Annual Meeting **Program**

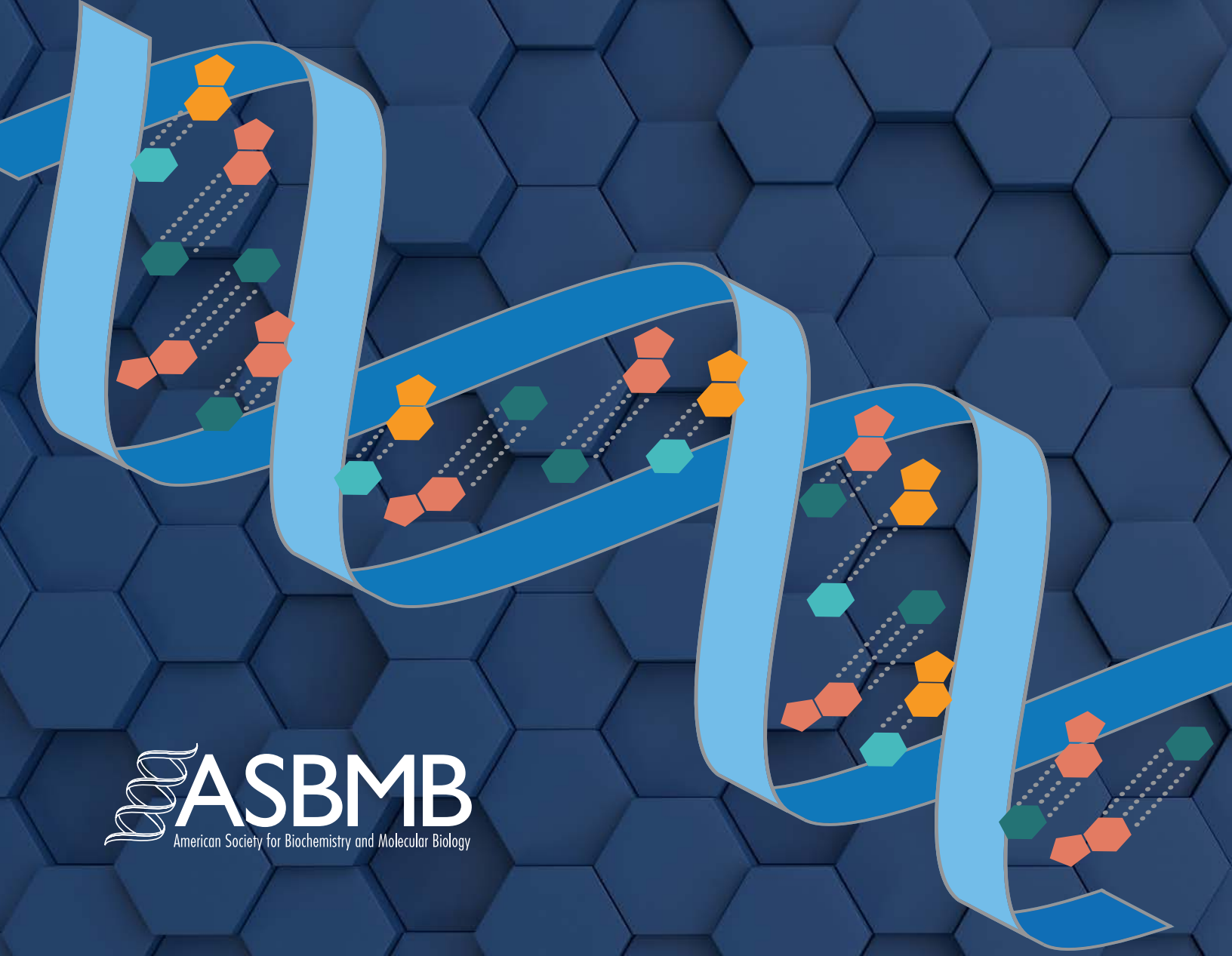
TOGETHER

ONCE **MORE**

Held in conjunction with

ASBMB
American Society for Biochemistry and Molecular Biology

EB
Experimental Biology



ASBMB
American Society for Biochemistry and Molecular Biology

Let's connect!

Visit the ASBMB **booth #1739** and lounge to learn about upcoming programs, in-person conferences and more. Stop by to grab branded giveaways and connect with your community.

asbmb.org

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Program at-a-glance

Saturday April 2

Time	Location	Event
9:00 AM - 11:00 AM	Convention Center 120 A	Research Education Interest Group - Connecting the community for the benefit of student outcomes
10:30 AM - 11:00 AM	Convention Center 126 AB	ASBMB Undergraduate student poster competition orientation
11:00 AM - 12:00 PM	Convention Center Terrace Ballroom 3	ASBMB Undergraduate poster competition judges' orientation
11:00 AM - 3:30 PM	Convention Center Terrace Ballroom 4	ASBMB Undergraduate student poster competition
12:00 PM - 4:00 PM	Convention Center Terrace Ballroom 3	ASBMB Undergraduate poster competition judges' workgroup
12:45 PM - 2:45 PM	Convention Center 120 A	Chemical Biology Interest Group - Emerging chemical approaches to complex biology
12:45 PM - 2:45 PM	Convention Center 120 B	Glycobiology Interest Group - Glycobiology at the cutting edge
12:45 PM - 2:45 PM	Convention Center 120 C	Lipids Interest Group - Novel insight into roles of lipids in signaling and human disease
12:45 PM - 2:45 PM	Convention Center 121 A	Neuroscience Interest Group
12:45 PM - 2:45 PM	Convention Center 121 B	Protein Interest Group - Membrane proteins
12:45 PM - 2:45 PM	Convention Center 121 C	Signaling Interest Group - New paradigms in hormonal regulation of cancer and development
3:00 PM - 5:00 PM	Convention Center 122 A	Enzymology Interest Group
3:00 PM - 5:00 PM	Convention Center 122 B	Mitochondria Interest Group - Multifaceted Mitochondria
3:00 PM - 5:00 PM	Convention Center 121 B	Protein Interest Group - Post-translational modification: emerging topics and techniques
3:00 PM - 5:00 PM	Convention Center 121 C	Signaling Interest Group - Emerging mechanisms of cellular communication in physiology and disease
4:30 PM - 5:30 PM	Convention Center 119 AB	ASBMB Undergraduate student workshop: exploring careers speed networking
7:00 PM - 8:30 PM	Convention Center Exhibit/Poster Hall A-B	EB Welcome Reception with Science Outreach Poster Session

Sunday April 3

Time	Location	Event
7:00 AM - 8:00 AM	Convention Center Terrace Ballroom 3	ASBMB first-time attendee and new member welcome orientation
8:00 AM - 8:45 AM	Convention Center Terrace Ballroom 4	ASBMB welcome and business meeting
8:45 AM - 9:15 AM	Convention Center Terrace Ballroom 4	Herbert Tabor Research Award
9:30 AM - 11:30 AM	Convention Center 122 A	Atypical signaling mechanisms
9:30 AM - 11:30 AM	Convention Center 120 C	Enzyme structure and function
9:30 AM - 11:30 AM	Convention Center 121 B	Epigenetics and aging: can we turn back the clock?
9:30 AM - 11:30 AM	Convention Center 126 B	Inclusive and civil communication
9:30 AM - 11:30 AM	Convention Center 121 A	Machines on chromatin
9:30 AM - 11:30 AM	Convention Center 120 A	Macromolecular complexes
9:30 AM - 11:30 AM	Convention Center 121 C	Metabolism and model systems
9:30 AM - 11:30 AM	Convention Center 126 A	Organizing signaling domains through non-vesicular lipid transfer and membrane contacts
9:30 AM - 11:30 AM	Convention Center 122 B	Quality control in the early secretory pathway
9:30 AM - 11:30 AM	Convention Center 120 B	Structure/function and manipulation and imaging of the glycocalyx
11:45 AM - 1:00 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Meet the Experts
12:15 PM - 1:45 PM	Convention Center 126 B	ASBMB Advocacy Town Hall Meeting
12:45 PM - 2:00 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Poster Presentations
1:00 PM - 2:00 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Accreditation program q&a session
2:00 PM - 4:00 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Connect
2:15 PM - 2:50 PM	Convention Center Terrace Ballroom 4	ASBMB Merck Award
2:45 PM - 3:15 PM	Convention Center Terrace Ballroom 4	William C. Rose Award
3:30 PM - 5:00 PM	Convention Center Terrace Ballroom 4	ASBMB Award for Exemplary Contributions to Education Lecture and Session
3:30 PM - 4:00 PM	Convention Center 119 AB	Walter A. Shaw Young Investigator Award in Lipid Research

Sunday April 3

Time	Location	Event
3:30 PM - 4:50 PM	Convention Center 126 A	JBC Herbert Tabor Early Career Investigator Awards
3:30 PM - 4:30 PM	Convention Center 120 C	Enzymes in the spotlight
3:30 PM - 4:30 PM	Convention Center 120 B	New links between glycoproteins, tissue development and disease
3:30 PM - 4:30 PM	Convention Center 121 C	Emerging metabolic techniques and mechanisms
3:30 PM - 4:30 PM	Convention Center 120 A	From molecular condensation to protein sorting
3:30 PM - 4:30 PM	Convention Center 122 B	Membrane and membrane-free organelles & quality control
3:30 PM - 4:30 PM	Convention Center 122 A	Atypical signaling
3:30 PM - 4:30 PM	Convention Center 121 A	DNA/RNA regulation of nuclear processes
4:00 PM - 5:00 PM	Convention Center 119 AB	Lipids shaping membranes and creating signaling platforms
4:45 PM - 5:45 PM	Convention Center 120 B	Chromatin structure, remodeling and gene expression
4:45 PM - 5:45 PM	Convention Center 121 A	RNA: processing, transport, and regulatory mechanisms
4:45 PM - 5:45 PM	Convention Center 120 A	Protein synthesis and interactions
4:45 PM - 5:45 PM	Convention Center 120 C	Chemical biology and drug discovery in acute and chronic disease
4:45 PM - 5:45 PM	Convention Center 121 C	New innovations in “omic” technology
4:45 PM - 5:45 PM	Convention Center 122 A	GPCR signaling
4:45 PM - 5:45 PM	Convention Center 121 B	Pathogen-host interactions
4:45 PM - 5:45 PM	Convention Center 122 B	Structure of proteins involved in signaling and lipid metabolism
4:45 PM - 5:45 PM	Convention Center 126 B	Innovative teaching strategies in the STEM classroom
6:00 PM - 7:30 PM	Convention Center 120 C	The power of storytelling
6:00 PM - 7:30 PM	Convention Center 120 A	Success in scientific publishing workshop
6:00 PM - 7:30 PM	Philadelphia Marriott Downtown Grand Ballroom E	ASBMB women scientists networking event — The evolution of work–life integration in the time of COVID-19
6:00 PM - 7:30 PM	Convention Center 121 B	Control of inflammation by dietary interventions

Sunday April 3

Time	Location	Event
6:00 PM - 7:30 PM	Convention Center 126 A	**Approaches to teaching in the biosciences using different course modalities**
6:00 PM - 7:30 PM	Convention Center 121 A	**Increasing diversity through master's degree programs**
7:00 PM - 9:00 PM	Philadelphia Marriott Downtown Grand Ballroom H	**ASBMB Welcome Reception, sponsored by the Minority Affairs Committee**

Monday April 4

Time	Location	Event
7:00 AM - 8:00 AM	Convention Center Terrace Ballroom 3	ASBMB graduate student and postdoc travel awardee networking
8:00 AM - 8:30 AM	Convention Center Terrace Ballroom 4	DeLano Award for Computational Biosciences
8:30 AM - 9:00 AM	Convention Center Terrace Ballroom 4	Avanti Award in Lipids
9:15 AM - 11:15 AM	Convention Center 121 C	Complex metabolic interactions
9:15 AM - 11:15 AM	Convention Center 121 B	Epigenetic regulation of metabolism: from bench to bedside
9:15 AM - 11:15 AM	Convention Center 120 C	Frontiers in enzymology
9:15 AM - 11:15 AM	Convention Center 120 B	Glycans in cell biology
9:15 AM - 11:15 AM	Convention Center 122 A	New approaches for global cell signaling
9:15 AM - 11:15 AM	Convention Center 121 A	Noncoding RNA regulation of chromatin states and transcription
9:15 AM - 11:15 AM	Convention Center 126 A	Novel approaches to understand membrane composition and structure
9:15 AM - 11:15 AM	Convention Center 122 B	Organelles and cellular homeostasis
9:15 AM - 11:15 AM	Convention Center 120 A	Phase transitions of structured complexes and cellular machinery
9:15 AM - 11:15 AM	Convention Center 126 B	Strategies for assessment in higher education
11:30 AM - 12:45 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Meet the Experts
12:30 PM - 1:45 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Poster Presentations
1:00 PM - 2:00 PM	Convention Center Exhibit/Poster Hall A-B	Building community through ASBMB Student Chapters
2:00 PM - 2:30 PM	Convention Center Terrace Ballroom 4	Earl and Thressa Stadtman Distinguished Scientist Award
2:00 PM - 4:00 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Connect
2:30 PM - 3:00 PM	Convention Center Terrace Ballroom 4	Mildred Cohn Award in Biological Chemistry
3:15 PM - 4:15 PM	Convention Center 120 C	Allostery and enzyme function
3:15 PM - 4:15 PM	Convention Center 120 B	Antibacterial targets and antibiotic resistance
3:15 PM - 4:15 PM	Convention Center 121 B	Cancer signaling and therapeutics

Monday April 4

Time	Location	Event
3:15 PM - 4:15 PM	Convention Center 122 A	Chemical biology
3:15 PM - 4:15 PM	Convention Center 121 A	DNA polymerases, telomerase, replicases and replisomes
3:15 PM - 4:15 PM	Convention Center 122 B	Lipid homeostasis
3:15 PM - 4:15 PM	Convention Center 121 C	Mitochondrial metabolism
3:15 PM - 4:15 PM	Convention Center 120 A	Protein modifications
3:15 PM - 4:15 PM	Convention Center 126 B	Teaching strategies and lessons learned during COVID-19
3:15 PM - 4:30 PM	Convention Center 126 A	Exciting Biological Insights Revealed by Proteomics: a Molecular & Cellular Proteomics Presentation
3:15 PM - 5:10 PM	Convention Center 119 AB	Alice and CC Wang Award in Molecular Parasitology Symposium
4:30 PM - 5:30 PM	Convention Center 120 B	Apopotosis
4:30 PM - 5:30 PM	Convention Center 121 C	Cancer metabolism
4:30 PM - 5:30 PM	Convention Center 120 C	Chemical biology and drug discovery in infectious disease
4:30 PM - 5:30 PM	Convention Center 126 B	DNA recombination, structure and topology
4:30 PM - 5:30 PM	Convention Center 121 B	Epigenetic modifications of DNA and RNA
4:30 PM - 5:30 PM	Convention Center 122 B	Lipid metabolism functions
4:30 PM - 5:30 PM	Convention Center 120 A	Membrane traffick and dynamics
4:30 PM - 5:30 PM	Convention Center 121 A	RNA binding proteins
4:30 PM - 5:30 PM	Convention Center 122 A	Ubiquitin signaling
5:45 PM - 7:15 PM	Convention Center 120 B	Becoming the boss of your career
5:45 PM - 7:15 PM	Convention Center 120 A	Pedagogical lessons learned during the time of COVID-19
5:45 PM - 7:15 PM	Convention Center 121 A	RNA export at the nuclear pore complex
5:45 PM - 7:15 PM	Convention Center 120 C	Transforming scientific research into equitable outreach

