler, M. Mietkowski, T J. Rowney, N. Stoehr, R.W. Peoples, *Brown Deer High School and Marquette University*

LB270 Coughing Up a Cure for Whooping Cough with Pertussis Toxin. K. Tiffany, A. Arnholt, S. Arnholt, D. Arzumanyan, L. Arzumanyan, A. Butt , A. Houghtaling, L. Ketelhohn, J. Levy, N. Miller, N. Minerva, E. Remington, B. Tiffany, J. Wankowski, J. Barbieri, M. Zuverink, *Cedarburg High School and Medical College of Wisconsin*

LB271 The Relationship Between Size, Structure, and Function in Erythrocruorin. J. Cabey, A. Arroyo, A. Babu Sai, S. Corpuz, E. Hoggard, K. Huang, Q. Meng, A. Pidara, I. Rehman, C. Sabah, *Lincoln Park High School and Chicago Public Schools*

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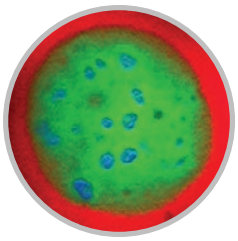

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