Tuesday April 5

Time	Location	Event
8:00 AM - 8:30 AM	Convention Center Terrace Ballroom 4	Ruth Kirschstein Diversity in Science Award
8:30 AM - 9:00 AM	Convention Center Terrace Ballroom 4	Bert and Natalie Vallee Award in Biomedical Science
9:15 AM - 11:15 AM	Convention Center 122 A	Bringing the dead to life: pseudoenzymes
9:15 AM - 11:15 AM	Convention Center 126 A	Membrane dynamics in trafficking and signaling
9:15 AM - 11:15 AM	Convention Center 121 C	Metabolic mechanisms
9:15 AM - 11:15 AM	Convention Center 121 A	New approaches to visualize nucleic acids
9:15 AM - 11:15 AM	Convention Center 122 B	Organizing the cytoplasm during stress
9:15 AM - 11:15 AM	Convention Center 120 A	Physiological and pathological phase transitions of disordered proteins
9:15 AM - 11:15 AM	Convention Center 120 B	Physiological impact of glycans in tissue homeostasis and disease – focus on cell-ECM interactions
9:15 AM - 11:15 AM	Convention Center 120 C	Radical SAM enzymology
9:15 AM - 11:15 AM	Convention Center 121 B	Translational epigenetics: the apple doesn't fall too far from the tree
11:30 AM - 12:45 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Meet the Experts
12:30 PM - 1:45 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Poster Presentations
1:00 PM - 4:00 PM	Convention Center Exhibit/Poster Hall A-B	ASBMB Connect
2:00 PM - 2:30 PM	Convention Center Terrace Ballroom 4	ASBMB Young Investigator Award
2:30 PM - 3:30 PM	Convention Center 123	Thermodynamics in the everyday life of biologists
2:45 PM - 3:45 PM	Convention Center 120 C	Drug screening
2:45 PM - 3:45 PM	Convention Center 121 B	Gene regulation
2:45 PM - 3:45 PM	Convention Center 119 AB	Lipid Diversity and Disease: Spotlight on Journal of Lipid Research Junior Associate Editors
2:45 PM - 3:45 PM	Convention Center 122 B	Membrane architecture
2:45 PM - 3:45 PM	Convention Center 120 A	Metal mania
2:45 PM - 3:45 PM	Convention Center 122 A	Neurobiology and neuronal signaling

Tuesday April 5

Time	Location	Event
2:45 PM - 3:45 PM	Convention Center 121 A	Non-coding RNAs
2:45 PM - 3:45 PM	Convention Center 121 C	Novel kinase regulatory mechanisms
2:45 PM - 3:45 PM	Convention Center 126 B	Nutrition and metabolism
2:45 PM - 3:45 PM	Convention Center 120 B	Recent advances in glycobiology
2:45 PM - 4:15 PM	Convention Center 126 A	Race and mental health in STEM
4:00 PM - 5:00 PM	Convention Center 122 A	Genomics, glycomics, proteomics and metabolomics
4:00 PM - 5:00 PM	Convention Center 120 C	Immune signaling
4:00 PM - 5:00 PM	Convention Center 122 B	Lipid synthesis and metabolism
4:00 PM - 5:00 PM	Convention Center 120 B	Microbiome interactions
4:00 PM - 5:00 PM	Convention Center 121 A	Obesity metabolism
4:00 PM - 5:00 PM	Convention Center 120 A	Protein structure and biophysics
4:00 PM - 5:00 PM	Convention Center 121 B	Transcriptional mechanisms, regulation and RNA polymerases
4:00 PM - 5:00 PM	Convention Center 121 C	Tumor biochemistry

ASBMB oral program

SUNDAY
APRIL 3

84 ## ASBMB first-time attendee and new member welcome orientation

SOCIETY EVENT

7:00 AM - 8:00 AM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 3

All first-time attendees and new members are invited to attend this informal and friendly welcome session. Meet people on the membership committee and other new and longtime members. Get answers to your questions to ensure that you are ready to take advantage of all the events at the meeting and ASBMB member benefits.

90 ## ASBMB welcome and business meeting

SOCIETY EVENT

8:00 AM - 8:45 AM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

Toni Antalis, ASBMB President

111 ## Herbert Tabor Research Award

LECTURE

8:45 AM - 9:15 AM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

8:45 AM	111.1	Introduction
8:50 AM	111.2	My Journey with cAMP-dependent Protein Kinase. **S. Taylor, University of California, San Diego**

112 ## Enzyme structure and function

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Catherine Drennan

9:30 AM	112.1	Riboflavin Catabolism: the destruction of an icon. **T. Begley, Texas A&M University**
10:00 AM	112.2	Repairing enzymes using spare parts. **C. Drennan, MIT**
10:30 AM	112.3	Machinery in motion: New insights into mitochondrial proteostasis. **G. Lander, Scripps Research**
11:00 AM	112.4	Structure-Based Strategies for Rieske Oxygenase Catalysis. **J. Bridwell-Rabb, University of Michigan**

113 Structure/function and manipulation and imaging of the glycocalyx

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Steve Withers

9:30 AM	113.2	Nanometers matter in immune evasion mediated by the cellular glycocalyx. M. Paszek, Cornell University
10:00 AM	113.3	MALDI imaging mass spectrometry mapping of the glycocalyx. R. Drake, Medical University of South Carolina
10:30 AM	113.4	Genetic and small molecule strategies to edit the glycocalyx. S. Neelamegham, State University of New York
11:00 AM	113.1	Enzymatic removal of cell surface antigens as a route towards universal O type blood and organs. S. Withers, University of British Columbia

114 Macromolecular complexes

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Martin Beck

9:30 AM	114.1	Conformational dynamics of nuclear pores. M. Beck, Max Planck Institute of Biophysics
10:00 AM	114.2	Molecular-scale structure of a high-curvature membrane. A. Frost, UCSF
10:30 AM	114.3	Structure and function of DNA transposition assemblies involved in antibiotic resistance spreading. O. Barabas, University of Geneva
11:00 AM	491.10	Conformational dynamics of SNARE recycling mediated by NSF. U. Choi, West Virginia University

115 Machines on chromatin

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Karolin Luger

9:30 AM	115.1	Cracking the Nucleus: Finding order in chaos. C. O'Shea, Salk Institute
10:00 AM	115.2	Some assembly required: structural and mechanistic studies of histone chaperones, nucleosome assembly factors and ATP dependent chromatin remodelers. K. Luger, University of Colorado
10:30 AM	115.3	Visualization of human telomerase holoenzyme by cryo-EM. K. Nguyen, MRC Laboratory of Molecular Biology
11:00 AM	115.4	How does cohesin organize the 3D genome? I. Finkelstein, University of Texas, Austin

116 Epigenetics and aging: can we turn back the clock?

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Orna Laster and Sonia Flores

9:30 AM	116.1	A sex-specific role for long noncoding RNA in depression susceptibility and resilience. O. Issler, Icahn School of Medicine at Mount Sinai
10:00 AM	116.2	Rethinking the stress paradigm: exploring new connections between epigenetic adaption and cellular stress. K. Ragunathan, University of Michigan Medical School
10:30 AM	116.3	Extracellular vesicles as stress signals: identifying novel systemic mechanisms of trauma programming. T. Bale, University of Maryland School of Medicine
11:00 AM	116.4	Sex-dimorphism in aging: are we missing half of the picture? B. Benayoun, University of Southern California

117 Quality control in the early secretory pathway

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Jeffrey Brodsky

9:30 AM	117.1	The degradation of misfolded proteins in the ER. J. Brodsky, University of Pittsburgh
10:00 AM	117.2	The Vitamin K_2 Synthetic Enzyme UBIAD1 Moonlights as a Key Regulator of Cholesterol Synthesis. R. DeBose-Boyd, University of Texas Southwest Medical Center
10:30 AM	117.3	Common signaling principles and interconnectivity in the ISR-UPR networks. D. Acosta-Alvear, University of California
11:00 AM	117.4	The role of rhomboid pseudoproteases in protecting the membrane proteome. S. Neal, University of California San Diego

118 Inclusive and civil communication

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 126 B

CHAIR: Erin Sayer

9:30 AM	118.1	Seeing equity in courses from data to faculty learning communities. C. Brassil, University of Nebraska - Lincoln
10:00 AM	118.2	Creative strategies to perform and inclusive faculty search (Part I). A. Corbett, Emory University
10:30 AM	118.3	Creative strategies to perform and inclusive faculty search (Part II). W. Gilbert, Yale University
11:00 AM	118.4	Listening to and partnering with students to build inclusive STEM communities. S. Bunnell, Amherst College

119 Atypical signaling mechanisms

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Patrick Eyers

9:30 AM	119.2	**Structural and mechanistic basis for protein glutamylation by the kinase fold.** V. Tagliabracci, HHMI/UT Southwestern
10:00 AM	119.3	**Structural basis for signaling by the HER3 pseudokinase receptor.** N. Jura, University of California
10:30 AM	119.1	**Tracing copper utilization by kinase signal transduction pathways: Implications for cancer cell processes.** D. Brady, University of Pennsylvania
11:00 AM	119.4	**Beyond Lysine Ubiquitination.** S. Virdee, University of Dundee

120 Metabolism and model systems

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Dohoon Kim

9:30 AM	120.1	**Regulation of metabolic network function with enzyme expression.** S. Wilmaz, University of Massachusetts
10:00 AM	120.2	**Identifying toxic metabolites and their roles in disease.** D. Kim, University of Massachusetts Medical School
10:30 AM	120.3	**Transcriptional regulation of primary and specialized metabolism.** S. Brady, University of California, Davis
11:00 AM	120.4	**Interorgan crosstalk and metabolism regulation in Drosophila.** N. Perrimon, Harvard Medical School

121 Organizing signaling domains through non-vesicular lipid transfer and membrane contacts

SYMPOSIUM

9:30 AM - 11:30 AM PENNSYLVANIA CONVENTION CENTER, 126 A

CHAIR: Orna Cohen-Fix

9:30 AM	121.2	**Regulation of PIP2 homeostasis at ER-plasma membrane contacts by Nir proteins.** Jen Liou, University of Texas Southwestern Medical Center
10:00 AM	121.3	**Roles for inter-organelle contacts in organizing metabolism.** W. Mike Henne, University of Texas Southwestern Medical Center, Dept of Cell Biology
10:30 AM	121.1	**Systematic analysis of membrane contact sites.** Maya Schuldiner, Weizmann Institute of Science
11:00 AM	121.4	**Novel pathways of intracellular membrane lipid transport and neurodegenerative diseases.** Pietro De Camilli, Yale University School of Medicine/Howard Hughes Medical Institute

129 ASBMB Meet the Experts

SOCIETY EVENT

11:45 AM - 1:00 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

Continue the conversation with leading experts from symposia and award lectures in the ASBMB Lounge located across from ASBMB society booth #1739 in the Exhibit Hall.

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ASBMB Advocacy Town Hall Meeting

SOCIETY EVENT

12:15 PM - 1:45 PM PENNSYLVANIA CONVENTION CENTER, 126 B

CHAIR: Rick Page

Join the ASBMB Public Affairs Advisory Committee to hear about the intersection of policy and science. What policies has the Biden administration enacted to support the nation's biomedical research enterprise? And how can federal agencies support researchers still struggling with the impacts of COVID-19 and related university and laboratory shutdowns. ASBMB Public Affairs Director Sarina Neote will be joined by the PAAC chair, Rick Page, who will field your questions on politics, science policy and getting involved in advocacy.

Boxed lunches will be provided to the first 50 event participants, first come, first served.

141

ASBMB Accreditation program Q&A session

SPECIAL EVENT

1:00 PM - 2:00 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

Learn more about ASBMB accreditation for B.A. and B.S. programs in biochemistry and molecular biology and related disciplines. This program will be in the ASBMB lounge across from ASBMB booth #1739, in the Exhibit Hall.

164

ASBMB Connect

SOCIETY EVENT

2:00 PM - 4:00 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

Meet with ASBMB staff, committee and journal editorial members. Opportunity to learn more about what the Society offers and to discuss your challenges and how the Society can better serve our members. This program will be in the ASBMB lounge across from ASBMB booth #1739, in the Exhibit Hall.

165

ASBMB Merck Award

LECTURE

2:15 PM - 2:50 PM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

2:15 PM	165.1	**Introduction**
2:20 PM	165.2	**The phase of fat: Mechanisms and physiology of lipid storage.** R. Farese, Jr., Harvard University, T. Walter, Harvard University

166

William C. Rose Award

LECTURE

2:45 PM - 3:15 PM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

2:45 PM	166.1	**Introduction**
2:50 PM	166.2	**Progress Toward Understanding Protein Control of Reaction Outcome in the Diverse Reactivity of Iron(II)- and 2-Oxoglutarate-dependent Oxygenases.** J. Bollinger, Jr., Penn State University

171 ## ASBMB Award for Exemplary Contributions to Education Lecture and Session

LECTURE

3:30 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

3:30 PM	171.1	Introduction
3:35 PM	171.2	It's all about the students. J. Provost, University of San Diego

172 ## Walter A. Shaw Young Investigator Award in Lipid Research

LECTURE

3:30 PM - 4:00 PM PENNSYLVANIA CONVENTION CENTER, 119 AB

3:30 PM	172.1	Introduction
3:35 PM	172.2	Snapshots of lipid synthesis and fat storage. M. Airola, Stony Brook University

173 ## JBC Herbert Tabor Early Career Investigator Awards

SPOTLIGHT SESSION

3:30 PM - 4:50 PM PENNSYLVANIA CONVENTION CENTER, 126 A

CHAIR: George DeMartino

3:30 PM	173.1	The evolution and mechanism of GPCR proton sensing. J. Rowe, University of Miami Miller School of Medicine
3:50 PM	173.2	Structures and kinetics of Thermotoga maritima MetY reveal new insights into the predominant sulfurylation enzyme of bacterial methionine biosynthesis. J. Brewster, University of Wollongong
4:10 PM	173.3	SARS-CoV-2 infects cells after viral entry via clathrin-mediated endocytosis. A. Bayati, McGill University
4:30 PM	173.4	Molnupiravir promotes SARS-CoV-2 mutagenesis via the RNA template. C. Gordon, University of Alberta

174 ## Enzymes in the spotlight

SPOTLIGHT SESSION

3:30 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Lindsey Backman

3:30 PM	497.4	Transformations of phosphonates by non-heme iron-dependent oxygenases. D. Zechel, Queen's University
3:50 PM	654.6	Mechanism and Evolution of [4+2] Cyclases in Monoterpene Indole Alkaloid Biosynthesis. M. DeMars, Max Planck Institute for Chemical Ecology
4:10 PM	497.3	Structurally investigating a niche pathway for chemical reversal of proline hydroxylation in the pathogen Clostridioides difficile. L. Backman, Massachusetts Institute of Technology

175 New links between glycoproteins, tissue development and disease

SPOTLIGHT SESSION

3:30 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Taylor Ticer

3:30 PM	680.5	Conformationally altered hyaluronan mitigates the symptoms of Parkinson disease in mice. T. Sun, National Cheng Kung University
3:45 PM	820.5	Exploring new bacterial-fungal interactions: the role of mannan degradation in Streptococci growth. T. Ticer, Medical University of South Carolina
4:00 PM	680.1	OTX2's Dual Mode of Degradation is Regulated by O-GlcNAcylation. E. Wulff Fuentes, Medical College of Wisconsin
4:15 PM	680.7	Maternal Zika Virus Infection Alters Offspring Hippocampal Glycan Sulfation Patterns in Nonhuman Primates. K. Alonge, University of Washington

176 Emerging metabolic techniques and mechanisms

SPOTLIGHT SESSION

3:30 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Wei Wei

3:30 PM	815.10	A selenium-iron axis dictates cancer cell sensitivity to pharmacologic ascorbate. C. Jankowski, Princeton University
3:45 PM	673.3	A Tandem Activity-Based Sensing and Labeling Strategy Enables Imaging of Transcellular Hydrogen Peroxide Signaling. M. Messina, University of California
4:00 PM	513.5	Ketones Improve the Mitochondrial Coupling Efficiency of Brown Adipocytes. Z. Moazzami, University of Minnesota
4:15 PM	817.11	An organism-wide atlas of tissue crosstalk in physical activity. W. Wei, Stanford University

177 From molecular condensation to protein sorting

SPOTLIGHT SESSION

3:30 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Randal Halfmann

3:30 PM	495.1	Structure of a pathologic amyloid nucleus determined by rational genetic deconstruction of an intracellular nucleation barrier. R. Halfmann, Stowers Institute for Medical Research
3:45 PM	487.1	Interplay between TPR nucleoporin and TREX-2 complex in mRNA export. M. Dasso, National Institute of Child Health and Human Development
4:00 PM	660.4	Engineered Nuclear Import Receptor Karyopherin-&[beta]2 Chaperones Aberrant Phase Transitions of Disease-Associated Cargo. C. Fare, University of Pennsylvania
4:15 PM	496.4	Proteasome Localization is Regulated Through Mitochondrial Respiration and Kinase Signaling. K. Waite, University of Kansas Medical Center

178 Membrane and membrane-free organelles & quality control

SPOTLIGHT SESSION

3:30 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Alex Siegel

3:30 PM	790.2	Identification of Signaling Pathways and Phase Separating Domains that Drive Cajal Body Formation. M. Logan, University of Mississippi Medical Center
3:45 PM	650.7	Self-assembling Long Coiled-coil Proteins Driving the Formation of a Nanoscale Cylindrical Architecture at Human Centrosomes. J. Ahn, National Cancer Institute
4:00 PM	493.7	Client Specificity of an ATP-independent Chaperone is Regulated by a Temperature Sensitive Switch. A. Siegel, California Institute of Technology
4:15 PM	524.7	Investigating Mitochondrial Dysfunction in Barth Syndrome. O. Sniezek, Johns Hopkins School of Medicine

179 Atypical signaling

SPOTLIGHT SESSION

3:30 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Julia Hardy

3:30 PM	664.13	First-in-class Deubiquitylase Inhibitors Reveal New Enzyme Conformations. F. Chandler, University of Leeds
3:45 PM	505.7	Unconventional GPCR-PKA Signaling in the Hedgehog Pathway. B. Myers, University of Utah School of Medicine
4:00 PM	807.3	Non-canonical Recruitment of PKA Catalytic Subunits to RIα-driven Biomolecular Condensates. J. Hardy, University of California, San Diego
4:15 PM	807.1	The Plastoglobule-localized AtABC1K6 is a Mn^{2+} - dependent Protein Kinase Necessary for Timely Transition to Reproductive Growth. P. Lundquist, Michigan State University

180 DNA/RNA regulation of nuclear processes

SPOTLIGHT SESSION

3:30 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Johnathan Whetstine

3:30 PM	644.9	The role of substrate deformation in context-dependent non-CG DNA methylation. J. Song, University of California
3:45 PM	643.6	Epigenetics: A Gatekeeper to DNA Amplification and Replication Control. J. Whetstine, Fox Chase Cancer Center
4:00 PM	644.11	Rotational dynamics of the MLL complex on nucleosome and its implication in heterogeneity of the epigenetic landscape. Y. Dou, University of Southern California
4:15 PM	785.5	Transcriptional regulation via strand displacement DNA repair in G-quadruplexes. A. Whitaker, Fox Chase Cancer Center

194 **Lipids shaping membranes and creating signaling platforms**

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 119 AB

CHAIR: Claudia Mattheus

4:00 PM	677.8	Palmitoylation Targets the Calcineurin Phosphatase to the Phosphatidylinositol 4-kinase Complex at the Plasma Membrane. M. Cyert, Stanford University
4:15 PM	677.4	ATG9 Vesicles Are Incorporated Into Nascent Autophagosome Membranes. T. Olivas, Yale University
4:30 PM	518.3	From Flat to Bulb - Novel Insights in Caveolae Membrane Curvature. C. Matthaeus, National Heart, Lung, and Blood Institute
4:45 PM	819.8	Membrane Phosphoinositides Stabilize GPCR-arrestin Complexes and Provide Temporal Control of Complex Assembly and Dynamics. J. Janetzko, Stanford University

196 **Chromatin structure, remodeling and gene expression**

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Brittany Albaugh

4:45 PM	643.4	Molecular investigation of the TTD and PHD histone binding domains of the epigenetic regulator UHRF2. B. Albaugh, Eastern Michigan University
5:00 PM	484.6	PROTECTION OF TELOMERES 1b Modulates Cellular ROS and Chromatin Structure in Arabidopsis thaliana. C. Castillo-González, Texas A&M University
5:15 PM	643.1	Transcriptome and regulome signatures of multiple myeloma induced by bone marrow stromal cells. S. Dziadowicz, West Virginia University
5:30 PM	643.3	Structural and Biophysical Characterization of Plasmodium falciparum Bromodomain Protein 1. A. Singh, University of Vermont

197 **RNA: processing, transport, and regulatory mechanisms**

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Joshua Mayfield

4:45 PM	787.4	Divalent cation driven liquid-liquid phase separation of disordered acidic proteins. J. Mayfield, University of California - San Diego
5:00 PM	787.3	Imaging mRNAs with corrected RNA stability. W. Li, Albert Einstein College of Medicine
5:15 PM	787.1	Detecting RNA dynamics in live mammalian cells with fluorescence lifetime-based sensors. E. Braselmann, Georgetown University
5:30 PM	789.5	The Effects of Tail Truncations of Pre-Messenger RNA Splicing Protein Dib1. V. McGrath, Trinity University

198 Protein synthesis and interactions

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Abdullah Hoter

4:45 PM	648.3	Biochemical Characterization of SARS-CoV-2 Spike RBD Mutations and Their Impact on ACE2 Receptor Binding. A. Hoter, University of Veterinary Medicine Hannover
5:00 PM	489.2	Predicting Protein Function and Orientation on a Gold Nanoparticle Surface Using a Residue-Based Affinity Scale. J. Xu, Mississippi State University
5:15 PM	651.1	AP Profiling: Resolving Co-Translational Protein Folding Pathways and Chaperone Interactions In Vivo. X. Chen, Johns Hopkins University
5:30 PM	649.18	Recognition and Cleavage of Human tRNA Methyltransferase TRMT1 by the SARS-CoV-2 Main Protease. A. D'Oliviera, University of Delaware

199 Chemical biology and drug discovery in acute and chronic disease

SPOTLIGHT SESSION

4:45 PM - 5:25 PM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Rachel Jones Lipinski

4:45 PM	796.10	Zinc-Chelating BET Bromodomain Inhibitors Selectively Accumulate and Affect Gene Expression in Pancreatic β-Cells. R. Jones Lipinski, Medical College of Wisconsin
5:05 PM	796.1	Design and Synthesis of Bi-aryl Methylated Lactam Derivatives to Inhibit the BRD7 Bromodomain Function in Prostate Cancer. S. Ordonez-Rubiano, Purdue University

200 New innovations in "omic" technology

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Martin Wühr

4:45 PM	662.12	Evidence for widespread cytoplasmic structuring into mesoscopic condensates. M. Wühr, Princeton University
5:00 PM	801.3	A Meta-transcriptomic Analysis of Complicated Diverticulitis Tissue: The Role of Xenobiotics in the Gut. B. McMullen, Juniata College
5:15 PM	504.1	Targeted Metabolomics Reveals Plasma Biomarkers and Metabolic Alterations of the Aging Process in Healthy Young and Older Adults. J. Patterson, Arizona State University
5:30 PM	504.3	Lipidomics identifies novel circulating markers of CVD risk in African American and Caucasian women. P. Gonzalez, University of Wisconsin-Madison

201 GPCR signaling

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Karina Dias Teixeira

4:45 PM	805.14	Novel GPR87/SDC-1 Complex Modulates Lacritin Rescue of Homeostasis. K. Dias Teixeira, University of Virginia
5:00 PM	805.7	Untangling Frizzled functions. K. Hollis, Van Andel Institute
5:15 PM	664.12	Proton-gated Coincidence Detection is a Common Feature of GPCR Signaling. D. Isom, University of Miami Miller School of Medicine
5:30 PM	664.15	A Model of Potassium-Assisted Olfactory Sensory Neuron Response to Odorant. M. Singletary, Auburn University College of Veterinary Medicine

202 Pathogen-host interactions

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Alfa Herrera

4:45 PM	669.7	The MCF Toxin of the Extracellular Pathogen Vibrio vulnificus is Activated by and Targets Host GTPases. A. Herrera, Northwestern University
5:00 PM	811.1	Nuclear Entry of DNA Tumor Viruses: Finding the LINC in Nuclear Transport. C. Spriggs, University of Michigan
5:15 PM	669.4	Nonstructural Protein 1 of SARS Coronavirus Interacts with Stress Granule Protein G3BP1 and Accumulates in the Stress Granule. A. Nag, USC Upstate
5:30 PM	811.3	Protease-Induced Excitation of Dorsal Root Ganglion Neurons in Response to Acute Perturbation of the Gut Microbiota is Associated with Visceral Hypersensitivity. C. Baker, Queen's University

203 Structure of proteins involved in signaling and lipid metabolism

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Aniruddha Panda

4:45 PM	518.9	A Quantitative Native Mass Spectrometry Platform for Deconstructing Hierarchical Organization of Membrane Proteins and Lipids. A. Panda, Yale School of Medicine
5:00 PM	819.9	Structure and Dynamics of Human Perilipin 3 Membrane Association. Y. Choi, Stony Brook University
5:15 PM	519.5	Auto-inhibitory interactions of Sec7, master regulator of the Golgi complex. B. Brownfield, Cornell University
5:30 PM	516.10	Trabecular Meshwork Cholesterol Levels Regulate Actin Polymerization and Tunneling Nanotubes. T. Wang, Department of Medical Neuroscience, Department of Ophthalmology, Indiana University School of Medicine

204 Innovative teaching strategies in the STEM classroom

SPOTLIGHT SESSION

4:45 PM - 5:45 PM PENNSYLVANIA CONVENTION CENTER, 126 B

CHAIR: Cassidy Terrell

4:45 PM	521.3	Connecting the Dots: Students' Mental Organization and Storage of Biochemistry Visual Literacy Skills. C. Terrell, University of Minnesota
5:00 PM	521.1	Teaching Collaboration Skills to Undergraduate Biochemistry and Chemistry Students. P. Mertz, St. Mary's College of Maryland
5:15 PM	682.11	Using autonomy to drive the development of students into budding scientists. D. Dries, Juniata College
5:30 PM	682.4	Using Student Movement to Improve Understanding of the Pyruvate Dehydrogenase Complex. M. Mullen Davis, Millersville University

209 ## The power of storytelling

WORKSHOP

6:00 PM - 7:30 PM PENNSYLVANIA CONVENTION CENTER, 120 C

Storytelling is an essential component of communication. It can be used to connect with a diverse audience and make challenging subjects more accessible. Mastering storytelling requires creative flexibility, dexterity with language and willingness to get personal. Learn how to incorporate yourself as a scientist into your science story in a way that strengthens your message without sacrificing scientific integrity. This interactive session will lead participants through hands-on storytelling training that is based on one of the modules from the ASBMB course The Art of Science Communication.

Presenters: Stuart Ravnik, UT Southwestern, Jelena Lucin, ASBMB Outreach and Education Coordinator

210 ## Success in scientific publishing workshop

WORKSHOP

6:00 PM - 7:30 PM PENNSYLVANIA CONVENTION CENTER, 120 A

Will my data stand the test of time? Is my writing clear, compelling and engaging? Will I be able to reach an audience that will give my research its greatest impact? These are questions authors ask themselves when preparing manuscripts for publication. The American Society for Biochemistry and Molecular Biology is home to the Journal of Biological Chemistry, the Journal of Lipid Research, and Molecular & Cellular Proteomics. In this 90-minute workshop, members of the society's publications staff will offer insights into the publication pipeline and provide you with tips on three essential topics: presenting data, writing well and sharing your work.

Presenters: Ken Farabaugh, Developmental Editor, Stephanie Paxson, Journal Marketing Associate

211 ## ASBMB women scientists networking event — The evolution of work–life integration in the time of COVID-19

SOCIETY EVENT

6:00 PM - 7:30 PM PHILADELPHIA MARRIOTT DOWNTOWN, GRAND BALLROOM E

CHAIR: Karen Allen

Integrating work and personal life is challenging and has been made even more so for women during the COVID-19 pandemic. The ASBMB Women in Biochemistry and Molecular Biology Committee is hosting its annual networking dinner and a panel discussion titled "The evolution of work–life Integration in the time of COVID-19." Lea Vacca Michel of the Rochester Institute of Technology, winner of the society's Early-Career Leadership Award, and Marlene Belfort of the University at Albany, winner of the Mid-Career Leadership Award, will be panelists. They will be joined by members at various career levels to discuss their experiences with integrating work and their personal lives during the pandemic. Attendees are encouraged to weigh in during the discussion.

212 ## Control of inflammation by dietary interventions

WORKSHOP

6:00 PM - 7:30 PM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Michael Sack

This workshop will explore how different dietary components and/or temporal dietary intake strategies play a role in modulating inflammation and disease pathophysiology. Explore how specific nutrients via diverse regulatory mechanisms — transcription, GPCR signaling, post-translational modification and metabolic signaling — alter immune cell responsiveness. Attendees will learn about integration of environmental cues with intracellular regulatory pathways to drive immune cell responsiveness. Who should attend: Scientists focusing on cardiometabolic risk, nutrient signaling, inflammation and effects of dietary interventions on health.

Presenters: Annet Kirabo, Vanderbilt University, Peter Crawford, University of Minnesota, Tiffany Powell-Wiley, NHLBI, NIH, Michael Sack, NHLBI, NIH

213

Approaches to teaching in the biosciences using different course modalities

WORKSHOP

6:00 PM - 7:30 PM PENNSYLVANIA CONVENTION CENTER, 126 A

SPONSORED BY: ASBMB EDUCATION AND PROFESSIONAL DEVELOPMENT COMMITTEE

CHAIR: Monica Rieth

Become familiar with new modes of instruction. Learn to work outside of your teaching comfort zone by incorporating new exercises and lessons that align with other teaching modalities. The content will include ways to incorporate new teaching modalities into biochemistry education both in the classroom and in the lab using examples and evidence-based practices reported in the current literature. Exercises and sample lessons will be implemented to help instructors and members/attendees adapt new techniques to their current practices. For example, a lesson on amino acids and protein structure may be taught in a lecture-style format and attendees would be asked to adapt this lesson to a flipped-style classroom or problem-based learning exercise. How would each person change the format/content using examples to illustrate these changes? Attendees will also be asked to identify and/or anticipate any advantages or disadvantages to changing to this new teaching modality. Such as increased/decreased student engagement. Attendees will learn about advances in classroom teaching and modern practices. They will become familiar with different teaching styles and learn how to incorporate new styles into their current classroom. Attendees will also develop a network community of educators who can help provide support.

Who should attend: Instructors teaching undergraduate- or graduate-level biochemistry courses or labs both for majors and nonmajors. Those interested in exploring different teaching styles and modalities in their courses.

214

Increasing diversity through master's degree programs

WORKSHOP

6:00 PM - 7:30 PM PENNSYLVANIA CONVENTION CENTER, 121 A

SPONSORED BY: ASBMB EDUCATION AND PROFESSIONAL DEVELOPMENT COMMITTEE

CHAIR: Bob Rose

Network with other programs promoting research-based masters degrees. We developed a research-based masters program in Biochemistry from an NSF S-STEM training grant to fund low-income students and increase diversity of associated departments.

Who should attend: Graduate faculty involved with STEM education.

217

ASBMB welcome reception sponsored by the ASBMB Minority Affairs Committee

SOCIETY EVENT

7:00 PM - 9:00 PM PHILADELPHIA MARRIOTT DOWNTOWN, GRAND BALLROOM H

ASBMB oral program

Monday
APRIL 4

909 ASBMB graduate student and postdoc travel awardee networking

SOCIETY EVENT

7:00 AM - 8:00 AM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 3

225 DeLano Award for Computational Biosciences

LECTURE

8:00 AM - 8:30 AM PENNSYLVANIA CONVENTION CENTER, TERRACE 4

8:00 AM	225.1	Introduction
8:05 AM	225.2	Hyperbolic Geometry in Biological Systems. T. Sharpee, Salk Institute for Biological Studies

232 Avanti Award in Lipids

LECTURE

8:30 AM - 9:00 AM PENNSYLVANIA CONVENTION CENTER, TERRACE 4

8:30 AM	232.1	Introduction
8:35 AM	232.2	PI 3-Kinase signaling: A journey in three AKTs. A. Toker, Beth Israel Deaconess Medical Center

260 Complex metabolic interactions

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Stavroula Hatzios

9:15 AM	260.1	Metabolic Adaptation to Oxidative Stress at the Host-Microbe Interface. S. Hatzios, Yale University
9:45 AM	260.2	Deconvoluting host-gut microbiota co-metabolism. P. Chang, Cornell University
10:15 AM	260.3	The tiny pharmacists within: How the microbiome impacts the treatment of human disease. P. Turnbaugh, UCSF
10:45 AM	260.4	Metabolic outliers in human disease. R. DeBerardinis, HHMI, UTSW

256 Epigenetic regulation of metabolism: from bench to bedside

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Sarah Hall

9:15 AM	256.1	Intergenerational inheritance of altered metabolism phenotypes after early-life stress in caenorhabditis elegans. S. Hall, Syracuse University
9:45 AM	256.2	Epigenetic Mediators of Risk for Metabolic Disease Across Generations. M. Patti, Harvard Medical School
10:15 AM	256.3	Early-life stress and epigenomic regulation of behavior. J. Balouek, Princeton University
10:45 AM	256.4	Live fast, die young: the role of epigenetics in stress and aging. A. Zannas, University of North Carolina

252 Frontiers in enzymology

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Tadhg Begley

9:15 AM	252.1	Versatile C-Methyltransferases of natural product biosynthesis. J. Smith, University of Michigan
9:45 AM	252.2	Correlated motions in enzymes. N. Ando, Cornell University
10:15 AM	252.3	Biosynthesis and Function of the Nickel-Pincer Nucleotide Cofactor. R. Hausinger, Michigan State University
10:45 AM	252.4	Pyridoxal phosphate-dependent reactions in natural products biosynthesis. K. Ryan, University of British Columbia

253 Glycans in cell biology

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Susan Bellis

9:15 AM	253.2	Hypersialylation of Tumor Cells Promotes Pancreatic Cancer Progression. S. Bellis, University of Alabama at Birmingham
9:45 AM	253.1	SLC3A2 N-glycosylation and alternate evolutionary trajectories for amino acid metabolism. J. Dennis, Lunenfeld Tanenbaum Research Institute
10:15 AM	253.3	Modeling the mucinous glycocalyx to unravel receptor pattern recognition by influenza A viruses. K. Godula, University of California, San Diego
10:45 AM	253.4	Cell Surface Glycan Engineering to Examine Receptor Specificities of Influenza and Other Viruses. G. Boons, University of Georgia

259 New approaches for global cell signaling

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Vincent Tagliabracci

9:15 AM	259.4	A high dimensional map of phosphorylation-dependent signaling in budding yeast. J. Villen, Department of Genome Sciences, University of Washington
9:45 AM	259.1	CRISPR sensors for signaling. S. Angers, University of Toronto
10:15 AM	259.2	Proximity-dependent sensors for signaling. A. Gingras, Lunenfeld-Tanenbaum Research Institute
10:45 AM	259.3	Proteome-scale amino-acid resolution footprinting of protein-binding sites in the intrinsically disordered regions. Y. Ivarsson, Uppsala University

255 Noncoding RNA regulation of chromatin states and transcription

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Chuan He

9:15 AM	255.1	m6A in the action of regulating the regulators. K. Liu, University of Pennsylvania
9:45 AM	255.2	RNA in the loop. J. Lee, Massachusetts General Hospital
10:15 AM	255.3	RNA Modifiers Multitasking On Chromatin. B. Xhemalçe, University of Texas at Austin
10:45 AM	255.4	RNA methylation in gene expression regulation. C. He, University of Chicago

261 Novel approaches to understand membrane composition and structure

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 126 A

CHAIR: Lois Weisman

9:15 AM	261.1	Chemical Tools for Understanding Phosphatidic Acid Signaling. J. Baskin, Cornell University
9:45 AM	261.2	Control of the Cellular Lipid Landscape by Inositol Lipids. T. Balla, NICHD, National Institutes of Health
10:15 AM	261.3	Volume electron microscopy analysis reveals a new type of membrane junction required for mixing of parental genomes after fertilization. O. Cohen-Fix, NIDDK, NIH
10:45 AM	261.5	A novel homeostatic mechanism tunes PIP2-dependent signaling at the PM. G. Hammond, University of Pittsburgh School of Medicine

257 Organelles and cellular homeostasis

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Elizabeth Vierling

9:15 AM	257.1	Mechanisms of membrane protein sorting. S. Shao, Harvard Medical School
9:45 AM	257.2	Peroxisomal Quality Control in Arabidopsis. B. Bartel, Rice University
10:15 AM	257.3	Mitochondrial-Derived Compartments Protect Cells From Nutrient Stress. A. Hughes, University of Utah
10:45 AM	257.4	Spatiotemporal regulation of mitochondrial genome synthesis and segregation in the soma. S. Lewis, University of California, Berkeley

254 Phase transitions of structured complexes and cellular machinery

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Edward Lemke

9:15 AM	254.1	**Building the microtubule cytoskeleton via phase transitions.** S. Petry, Princeton University
9:45 AM	653.1	**Selective Transport in the Nuclear Pore Complex.** D. Cowburn, Albert Einstein College of Medicine
10:15 AM	254.2	**The role of phase separation in oncogenesis by fusion oncoproteins.** R. Kriwacki, St. Jude Children's Research Hospital
10:45 AM	254.3	**Decoding molecular plasticity of the dark proteome.** E. Lemke, JGU & IMB Mainz

258 Strategies for assessment in higher education

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 126 B

CHAIR: Victoria Del Gaizo Moore

9:15 AM	258.1	**Peer Collaboration and Review: A Guide to Iterative Improvement in Learning.** D. Bernstein, University of Kansas
9:55 AM	258.2	**What makes a competitive applicant? Assessing students for graduate/ professional school applications.** E. Sayer, University of Nebraska - Lincoln
10:35 AM	258.3	**Building ICABL: An Inclusive Community for the Assessment of Biochemistry and Molecular Biology Learning.** V. Moore, Elon University

272 ASBMB Meet the Experts

SOCIETY EVENT

11:30 AM - 12:45 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

Continue the conversation with leading experts from symposia and award lectures in the ASBMB Lounge located across from ASBMB society booth #1739 in the Exhibit Hall.

277 Building community through ASBMB Student Chapters

SOCIETY EVENT

1:00 PM - 2:00 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

The ASBMB Student Chapters is devoted to building a national community of undergraduate students and faculty members for the advancement of biochemistry and molecular biology research, education and science outreach. Our mission is to provide networking and career-development opportunities at regional and national levels, access to research and science outreach, as well as grants and awards to facilitate these aims. Join us to learn how to build and maintain an active chapter. Network with current faculty advisers and student members as they share their chapter activities. This event will take place in the ASBMB lounge across from ASBMB booth #1739, in the Exhibit Hall.

302 Earl and Thressa Stadtman Distinguished Scientist Award

LECTURE

2:00 PM - 2:30 PM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

2:00 PM	302.1	**Introduction**
2:05 PM	302.2	**Telomerase holoenzymes.** K. Collins, University of California

305 ASBMB Connect

SOCIETY EVENT

2:00 PM - 4:00 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

Meet with ASBMB staff, committee and journal editorial members. Opportunity to learn more about what the Society offers and to discuss your challenges and how the Society can better serve our members. This program will be in the ASBMB lounge across from ASBMB booth #1739, in the Exhibit Hall.

306 Mildred Cohn Award in Biological Chemistry

LECTURE

2:30 PM - 3:00 PM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

2:30 PM	306.1	Introduction
2:35 PM	306.2	Flavivirus NS1: Structure and Function of an Enigmatic Virulence Factor. J. Smith, University of Michigan

315 Allostery and enzyme function

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Gisele Andree

3:15 PM	656.3	The Multifaceted Subunit Interface of Malate Dehydrogenase. M. Keene, University of San Diego
3:30 PM	656.10	Mechanism of Activation of SgrAI via Enzyme Filamentation and Mechanism of DNA Sequence Specificity Expansion. N. Horton, University of Arizona
3:45 PM	656.2	Mechanistic basis for the allosteric activation of mitochondrial glutaminase C, a key driver of glutamine metabolism in cancer cells. T. Nguyen, Cornell University
4:00 PM	497.10	Structural Investigation of Allosteric Regulation in Class III Ribonucleotide Reductases. G. Andree, Massachusetts Institute of Technology

318 Antibacterial targets and antibiotic resistance

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Josiah Morrison

3:15 PM	512.7	Lacritin Bactericidal Peptide N-104 Targeting of Inner Membrane Transporters FeoB and PotH (SpuG) Individually Absent in N-104 Resistant Strains of Human Opportunistic Pathogen, P. aeruginosa PA14. J. Morrison, University of Rhode Island
3:30 PM	812.3	Tobramycin Adaptation Alters the Antibiotic Susceptibility of Pseudomonas aeruginosa Quorum Sensing-Null Mutants. K. Townsend, University of Kansas
3:45 PM	512.4	Elucidating the antibiotic sensing mechanism of VanB vancomycin-resistant Enterococci. P. Rotsides, Drexel University College of Medicine
4:00 PM	813.7	Lacritin Bactericidal Peptide N-104 Targeting of Inner Membrane Transporters FeoB and PotH (SpuG) Individually Absent in N-104 Resistant Strains of Human Opportunistic Pathogen, P. aeruginosa PA14. M. Sharifian Gh., University of Virginia

317 ## Cancer signaling and therapeutics

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Laura Mendez-Santacruz

3:15 PM	809.16	The role of NMDA receptors subunits in the progression of inflammatory breast cancer (IBC). L. Mendez-Santacruz, University of Puerto Rico
3:30 PM	667.17	Nitrated Hsp90 Supports Glioblastoma Multiforme Cell Survival and Migration. K. Nguyen, Oregon State University
3:45 PM	509.10	Autophagy is Disrupted in the Livers of Obese Mice Exposed to Asparaginase. B. Zalma, Rutgers University
4:00 PM	509.5	The Sulfiredoxin-Peroxiredoxin axis promotes urethane-induced lung adenocarcinoma through the regulation of the tumor microenvironment. Y. Hao, University of Kentucky

316 ## Chemical biology

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Weizhi Yu

3:15 PM	657.8	Microfluidic Fabrication and Characterization of Radiopaque Barium Sulfate Polyethylene Glycol-Based Hydrogel Microspheres. E. Dharmesh, Saint Louis University
3:30 PM	796.4	Acidity and nucleophilic reactivity of persulfides. D. Benchoam, Facultad de Ciencias, Universidad de la República, Montevideo, Uruguay
3:45 PM	659.4	Activity-based chemoproteomics reveals targets of phospholipase D-derived phosphatidyl ethanol lipids. W. Yu, Cornell University
4:00 PM	796.8	Scanning-Free functional Fluorescence Microscopy Imaging Toward Spatial Mapping of Biomolecular Information in Live Cell. S. Oasa, Karolinska Institutet

313 ## DNA polymerases, telomerase, replicases and replisomes

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Melissa Mefford

3:15 PM	483.7	Deletion of Ch. IV Telomeres via Genetic Engineering of a Circular Chromosome in the Budding Yeast S. cerevisiae. M. Mefford, Morehead State University
3:30 PM	483.3	Structures of LIG1 engaging with mutagenic mismatches inserted by polβ in base excision repair. M. Caglayan, University of Florida
3:45 PM	483.5	Processing of DNA Clamp Loader Subunit DnaX Is Important in the Absence of Caulobacter Cell Division Inhibitors. T. Tashjian, University of Massachusetts Amherst
4:00 PM	642.1	Identifying Cellular and Viral Factor Recruitment to Herpes Simplex Virus Type 1 Replication Forks. J. Packard, Duquesne University

320 Lipid homeostasis

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Joanna Kwiatek

3:15 PM	677.1	Phosphatidic Acid Mediates the Nem1-Spo7/Pah1 Phosphatase Cascade in Saccharomyces cerevisiae. J. Kwiatek, Rutgers University
3:30 PM	818.8	Citric acid cycle metabolites regulate phosphatidate phosphatase activity from the oleaginous yeast Yarrowia lipolytica. S. Pasham, Alabama A&M University
3:45 PM	678.7	S1P controls endothelial sphingolipid homeostasis via ORMDL. L. Sasset, Weill Cornell Medicine
4:00 PM	518.4	Dishevelled localization and function are differentially regulated by structurally distinct sterols. S. Sengupta, Sanford Research

319 Mitochondrial metabolism

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Yizhi Sun

3:15 PM	515.4	SARM1 NAD Hydrolase Deficiency Normalizes Fibrosis and Ameliorates Cardiac Dysfunction in Diabetic Hearts. C. Lee, Oklahoma Medical Research Foundation
3:35 PM	513.3	Mitochondrial Fission is Essential to Maintain Cristae Morphology and Bioenergetics. G. Robertson, Vanderbilt University
3:55 PM	513.2	Role of Mitochondrial TNAP in Thermogenesis and Obesity. Y. Sun, Dana-Farber Cancer Institute

314 Protein modifications

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Alison DeHaas

3:15 PM	792.7	SUMO 2 the rescue: how SUMO2 regulates the mitochondria via Drp1 modification. A. DeHaas, Johns Hopkins University
3:30 PM	790.7	Coilin Modulates Nuclear Organization by Promoting Protein SUMOylation. K. Lett, University of Mississippi Medical Center
3:45 PM	648.13	Dissecting The Structural Contribution of The Cofilin N-Terminus to Actin Filament Severing and Phosphorylation by LIMK. J. Sexton, Yale University
4:00 PM	641.1	Phenotypic Changes Produced by Endogenous DNA Damage in Yeast Mutants Deficient in Recombination and Base Excision Repair. A. Berry, Texas State University

321 Teaching strategies and lessons learned during COVID-19

SPOTLIGHT SESSION

3:15 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 126 B

CHAIR: Arthur Sikora

3:15 PM	521.6	You gotta work, BASIL! Reimagining an established CURE to provide high-quality digital learning experiences that are intentionally equitable, inclusive and accessible for all students. A. Sikora, Nova Southeastern University
3:30 PM	681.6	Moving biochemistry and molecular biology courses online in times of disruption. K. Procko, The University of Texas at Austin
3:45 PM	682.9	A Tale of Two Semesters: Flipped Biochemistry Curriculum in the Time of COVID. K. Miller, University of Mount Union
4:00 PM	684.3	Providing effective feedback with soaring class sizes: It's still possible. O. Hart, Purdue University

312 Exciting Biological Insights Revealed by Proteomics: a Molecular & Cellular Proteomics Presentation

SPOTLIGHT SESSION

3:15 PM - 4:30 PM PENNSYLVANIA CONVENTION CENTER, 126 A

CHAIR: Pierre Thibault

3:15 PM	312.1	Introduction
3:30 PM	312.2	Phosphorylated peptides as cancer neoantigens. V. Engelhard, University of Virginia School of Medicine
3:50 PM	312.3	Multi-omic view on HLA class I and class II presentation in Lung adenocarcinoma. S. Klaeger, Broad Institute
4:10 PM	312.4	Antigen discovery for development of personalized cancer immunotherapy. Michal Bassani-Sternberg, UNIL/CHUV Ludwig Cancer Research Center

311 Alice and CC Wang Award in Molecular Parasitology Symposium

LECTURE

3:15 PM - 5:10 PM PENNSYLVANIA CONVENTION CENTER, 119 AB

3:15 PM	311.1	Introduction
3:20 PM	311.2	How one eukaryote invades and co-opts the cells of another: the story of the truly audacious toxoplasma gondii. J. Boothroyd, Stanford University
3:50 PM	311.3	Cryo-ET reveals structures and potential regulatory mechanisms of the rhoptry secretion system in apicomplexan parasites. Y. Chang, University of Pennsylvania
4:15 PM	311.4	Chemical cartography of host-parasite-microbiome interactions in Chagas disease. L. McCall, University of Oklahoma
4:40 PM	311.5	Finding the determinants of vacuole-autonomous parasite clearance using Spatially Targeted Optical Micro Proteomics. S. Ewald, University of Virginia

342 Apopotosis

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Lauren Pope

4:30 PM	808.12	The Role of Monounsaturated Fatty Acids in Ferroptosis. L. Pope, Stanford University
4:45 PM	808.5	Effects of stimulants and HIV Proteins on Pyroptosis and Apoptosis Pathways in Human Brain Microvascular Endothelial (hBMVEC). J. Ikedife, New Jersey City University
5:00 PM	808.3	A Novel Cell Death Mechanism Involving the Sphingosine-to-Glycerophospholipid Pathway. L. Leak, Stanford University
5:15 PM	808.7	Hypoxia Re-Oxygenation Modelling Using Cancer Cells Expressing Cell Cycle and Cell Death Probes to Understand the Dynamics of Resistance Mechanisms. S. Tiwari, Rajiv Gandhi Centre For Biotechnology Thiruvananthapuram, Kerala, India

343 Cancer metabolism

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Sucheta Telang

4:30 PM	514.1	Targeting GCN2 Regulation of Amino Acid Homeostasis in Prostate Cancer. R. Cordova, Indiana University School of Medicine
4:45 PM	815.2	Increased Fatty Acid Synthesis and Catabolism Supports Metastatic Breast Cancer Cell Migration. C. Andolino, Purdue University
5:00 PM	674.6	Targeting Resistance in Medulloblastoma. S. Telang, University of Louisville
5:15 PM	514.5	Enhanced Metabolism and Altered Paracrine Signaling in Glioblastoma Following Cytomegalovirus Infection. M. Harrison, Tulane University

340 Chemical biology and drug discovery in infectious disease

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Anand Balakrishnan

4:30 PM	500.1	Molecular Basis for Antiviral Action of EDP-235: A Potent and Selective SARS-CoV-2 3CLpro Inhibitor for the Treatment of Covid 19. A. Balakrishnan, Enanta Pharmaceuticals, Inc
4:45 PM	658.6	Efficient Incorporation and Template-Dependent Polymerase Inhibition are Major Determinants for the Broad-Spectrum Antiviral Activity of Remdesivir. C. Gordon, Department of Medical Microbiology and Immunology, University of Alberta
5:00 PM	657.11	Modulation of lysosomal function as a therapeutic approach for coronaviral infections. T. Lear, University of Pittsburgh
5:15 PM	487.7	Antisense Molecules Designed to Target SARS-CoV-2 are Nontoxic to the Host in a Murine Model. C. McCollum, University of Colorado Boulder

337 DNA recombination, structure and topology

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 126 B

CHAIR: Nick Rhind

4:30 PM	641.4	Investigating the function of a unique DNA ligase (LIGK) in bdelloid rotifers. A. Schurko, Hendrix College
4:45 PM	641.2	Development of New Assays for the Simultaneous Measurement of DNA Double-Strand Break Repair by Multiple Pathways. D. Valdez-Oranday, Texas State University
5:00 PM	483.6	Single-Molecule Analysis of in vivo DNA Replication Origin Licensing Stoichiometry. N. Rhind, UMass Med School
5:15 PM	483.4	Unique DNA Polymerase kappa Interactome Suggests Novel Cellular Functions. S. Paul, Penn State University College of Medicine

338 Epigenetic modifications of DNA and RNA

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Jihyun Jang

4:30 PM	644.5	Activity-Based Profiling of RNA Modifying Enzymes. R. Kleiner, Princeton University
4:45 PM	644.4	DNA Methylation Underlies the Long-Term Association Between Periodontitis and Atherosclerotic Cardiovascular Disease. M. Febbraio, University of Alberta
5:00 PM	644.1	Epicardial histone deacetylase 3 promotes myocardial growth through a novel microRNA pathway. J. Jang, University of Maryland
5:15 PM	644.3	The Impact of Sorghum Polyphenols on DNA Methylation and Signaling Pathways in Colon Cancer. Z. Kamagate, Towson University

345 Lipid metabolism functions

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Gage Stuttgen

4:30 PM	818.11	Loss of ATAD3A contributes to NAFLD through the accumulation of lipids and damaged mitochondria. L. Chen, University of Southern California
4:45 PM	517.3	Pro-survival lipid metabolism activates intracellular complement signaling to induce inflammasome-mediated tumor metastasis. A. Janneh, Medical University of South Carolina
5:00 PM	517.9	Novel Roles of FFAR4 in Macrophage Foam Cell Formation. G. Stuttgen, Medical College of Wisconsin
5:15 PM	517.2	Itaconate is a negative regulator of hepatic lipid metabolism during sepsis. R. Mainali, Wake Forest School of Medicine

344 Membrane traffick and dynamics

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Michael Hanna

4:30 PM	677.9	**SHIP164 is a Chorein Motif Lipid Transfer Protein that Controls Endosome-Golgi Membrane Traffic.** M. Hanna, Department of Neuroscience, Yale University School of Medicine
4:45 PM	677.6	**The Intracellular Cholesterol Pool in Steroidogenic Cells Plays a Role in Autophagy, Basal Steroidogenesis and Mitochondrial Dynamics.** G. Bassi, University of Manitoba
5:00 PM	679.13	**The Effects of Point Mutations on the Dimerization Domain of Ebola Virus Protein VP40.** J. Conarty, Purdue University
5:15 PM	519.7	**Structural basis for specific activation of the Rab11 GTPase by the TRAPPII complex.** S. Bagde, Cornell University

339 RNA binding proteins

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Rosamaria Moreno

4:30 PM	487.2	**Phosphorylation-specific recruitment of human SCAF6 to RNA polymerase II during transcription regulation.** R. Moreno, University of Texas-Austin
4:45 PM	646.2	**Computational and Biophysical Analysis of RNA/Protein Complexes in Histone mRNA Degradation.** P. Lackey, Westminster College
5:00 PM	646.4	**Asymmetric RNA Egress Site in Expanded RNA Virus by Cryo-EM and HDXMS.** S. Braet, The Pennsylvania State University
5:15 PM	647.9	**The Discovery of Antivirals and Targets for SARS-CoV-2 and EV-A71.** C. Haddad, Case Western Reserve University

341 Ubiquitin signaling

SPOTLIGHT SESSION

4:30 PM - 5:30 PM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Emilia Galperin

4:30 PM	505.2	**Proteins of the ubiquitin system in the Shoc2 - ERK1/2 signaling axis and Noonan-like syndrome with loose anagen hair (NSLAH) RASopathy.** E. Galperin, University of Kentucky
4:50 PM	505.9	**PLEKHA5 Regulates Mitotic Progression by Promoting APC/C Localization to Microtubules.** X. Cao, Cornell University
5:10 PM	492.2	**Extending the Catalytic HECT Domain Boundaries for the HECT E3 Ubiquitin Ligase HACE1 Increases Solubility and Enzymatic Activity.** E. Kane, Clark University. .

355 ## Becoming the boss of your career

WORKSHOP

5:45 PM - 7:15 PM PENNSYLVANIA CONVENTION CENTER, 120 B

SPONSORED BY: ASBMB EDUCATION AND PROFESSIONAL DEVELOPMENT COMMITTEE

CHAIR: Erica Gobrogge

Establishing career goals, navigating challenging conversations associated with those goals and working outside the laboratory to successfully advance your career can be challenging for scientists at all career stages. In addition, these conversations can be particularly difficult for international scientists, whose cultural norms may be different than those commonly found in the U.S. Participants will develop their own goals, draft plans for achieving them and practice navigating conversations they may encounter while advocating for those goals. The ultimate goal of this workshop is to encourage, support and empower scientists to take charge of their careers.
Who should attend: This workshop primarily will be of interest to undergraduate students, graduate students and postdoctoral researchers, but scientists at career stages are welcome.

354 ## Pedagogical lessons learned during the time of COVID-19

WORKSHOP

5:45 PM - 7:15 PM PENNSYLVANIA CONVENTION CENTER, 120 A

SPONSORED BY: ASBMB EDUCATION AND PROFESSIONAL DEVELOPMENT COMMITTEE

CHAIR: Phillip Ortiz

This workshop will include presentation and discussions of pedagogical approaches used during the shift to teaching at a distance during the COVID-induced closing of some campuses. As we often learn more from failure than success, this will include approaches that worked, as well as those that didn't. "Many people simply moved their teaching to Zoom, i.e., they did their standard teaching, but did it in front of a web-cam and broadcast it to their students. Others took more innovative approaches to the teaching that they had done in their classrooms." Perhaps more importantly, the shifts in lab-based instruction caused by students needing to work from non-campus locations were more dramatic.
Who should attend: Primarily BMB educators, but also all educators at the undergraduate and graduate levels, including new and established faculty members at all types of colleges and universities, teaching assistants and postdoctoral researchers who are interested in careers at primarily undergraduate institutions. Undergraduate and graduate students also are welcome attend so that they may share their insights and experiences during the Q&A and open discussion portions of the session.
Presenters: Phillip Ortiz, State University of New York, Glenda Gillaspy, Virginia Tech, Kristen Procko, University of Texas at Austin, Rou-Jia Sung, Carleton College, Kristy Wilson, Marian University

353 RNA export at the nuclear pore complex

WORKSHOP

5:45 PM - 7:15 PM PENNSYLVANIA CONVENTION CENTER, 121A

CHAIR: Mary Dasso

This workshop seeks to bring together different emerging approaches and model systems that are being applied to untangle the sequence and logic of RNA processing and export events. The focus of this Workshop will be on nuclear pore proteins as guardians of mRNA export and their role in the selectivity of RNA export in health and disease. The workshop will bring together laboratories using cryo-EM, X-ray crystallography, biochemistry, nuclear microinjection, genetics, cell biology, CRISPR/Cas9-AID gene editing, live imaging, viral and animal models to elucidate interactions between nucleoporins, mRNA, and RNA-accessory proteins at the NPC. Attendees will learn about cutting-edge tools and techniques and their application to the process of mRNA export. They will learn up-to-date progress, unresolved questions in the field and meet world class experts.

Who should attend: This workshop will appeal to a diverse group of scientists (students, postdoctoral researchers and group leaders) who are interested in RNA processing and export, the regulation of gene expression, nuclear trafficking and nucleoporins.

Presenters: Mary Dasso, Division of Molecular and Cellular Biology, NICHD, NIH, Vasilisa Aksenova, NIH, NICHD, Yi Ren, Vanderbilt University, Beatriz Fontoura, UT Southwestern, Katherine Borden, Universite de Montreal, Alexander F. Palazzo, University of Toronto, Canada

352 Transforming scientific research into equitable outreach

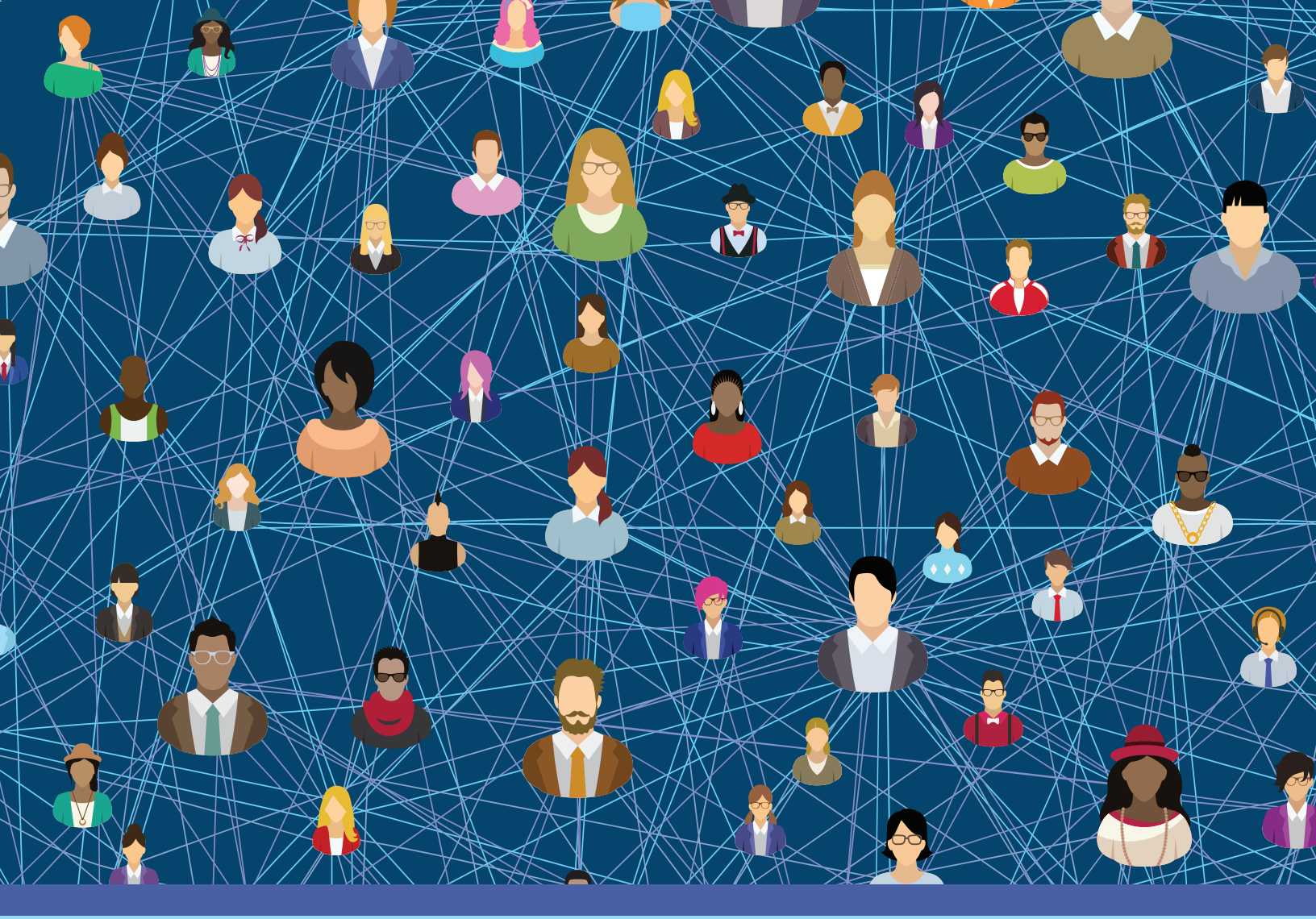
WORKSHOP

5:45 PM - 7:15 PM PENNSYLVANIA CONVENTION CENTER, 120 C

SPONSORED BY: ASBMB SCIENCE OUTREACH AND COMMUNICATIONS COMMITTEE

CHAIR: Chelsey Spriggs

How do you transform your passion for science into equitable outreach? This interactive session will cover the importance of science outreach and its impacts on enhancing diversity, equity and inclusion within the biomedical science research workforce. Chelsey Spriggs, co-founder of Black in Microbiology (#BlackInMicro) and a member of the first cohort of the ASBMB MOSAIC program, will share her journey as a role model for underrepresented students interested in biological research. She will describe how she has engaged in outreach and mentorship and how, through her work as a board member of the Black in Microbiologists Association, she aims to enhance the visibility of Black scientists in the field. Be ready to have a thoughtful discussion with your peers and brainstorm ways to use science outreach as a vehicle to equity and inclusion.



Connect with colleagues at an ASBMB meeting

The ASBMB organizes virtual and in-person events that cover scientific research, educational best practices, the funding environment and more.

Upcoming ASBMB events and conferences

O-GlcNAc regulation of cellular physiology and pathophysiology
July 7–10, 2022 | Athens, Ga.

Evolution and core processes in gene expression
July 21–24, 2022 | Kansas City, Mo.

Mass spectrometry in the health and life sciences
Aug. 14–18, 2022 | Cambridge, Mass.

The interplay between epigenetic regulation and genome stability
Sept. 28–Oct. 2, 2022 | Seattle, Wash.

Transcriptional regulation: Chromatin and RNA polymerase II
Sept. 29–Oct. 2, 2022 | Snowbird, Utah

Explore all upcoming events at asbmb.org/meetings-events.

ASBMB
American Society for Biochemistry and Molecular Biology

ASBMB oral program

Tuesday
APRIL 5

363 Ruth Kirschstein Diversity in Science Award

LECTURE

8:00 AM - 8:30 AM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

8:00 AM	363.1	**Introduction**
8:05 AM	363.2	**Beyond Diversity: Building a Culture of Inclusion in Science.** T. Johnson, University of California, Los Angeles

372 Bert and Natalie Vallee Award in Biomedical Science

LECTURE

8:30 AM - 9:00 AM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

8:30 AM	372.1	**Introduction**
8:35 AM	372.2	**Tissue stem cells: survival of the fittest.** E. Fuchs, Rockefeller University, HHMI

396 Bringing the dead to life: pseudoenzymes

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Anne-Claude Gingras

9:15 AM	396.1	**Catalytic degradation in pseudoenzymes.** P. Eyers, University of Liverpool
9:45 AM	396.2	**Protein Tyrosine Pseudophosphatase Signalling Mechanisms.** H. Sharpe, Babraham Institute
10:15 AM	396.3	**New light on an old problem — molecular basis for glycogen synthase activity regulation.** E. Zeqiraj, University of Leeds
10:45 AM	396.4	**Defining pseudoenzymes in glycosylation pathways.** N. Kannan, University of Georgia

398 Membrane dynamics in trafficking and signaling

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 126 A

CHAIR: Tamas Balla

9:15 AM	398.2	**A phosphoinositide cascade regulates a receptor recycling pathway.** L. Weisman, University of Michigan
9:45 AM	398.1	**Novel mechanisms in phosphoinositide turnover.** R. Padinjat, National Centre for Biological Sciences
10:15 AM	398.3	**Regulation of COPII-mediated protein transport.** A. Audhya, University of Wisconsin-Madison
10:45 AM	398.4	**Exosomes as Key Regulators of Neutrophil Chemotaxis.** C. Parent, University of Michigan

397 Metabolic mechanisms

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Scott Dixon

9:15 AM	397.1	Lipid Metabolism and Ferroptosis. S. Dixon, Stanford University
9:45 AM	397.2	Too much and never enough: Synthetic excess and metabolic inefficiency of aneuploidy in tumorigenesis. E. Watson, Brigham and Women's Hospital
10:15 AM	397.3	Uncovering conditional vulnerabilities in human cancer cells. J. Cantor, Morgridge Institute for Research (University of Wisconsin-Madison)
10:45 AM	397.4	The genetics of tumor suppression by p53. M. Murphy, The Wistar Institute

393 New approaches to visualize nucleic acids

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Timothy Stasevich

9:15 AM	393.1	New Technologies to Visualize Gene Expression with Single Molecule Resolution Live. T. Stasevich, Colorado State University
9:45 AM	393.2	Domain stacking enables a limb enhancer to act across multiple TAD boundaries. A. Boettiger, Stanford University
10:15 AM	393.3	3D in situ RNA sequencing. X. Wang, Broad Institute/MIT
10:45 AM	393.4	Repetitive genome structure-function in neurological disease. J. Phillis-Cremins, University of Pennsylvania

395 Organizing the cytoplasm during stress

SYMPOSIUM

9:15 AM - 11:00 AM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Stephanie Moon

9:15 AM	395.2	Regulation of Stress Granule Dynamicity by Valosin-Containing Protein. S. Moon, University of Michigan
9:50 AM	395.3	Ubiquitin and the Control of Translation During Oxidative Stress. G. Silva, Duke University
10:25 AM	395.4	The interconnected dynamics of ribonucleoprotein condensates and the endoplasmic reticulum. J. Lee, Baylor College of Medicine

392 Physiological and pathological phase transitions of disordered proteins

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Tanja Mittag

9:15 AM	392.1	Phase behavior of intrinsically disordered prion-like domains. T. Mittag, St. Jude Children's Research Hospital
9:55 AM	392.2	Liquid-liquid phase separation modulated by post-translational modifications and its implications for gene regulation. T. Kim, Hospital for Sick Children
10:35 AM	392.3	Polyubiquitin effects on phase transitions of shuttle protein UBQLN2. C. Castaneda, Syracuse University

391 Physiological impact of glycans in tissue homeostasis and disease – focus on cell-ECM interactions

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Valerie Weaver

9:15 AM	391.1	**The glycocalyx in tumor progression and metastasis.** V. Weaver, University of California
9:45 AM	391.2	**The Heparanase/Syndecan-1 Axis in Cancer Progression.** R. Sanderson, University of Alabama at Birmingham
10:15 AM	391.3	**Reprogramming T cells to target glycans and overcome glycan-mediated immunosuppression for cancer therapy.** A. Posey, Jr., University of Pennsylvania Perelman School of Medicine
10:45 AM	391.4	**Orchestrated Intragranular Restructuring of Mucins During Secretory Granule Maturation.** K. Ten Hagen, NIDCR/NIH

390 Radical SAM enzymology

SYMPOSIUM

9:15 AM - 11:15 AM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Tadhg Begley

9:15 AM	390.1	**Radical SAM Enzymes and the Unexplored Chemistry of RiPP Biosynthesis.** D. Mitchell, University of Illinois Urbana-Champaign
9:45 AM	390.2	**The biosynthesis of lipoic acid: A saga of death, destruction, and rebirth.** S. Booker, Penn State University
10:15 AM	390.3	**Unraveling the secrets of radical SAM mechanisms.** J. Broderick, Montana State University
10:45 AM	390.4	**How do aerobic organisms solve the oxygen sensitivity problem of [4Fe-4S] in radical SAM enzymes?** H. Lin, Howard Hughes Medical Institute; Cornell University

394 Translational epigenetics: the apple doesn't fall too far from the tree

SYMPOSIUM

9:15 AM - 11:45 AM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Patrick McGowan

9:15 AM	394.1	**Programmed epigenetic risk: Can stress exposures in utero predispose infants to obesity and metabolic diseases?.** K. Boyle, University of Colorado Anschutz Medical Campus
9:45 AM	394.2	**The role of maternal factors in epigenetic programming of neurodevelopment.** P. McGowan, University of Toronto.
10:15 AM	394.3	**Epigenetic marks identify asthma susceptibility in African Americans.** I. Yang, University of Colorado Anschutz Medical Campus
10:45 AM	394.4	**Chronic stress, omics, and asthma.** J. Celedon, University of Pittsburgh

403 ASBMB Meet the Experts

SOCIETY EVENT

11:30 AM - 12:45 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

Continue the conversation with leading experts from symposia and award lectures in the ASBMB Lounge located across from ASBMB society booth #1739 in the Exhibit Hall.

410 ## ASBMB Connect

SOCIETY EVENT

1:00 PM - 4:00 PM PENNSYLVANIA CONVENTION CENTER, EXHIBIT/POSTER HALL A-B

Meet with ASBMB staff, committee and journal editorial members. Opportunity to learn more about what the Society offers and to discuss your challenges and how the Society can better serve our members. This program will be in the ASBMB lounge across from ASBMB booth #1739, in the Exhibit Hall.

423 ## ASBMB Young Investigator Award

LECTURE

2:00 PM - 2:30 PM PENNSYLVANIA CONVENTION CENTER, TERRACE BALLROOM 4

2:00 PM	423.1	**Introduction**
2:05 PM	423.2	**Chromatin-based modulations underlying gene regulation and pathogenesis.** G. Wang, University of North Carolina

433 ## Thermodynamics in the everyday life of biologists

WORKSHOP

2:30 PM - 3:30 PM PENNSYLVANIA CONVENTION CENTER, 123

CHAIR: Assen Marintchev

This workshop will introduce the concepts of thermodynamic coupling and binding kinetics in the context of biochemical experiments, with emphasis on practical applications and common mistakes. Learn how to properly plan, perform, and analyze binding experiments and avoid common mistakes: 1) How to use thermodynamic coupling to indirectly calculate a binding Kd from the Kd's of coupled interactions, if direct determination is impossible or difficult, 2) How to compare binding constants to determine whether they are mutually consistent, 3) How to determine whether and when two or more molecules bind to each other in vivo, 4) How to quantitatively evaluate experimental binding constants: what they mean for the underlying biological process, whether they are physically possible.
Who should attend: Ph.D. students, postdocs and faculty members.

438 ## Drug screening

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Hallie Blevins

2:45 PM	797.6	**In Silico Investigation of Gastroprotective Compounds from n-Butanol Fraction of Costus igneus on Antiulcer Druggable Targets.** M. Adetayo, Babcock University
3:00 PM	658.1	**Preclinical Drug Development of a Novel Antiviral Target in Rotavirus.** E. Duffy, Bates College
3:15 PM	659.1	**Mechanistic Insights of Sulfonamide-Based NLRP3 Inhibitors for the Treatment of Neurodegenerative Diseases.** H. Blevins, Virginia Commonwealth University
3:30 PM	797.8	**Anti-hypertensive effect of BPM4 on spontaneously hypertensive rats that antagonizes Dopamine βeta hydroxylase.** M. Saini, University of Delhi South Campus

435 Gene regulation

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Tapas Kundu

2:45 PM	786.6	Histone chaperone Nucleophosmin regulates transcription of key genes involved in oral tumorigenesis. T. Kundu, Jawaharlal Nehru Centre for Advanced Scientific Research
3:00 PM	786.1	Impaired Transcription Elongation by RNA Polymerase I Results in Defective Ribosomal RNA Processing. A. Huffines, University of Alabama at Birmingham
3:15 PM	786.8	Protein-DNA Interactomes of NKX2-5 and TBX5 Mutants Identified in Congenital Heart Defects. E. Carrasquillo-Dones, University of Puerto Rico Rio Piedras Campus
3:30 PM	786.5	Mediator Subunit MED1 Differentially Modulates Mutant Thyroid Hormone Receptor Intracellular Localization and Intranuclear Mobility. M. Wang, College of William and Mary

434 Lipid Diversity and Disease: Spotlight on Journal of Lipid Research Junior Associate Editors

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 119 AB

CHAIR: George Carmen

2:45 PM	434.1	The role of Dennd5b in intestinal lipid absorption. S. Gordon, University of Kentucky
3:05 PM	434.2	Inter-organ cross talk through plasma lipid signaling. J. Simcox, University of Wisconsin-Madison
3:25 PM	434.3	Lessons and surprises from mice with humanized bile acid composition. R. Haeusler, Naomi Berrie Diabetes Center, Columbia University Medical Center

442 Membrane architecture

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Joshua Pemberton

2:45 PM	516.9	Acute Manipulation of Outer Membrane Phospholipid Composition Directly Alters Mitochondrial Dynamics and Ultrastructure. J. Pemberton, National Institutes of Health / NICHD
3:00 PM	516.4	Lipid Expansion Microscopy. B. White-Mathieu, Cornell University
3:15 PM	679.10	How Lipids Regulate the Cell Surface Localization of HSPA1A, a Stress-inducible 70-kDa Heat Shock Protein. R. Altman, California State University - Fullerton
3:30 PM	518.7	Interactions between the aNT Domains of Human V-ATPases and Phosphatidylinositol Phosphate Lipids. C. Mitra, SUNY Upstate Medical University

437 Metal mania

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: Aiko Turmo

2:45 PM	655.7	Functional Diversity and Structural Analysis of SAM-dependent Aminobutanoyl Transferases. M. Shoemaker, Fort Lewis College
3:05 PM	795.13	Kinetic and stability study on the immobilized enzymatic step of one-pot dimerization of 2-[2-(dimethylamino)ethoxy]ethanol. K. Espinosa, James Madison University
3:25 PM	795.10	Characterization of the Nickel-inserting Cyclometallase LarC from Moorella thermoacetica and Identification of a CMPylated Reaction Intermediate. A. Turmo, Michigan State University

440 Neurobiology and neuronal signaling

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Lillian Brady

2:45 PM	810.6	Sex-specific cholinergic regulation of dopamine release mechanisms through nicotinic receptors in the nucleus accumbens. L. Brady, Vanderbilt University
3:00 PM	668.6	UBE3A Hyperactivity as a Driver of Neurodevelopmental Disease. K. Weston, Washington University in St. Louis
3:15 PM	668.2	Traumatic brain injury in a Drosophila upregulates nitric oxide synthase associated with increased acute behavioral deficits and decreased survival time. T. Mackey, Midwestern University
3:30 PM	668.5	Machine Learning-Guided Engineering of Cre-lox Recombination for Comprehensive Analysis of Neural Networks. Y. Yamauchi, Kyoto University

436 Non-coding RNAs

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: James Falese

2:45 PM	647.2	Structure-function relationships for the lncRNA SChLAP1 in aggressive prostate cancer. J. Falese, Duke University
3:00 PM	488.7	Multi-assay profiling of diminazene library reveals predictive bidirectional modulation of MALAT1 triplex stability in vitro. M. Zafferani, Duke University
3:15 PM	647.7	Changes in the Non-Coding Transcriptome of Short-Term Glucose-Challenged Human Glomerular Epithelial Cells May Give Insights into Early Molecular Events of Diabetic Kidney Disease. N. Tsotakos, Penn State Harrisburg
3:30 PM	788.4	Long noncoding RNAs in regulation of inflammation, immune response, and glucose metabolism. S. Mandal, The University of Texas at Arlington

439 Novel kinase regulatory mechanisms

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Tony Ly

2:45 PM	505.13	Quantitative Mass Spectrometry Reveals a Proteome-wide Role for Cyclin A and Cks1 in Multisite, Non-Proline Directed Phosphorylation by CDK1. T. Ly, University of Dundee
3:00 PM	507.8	A 14-3-3-mediated mechanism of regulation for the ubiquitin-sensing kinase TNK1. C. Egbert, Brigham Young University
3:15 PM	507.4	Kinase Domain Autophosphorylation Rewires the Activity and Substrate Specificity of CK1 Enzymes. S. Cullati, Vanderbilt University
3:30 PM	807.10	Assembly and Disassembly of PKA is Allosterically Controlled by Nucleotides and Metal Ions. R. Maillard, Georgetown University

441 Nutrition and metabolism

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 126 B

CHAIR: Melanie McReynolds

2:45 PM	672.6	NAD+ Flux and Resiliency in Aged Mice. M. McReynolds, Pennsylvania State University
3:00 PM	513.8	Regulation of Mitochondrial Calcium Transport by Caloric Restriction in Rat Kidney. J. Serna, Universidade de São Paulo
3:15 PM	675.2	Sex, Dietary pH, and Protein-dependent effects in Diet-induced Obese Mice. K. Menikdiwela, Texas Tech University
3:30 PM	675.5	Sexually dimorphic metabolic effects of a naturally occurring flavonoid are mediated by changes in the gut microbiome. P. Sharma, Department of Nutritional Sciences and Rutgers Center for Lipid Research

443 Recent advances in glycobiology

SPOTLIGHT SESSION

2:45 PM - 3:45 PM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Julie Bouckaert

2:45 PM	821.1	Serial crystallography and kinetics reveal how the FimH bacterial lectin tweaks between mono- and multivalent binding of high-mannose N-glycans. J. Bouckaert, UGSF, CNRS
3:00 PM	520.8	Identifying Mucus-Degrading Microbes Within the Human Gut Microbiota. J. Glover, Medical University of SC
3:15 PM	520.6	O-GlcNAc characterization during Tribolium castaneum development. B. Rodrigues, Federal University of Rio de Janeiro
3:30 PM	520.10	Longitudinal profiling of the Plasma Glycome from Normal and Alzheimer's Disease individuals. B. Arnett, University of Kentucky

444 Race and mental health in STEM

SOCIETY EVENT

2:45 PM - 4:15 PM PENNSYLVANIA CONVENTION CENTER, 126 A

CHAIR: Ruma Banerjee

STEM graduate students and postdoctoral fellows, particularly those of color, often experience microaggressions, discrimination and harassment in the workplace, which can lead to adverse mental health outcomes. We must support these scientists by encouraging dialogue and taking action.
In this session, sponsored by the ASBMB's Maximizing Opportunities for Scientific and Academic Independent Careers program, or MOSAIC, panelists Cirleen DeBlaere of Georgia State University, Carlota Ocampo of Trinity Washington University and Stephen Quaye of Ohio State University will lead insightful discussions pertaining to the intersectionality of race and mental health of STEM trainees.

462 Genomics, glycomics, proteomics and metabolomics

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 122 A

CHAIR: Josiah Hardesty

4:00 PM	661.6	**eDNA Analysis of Goat-Grazed Rhamnus cathartica Soil Microbial Communities.** P. Soneral, Bethel University
4:20 PM	663.4	**Structure-based Computational Modeling of Germline PTEN Mutations in Cancer and Autism Risk: Implications for Therapeutic Targeting.** I. Smith, Cleveland Clinic
4:40 PM	662.5	**Alterations in hepatic albumin phosphorylation in patients with alcohol-associated hepatitis and cirrhosis.** J. Hardesty, University of Louisville

464 Immune signaling

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 120 C

CHAIR: Sophia Reidel

4:00 PM	510.5	**Dopamine D2-Like Receptor Signaling and Downregulation of Filamin-A May Drive the Association Between Neighborhood Socioeconomic Status and CCR2 Expression on Monocytes.** M. Pita, NHLBI/NIH
4:15 PM	510.2	**Insulin-like growth factor 1 induces a reparative neutrophil phenotype.** S. Reidel, Universitätsklinikum Düsseldorf
4:30 PM	510.10	**Development of an in vitro bioassay to assess the regulation of immune genes in nontraditional model species.** S. Bradshaw, NC State University
4:45 PM	510.6	**Effects of Dibutyltin Exposures on Translation Regulatory Factors eIF4E, eIF4B, and S6 in Human Immune Cells.** A. Ruff, Tennessee State University

467 Lipid synthesis and metabolism

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 122 B

CHAIR: Yeongho Kim

4:00 PM	678.6	Regulation of Sphingomyelin Synthesis by Cholesterol. Y. Kim, Yale School of Medicine
4:15 PM	818.3	Probing the Central Role of Phosphatidylinositol Synthesis in Lipid Metabolism of Eukaryotic Cells. A. Mandal, NIH
4:30 PM	818.6	Role of Intestinal Stearoyl-CoA Desaturase 1 in Whole-Body Lipid Metabolism and Metabolic Health. N. Burchat, Rutgers University
4:45 PM	818.9	Amino Acid Metabolism Controls Fatty Acid Structure in Staphylococcus aureus. S. Whaley, St. Jude Children's Research Hospital

465 Microbiome interactions

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 120 B

CHAIR: Jake Hermanson

4:00 PM	816.10	Dietary Cholesterol-Induced Gut Microbes Drive Nonalcoholic Fatty Liver Disease Pathogenesis in a Murine Model. J. Hermanson, University of Wisconsin-Madison
4:15 PM	671.3	Alterations in Microbiota-Gut-Brain Axis and Susceptibility or Resilience to Traumatic Stress. A. Tanelian, New York Medical College
4:30 PM	671.8	Fluoropyrimidine Bioactivation and Metabolism by the Gut Microbiome. B. Guthrie, UCSF
4:45 PM	671.9	Changes in Icelandic soil microbiomes from the forefield of retreating glaciers revealed by Illumina and MinION sequencing. E. Smith, Earlham College

466 Obesity metabolism

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 121 A

CHAIR: Daniel Irelan

4:00 PM	515.3	Distinct Properties of Adipose Stem Cell Subpopulations Determine Fat Depot-Specific Characteristics. H. Nahmgoong, Seoul National University
4:15 PM	515.2	Pharmacologic or Genetic PDE4 Inactivation Reduces Obesity and Improves Glucose Handling in Mice. D. Irelan, University of South Alabama College of Medicine
4:30 PM	817.5	Hepatic Stearoyl-CoA desaturase deficiency-mediated induction of the insulin-like growth factor-binding protein 1 requires FGF21. A. McGahee, University of Wisconsin-Madison
4:45 PM	816.1	Real Time Measurement of Hepatic β-oxidation with Deuterium Magnetic Resonance in Murine Models on a High Fat Diet. M. Mcleod, University of Florida

461 Protein structure and biophysics

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 120 A

CHAIR: David Thorn

4:00 PM	650.12	**Structural Basis of Nanobody Induced ACKR3 Inhibition.** R. Schlimgen, Medical College of Wisconsin
4:15 PM	492.17	**Domain-swapped dimeric γ-crystallin: the missing link in the evolution of oligomeric β-crystallins.** D. Thorn, Harvard University
4:30 PM	793.11	**Structural studies reveal unique features of nsp16 from SARS-CoV-2, a protein essential for immune system evasion and a possible drug target.** M. Rosas-Lemus, Northwestern University
4:45 PM	492.8	**19F-NMR shows that active site aromatic residues in CYP121 of Mycobacterial tuberculosis play a dual role in substrate interaction and protein structure.** C. Campomizzi, SUNY University at Buffalo

460 Transcriptional mechanisms, regulation and RNA polymerases

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 121 B

CHAIR: Michael Guertin

4:00 PM	485.2	**Kinetic networks identify key regulatory nodes and transcription factor functions in early adipogenesis.** M. Guertin, University of Connecticut
4:15 PM	645.4	**Measuring the precise position of transitions in transcription with PRO-IP-seq.** P. Versluis, Cornell University
4:30 PM	645.3	**Structural studies of an androgen receptor complex reveal modes of allosteric regulation.** E. Wasmuth, Memorial Sloan Kettering Cancer Center
4:45 PM	485.3	**Spt5-nucleic acid interactions are directly involved in promoter proximal pausing of RNA polymerase II.** R. Dollinger, Pennsylvania State University

463 Tumor biochemistry

SPOTLIGHT SESSION

4:00 PM - 5:00 PM PENNSYLVANIA CONVENTION CENTER, 121 C

CHAIR: Isabelle Logan

4:00 PM	666.8	**Nitration of Hsp90 Affects its Spatial Distribution and Promotes Schwannoma Cell Proliferation.** I. Logan, Oregon State University
4:15 PM	667.14	**Mechanistic Insights into the Hypermethylation of BRCA1 Evinces a Novel Pathway to Breast Tumorigenesis.** D. Patra, Rajiv Gandhi Centre for Biotechnology
4:30 PM	666.11	**Functional Characterization of Germline and Cancer-specific Protein MAGEB2.** C. Romney, Fisk University
4:45 PM	666.7	**IL32 overexpression is driven by DNA hypomethylation and contributes to an extracellular matrix (ECM) remodeling phenotype in EpCAM-/CD49f-enriched breast cancer cells.** E. Benson, Presbyterian College

Meeting Notes

ASBMB Posters

SUNDAY APRIL 3

Exhibit Hall

Poster set up by: 7:00 AM - 9:00 AM

Poster display: 9:00 AM - 4:00 PM

Poster removal: 4:00 PM - 6:00 PM

Sunday Presenters:

ASBMB odd numbered boards present 12:45 PM – 1:20 PM;
even numbered boards present 1:25 PM – 2:00 PM.

1 - 12	DNA polymerases, telomerase, replicases and replisomes
13 - 27	Chromatin structure, remodeling and gene expression
28 - 38	Transcriptional mechanisms, regulation and RNA polymerases
39 - 54	RNA: processing, transport, and regulatory mechanisms
55 - 61	RNA binding proteins
62 - 70	Non-coding RNAs
71 - 97	Protein synthesis, structure, modifications and interactions
98 - 108	Mechanisms and regulation of protein synthesis and dynamics
109 - 128	Protein interactions and binding
129 - 146	Protein structure and biophysics
147 - 153	Protein folding and chaperones
154 - 160	Protein turnover, misfolding, aggregation and degradation
161 - 166	Intrinsically disordered proteins, prions and amyloids
167 - 171	Proteasomes: structure and regulation
172 - 189	Enzyme chemistry and catalysis
190 - 202	Enzyme mechanisms, kinetics and energetics
203 - 216	Structural dynamics of enzymes and multienzyme complexes
217 - 234	Chemical biology, drug discovery and bioanalytical methods
235 - 240	Drug screening and development
241 - 248	Protein-small molecule interactions
249 - 256	Nanotechnology
257 - 265	Metabolomics
266 - 295	Signal transduction and cellular regulation
296 - 304	G proteins and small GTPases
305 - 319	Protein kinases and phosphatases
320 - 326	Tumor suppressors and tumor drivers
327 - 343	Cancer signaling and therapeutics
344 - 357	Immune signaling
358 - 363	Bacteria and parasites: from microbiome to antibiotics
364 - 371	Antibiotic resistance
372 - 379	Metabolism and bioenergetics
380 - 387	Metabolism and cancer
388 - 402	Diabetes, obesity and metabolic syndrome
403 - 416	Lipids and membranes
417 - 426	Lipids and inflammation
427 - 435	Membrane proteins, lipid interactions, and lipid domains
436 - 448	Vesicle trafficking and cargo
449 - 460	Glycans and glycobiology
461 - 479	BMB education and professional development
480 - 489	Active learning in the molecular life sciences
490 - 493	Service learning initiatives, community involvement and context dependent biochemistry instruction
494 - 505	Interdisciplinary/translational science (SEBM)

483
DNA polymerases, telomerase, replicases and replisomes

A1 **483.1** DNA Polymerase-Parental DNA Interaction is Essential for Helicase-Polymerase Coupling in Bacteriophage T7 DNA Replication. **C. Lo,** *Rice University*

A2 **483.2** Implications of DNA Polymerase Gamma in the Repair of the Mitochondrial Genome. **C. de Bovi Pontes,** *Auburn University at Montgomery*

A3 **483.3** Structures of LIG1 engaging with mutagenic mismatches inserted by polß in base excision repair. **M. Caglayan,** *University of Florida*

A4 **483.4** Unique DNA Polymerase kappa Interactome Suggests Novel Cellular Functions. **S. Paul,** *Penn State University College of Medicine*

A5 **483.5** Processing of DNA Clamp Loader Subunit DnaX Is Important in the Absence of Caulobacter Cell Division Inhibitors. **T. Tashjian,** *University of Massachusetts Amherst*

A6 **483.6** Single-Molecule Analysis of in vivo DNA Replication Origin Licensing Stoichiometry. **N. Rhind,** *UMass Med School*

A7 **483.7** Deletion of Ch. IV Telomeres via Genetic Engineering of a Circular Chromosome in the Budding Yeast S. cerevisiae. **M. Mefford,** *Morehead State University*

A8 **483.8** Role of key protein residues involved in DinB DNA damage specificity: an in silico study. **B. Sampoli Benitez,** *Marymount Manhattan College*

A9 **483.9** A biochemistry platform to incorporate replication forks, DNA lesions, and nucleosome arrays to single-molecule experiments. **J. Lin,** *LUMICKS USA*

A10 **483.10** Unparalleled Approaches to Directly Visualize DNA-Binding Proteins and Biomolecular Condensates. **S. Dandpat,** *LUMICKS*

A11 **483.11** Extending the Applications of Telomere-Anchored PCR for Telomere Length Measurements. **G. Witte,** *Lake Forest College*

A12 **483.12** Tau Mediated Coupling Interactions between Pol III Core DNA Synthesis and DnaB Helicase Unwinding. **M. Welikala,** *Baylor University*

484
Chromatin structure, remodeling and gene expression

A13 **484.1** Nucleolar function is regulated by the mitochondrial protein sulfite oxidase (SUOX). **E. McFadden,** *Yale University*

A14 **484.2** Immunofluorescent and Immunohistochemical (Colorimetric) Characterization of B-DNA, Z-DNA and G4-Quadruplex DNA in Human Tissues Demonstrating the Spatial Genomic Organization of Different DNA Structures: Genomesorganizomics. **C. Gagna,** *New York Institute of Technology*

A15 **484.3** Investigating the Transition of the Core Centromeric Nucleosome Complex from Interphase to Mitosis using Chemical Biology Tools. **P. Allu,** *Biochemistry and Biophysics, Penn Center for Genome Integrity, Epigenetics Institute, Perelman School of Medicine, University of Pennsylvania*

A16 **484.4** Measurement of UHRF1 and UHRF2 Interaction With Nucleosomes. **M. Kostoff,** *Eastern Michigan University*

A17 **484.5** Identifying Genes with Consistently Noisy Expression in S. cerevisiae. **T. DeStefanis,** *Villanova University*

A18 **484.6** PROTECTION OF TELOMERES 1b Modulates Cellular ROS and Chromatin Structure in Arabidopsis thaliana. **C. Castillo-González,** *Texas A&M University*

A19 **484.7** The stretch region within the TTD domain of UHRF2 is a disordered region. **C. Mellado Fritz,** *Eastern Michigan University*

A20 **484.8** To ChIP, or to CUT, that is the question: Comparative Evaluation of Next-Gen Methodologies for Studying the genome-wide distribution of Histone H3 Lysine 9 di-methyl mark in pancreatic cells. **G. Urrutia,** *Medical College of Wisconsin*

A21 **484.9** Transcriptional Landscape Established by the Euchromatic Histone-lysine N-methyltransferase Pathway During Pancreas Ontogenesis and Pancreatitis. **R. Urrutia,** *Medical College of Wisconsin*

A22 **484.10** Epigenomic mechanisms used by KrasG12D to regulate inflammatory gene clusters in epithelial pancreatic cancer cells, which are critical for reprogramming the tumor microenvironment. **M. Du,** *Medical College of Wisconsin*

A23 **484.11** A Novel Approach to Assess Podocyte Damage at Single Cell Level. **H. Chen,** *CECAD, University of Cologne*

A24 **484.12** Control of Foxp3+ Treg Production, Stability and Function by the Nuclear Co-regulator, Sin3A. **L. Christensen,** *Children's Hospital of Philadelphia*

A25 **484.13** Pharmacological reactivation of RBL2/p130 could be an effective antitumoral strategy for malignant pleural mesothelioma. **A. Costa,** *University of Siena*

A26 **484.14** Aberrant Silencing of Ribosomal DNA Initiates a Global Stress Response that Promotes H3K9-mediated Adaptation. **A. Larkin,** *University of Michigan*

A27 **484.15** Mechanisms of mitochondrial promoter recognition in humans and other mammalian species. **A. Zamudio-Ochoa,** *Thomas Jefferson University*

485
Transcriptional mechanisms, regulation and RNA polymerases

A28 **485.1** DANCR acetylated-KLF5 induces cisplatin resistance in triple-negative breast cancer by inhibiting the transcription of p27Kip1. **J. Tang,** *The First Hospital of Lanzhou University*

A29 **485.2** Kinetic networks identify key regulatory nodes and transcription factor functions in early adipogenesis. **M. Guertin,** *University of Connecticut*

A30 **485.3** Spt5-nucleic acid interactions are directly involved in promoter proximal pausing of RNA polymerase II. **R. Dollinger,** *Pennsylvania State University*

A31 **485.4** The Shape of Silence: A Role for the Nuclear Envelope in Transcriptional Regulation. **M. Sosa Ponce,** *University of Calgary*

A32 **485.5** The Codependent Expression of Yeast RNA Polymerase I Rpa34/Rpa49 Heterodimer Subcomplex. **K. Baylor,** *SUNY Upstate Medical University*

A33 **485.6** Genotoxic Stress Globally Downregulates Transcription in Budding Yeast. **P. Kaur,** *St. John's University*

A34 **485.7** Characterization of Fly POLR1D Mutations in a Clinically Relevant Residue Associated with Treacher Collins Syndrome (TCS). **H. Pascual,** *SUNY Upstate Medical University*

A35 **485.8** Eukaryotic RNA Polymerase α-like Subunits Heterodimerize by Distinct Interaction Mechanisms. **A. Belkevich,** *SUNY Upstate Medical University*

A36 **485.9** Developing RNA-Seq and ChIP-Seq Pipelines on an Oxford Nanopore Technologies Platform to Study Notch1 Transcriptional Dynamics. **N. Klier,** *San Jose State University*

A37 **485.10** Overexpression of the Neurospora crassa Transcription Factor fsd-1 Inhibits Mating. **H. Smith,** *SUNY Geneseo*

A38 **485.11** Investigating the Effect of PARP Mediated Compartments on Transcription Dynamics. **V. Eng,** *Cornell University*

486
RNA: processing, transport, and regulatory mechanisms

A39 **486.1** The NuA4 Acetyltransferase, Acetylation of Histone H4 and the H2A.Z Variant Histone are Required for Appropriate RNA Splicing in Saccharomyces cerevisiae. **C. Bolle,** *The College of New Jersey*

A40 **486.2** A Novel Connection Between [PSI+] Prion Formation and RNA Splicing in Saccharomyces cerevisiae. **E. Jones,** *The College of New Jersey*

A41 **486.3** SUMO Regulates Histone mRNA Processing and Polyadenylation. **S. He,** *Johns Hopkins Bloomberg School of Public Health*

A42 **486.4** Thermodynamic analysis of SL1 1x2 internal loop in SARS-CoV-2. **Q. Eaheart,** *Colorado College*

A43 **486.5** The Effects of Ribosomal Proteins uS2, uS3, and uS4 on Transcription. **G. Blaha,** *University of California*

A44 **486.6** Computational and Genetic Exploration of RNA-binding FinO-domain Structures. **K. Dailey,** *Mount Holyoke College*

A45 **486.7** Structural characterization of the Long Non-Coding RNA SChLAP1. **M. Oh,** *Drexel University*

A46 **486.8** Med13 Plays a Dual Role in Promoting P-Body Assembly. **S. Hanley,** *Rowan University*

A47 **486.9** Searching for Novel sRNA-Binding Proteins in Chlamydia trachomatis. **S. Jo,** *Mount Holyoke College*

A48 **486.10** Fingerprinting Small Molecule Modulators of Nucleolar Biophysics. **A. Donlic,** *Princeton University*

A49 **486.11** A novel histogram based on the SEER database predicts overall survival in patients with high-grade cerebellar glioma. **H. Duan,** *The First Hospital of Shanxi Medical University*

A50 **486.12** Congested Heart Failure in Small Breeds Dogs. **K. Chambers,** *South Florida State College*

A51 **486.13** PACER lncRNA Regulates COX-2 Expression in Lung Cancer Cell Lines. **S. Desind,** *Rutgers Biomedical and Health Sciences, School of Graduate Studies*

A52 **486.14** Studies of the 5' Untranslated Region of sagA/Pel in Streptococcus pyogenes. **A. Brown,** *Coastal Carolina University*

A53 **486.15** A genetic screen for proteins involved in Non-Stop mRNA decay in C. elegans. **M. Diamandi,** *Villanova University*

A54 **486.16** Introns in yeast regulate translation to generate protein and cellular function. **M. Hossain,** *University of California*

487
RNA binding proteins

A55 **487.1** Interplay between TPR nucleoporin and TREX-2 complex in mRNA export. **M. Dasso,** *National Institute of Child Health and Human Development*

A56 **487.2** Phosphorylation-specific recruitment of human SCAF6 to RNA polymerase II during transcription regulation. **R. Moreno,** *University of Texas-Austin*

A57 **487.3** Harness RNA-binding protein HuR to boost Anti-PD-1 Immunotherapy in immunologically cold tumors. **Q. Zhang,** *University of Kansas*

A58 **487.4** Biochemical Characterization of the Sexually Dimorphic Helicases DDX3X and DDX3Y. **M. Owens,** *University of Pennsylvania*

A59 **487.5** The Role of SARS-CoV Nonstructural Protein 1 in Cytoplasmic Stress Granule Formation. **K. Bridges,** *University of South Carolina Upstate*

A60 **487.6** Nucleolin's Role in the Biogenesis of Pri-miRNA 16 by the Microprocessor Complex: An In silico Approach. **J. Edwards,** *Brooklyn College CUNY*

A61 **487.7** Antisense Molecules Designed to Target SARS-CoV-2 are Nontoxic to the Host in a Murine Model. **C. McCollum,** *University of Colorado Boulder*

488
Non-coding RNAs

A68 **488.7** Multi-assay profiling of diminazene library reveals predictive bidirectional modulation of MALAT1 triplex stability in vitro. **M. Zafferani,** *Duke University*

A62 **488.1** RNA Modifications Destabilize a Pyrimidine-Motif RNA•DNA-DNA Triple Helix. **G. Schiefelbein,** *University of Notre Dame*

A63 **488.2** Circulating MicroRNAs in Canine Congestive Heart Failure – Why Exosomes? **C. Ewing,** *South Florida State College*

A64 **488.3** Determining The mRNA Which microRNA-379-5p Inhibitor Is Targeting in Human Lung A549 Cells. **A. Schroder,** *Denison University*

A65 **488.4** Mutational analysis of the oligomerization domain of the HERV-K Rec protein. **K. Baier,** *United States Naval Academy*

A66 **488.5** Characterization and Modeling of Conserved RNA Elements Within the Human Coronavirus OC43 5' UTR. **M. MacKeown,** *Case Western Reserve University*

A67 **488.6** Identification and Characterization of Small Regulatory RNA in Streptococcus. **K. Hoxha,** *Coastal Carolina University*

A69 **488.8** The potential role of microRNA as bio markers in canine congestive heart failure. **C. Mitchell,** *South Florida State College*

A70 **488.9** Structural studies of regulatory elements in the RNA transcript for streptolysin S associated gene A (sagA) in group A Streptococcus. **B. Lee,** *Coastal Carolina University*

489
Protein synthesis, structure, modifications and interactions

A71 **489.1** Inhibiting the Interaction Between von Willebrand Factor and Collagen Using Novel Peptides to Prevent Thrombosis Initiation. **D. Guarracino,** *The College of New Jersey*

A72 **489.2** Predicting Protein Function and Orientation on a Gold Nanoparticle Surface Using a Residue-Based Affinity Scale. **J. Xu,** *Mississippi State University*

A73 **489.3** Engineering Prophylactic Biosynthesis of an Antituberculosis Antibiotic. **L. Robbins,** *Lake Forest College*

A74 **489.4** Modelling the Applications of CRISPR-Cas9 for Treating Sickle Cell Disease. **G. Cooper,** *Ashbury College*

A75 **489.5** The role of PETase in Breaking Down Polyethylene Plastics. **R. Ilianu,** *Ashbury College*

A76 **489.6** Investigating CTLA-4 binding to generate novel small-molecule inhibitor. **O. Khoroshilov,** *Ashbury College*

A77 **489.7** Parkinson's Disease. **K. Bai,** *Ashbury College*

A78 **489.8** Synthesis of the transmembrane domain of the accessory protein ORF7a of SARS-CoV-2 using solid phase peptide synthesis and analyzing the oligomerization state. **T. Hobart,** *Hampden-Sydney College*

A79 **489.9** Metal Substrate Translocation and Transport Mechanism of the Sinorhizobium meliloti P1B-5-type ATPase Nia Revealed by In-vitro Transport Assays in Proteoliposomes. **N. Abeyrathna,** *The University of Texas at Dallas*

A80 **489.10** A Role for Inositol Pyrophosphates in ER Protein Translocation?. **A. Molnar,** *Juniata College*

A81 **489.11** Biochemical analysis of human ERK2 mutants reveals important residues in MEK1-ERK2 binding and phosphorylation. **M. Ye,** *Swarthmore College*

A82 **489.12** Expression and Purification of Human Circadian Protein hRORγ for Structural and Functional Studies. **W. Salazar,** *The Univeristy of Texas at El Paso*

A83 **489.13** Synthesis and Conformational Analysis of APP O-Glycopeptides Bearing the Tn Antigen. **M. Cudic,** *Florida Atlantic University*

A84 **489.14** Investigating the Interaction Interface between MEK and ERK Kinase. **S. Lin,** *Swarthmore College*

A85 **489.15** Developing a recombinant expression system for human serine protease PRSS23. **S. Akhtar,** *Mayo Clinic*

A86 **489.16** Effect of Rosa canina Methanol Extract on Membrane Trafficking in Different Niemann-Pick C1 Phenotypes. **D. Wanes,** *University of Veterinary Medicine Hannover*

A87 **489.17** Targeting Translational Control in Cancer Using Small Molecule Activators of PP2A. **K. Jonas,** *University of Nebraska Medical Center*

A88 **489.18** Profiling the ubiquitinated proteome in human cells. **S. Diaz,** *Purdue University*

A89 **489.19** A structurally preserved allosteric site in the MIF superfamily affects enzymatic activity and CD74 activation in D-dopachrome tautomerase. **E. Chen,** *Brown University*

A90 **489.20** Identification of Eral1 Recognition Sequences for Unfolding and Degradation by Mitochondrial ClpXP. **C. Posner,** *Brandeis University*

A91 **489.21** Towards an understanding of S100A8 and S100A9 post-translational regulation. **M. Polakowska,** *Institute of Biochemistry and Biophysics, Polish Academy of Sciences*

A92 **489.22** Identification of protein targets for NADPH oxidase 5 mediated oxidative modification. **E. Sweeny,** *Medical College of Wisconsin*

A93 **489.23** Structures, Mechanism, and Functional Relevance of Filament Formation by SgrAI. **N. Ghadirian,** *The University of Arizona*

A94 **489.24** Detection of the Pin1-ligand interactions using 19F NMR spectroscopy. **X. Chen,** *Texas A&M University*

A95 **489.25** Highly conserved binding region of ACE2 as a receptor for SARS-CoV-2 between humans and Hippopotamus. **T. Hayashi,** *National Hospital Organization Kyoto Medical Center*

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A275 505.10 The Effects of Disabled ARR1 Gene on C. **Elegans Expression of Substance Preferences. D. Jazari,** *The Nueva School*

A276 505.11 The scaffold protein Shoc2 controls ERK1/2-driven neural crest development by balancing the expression of extracellular matrix components. **R. Norcross,** *University of Kentucky*

A277 505.12 Glutamine metabolism co-ordinates the cell-cycle with cell fate in stem cells. **C. Kikani,** *University of Kentucky*

A278 505.13 Quantitative Mass Spectrometry Reveals a Proteome-wide Role for Cyclin A and Cks1 in Multisite, Non-Proline Directed Phosphorylation by CDK1. **T. Ly,** *University of Dundee*

A279 505.14 Arg84/65 Within the αC-Helix of Erk1/2 is Pivotal for Blocking Autoactivation and Oncogenicity and Distinguishes MAP Kinases from Other EPKs. **N. Soudah,** *The Hebrew University of Jerusalem*

A280 505.15 DGKζ interacts with ERK3 and counteracts the promoting role of ERK3 in lung cancer migration. **A. Myers,** *Wright State University*

A281 505.16 Determining the role of the Ras family GTPase Rap1 in regulating mTORC2 activity and function in cell migration. **G. Cahigas,** *The University of Arizona*

A282 505.17 KuA5-Hera Deficiency Promotes R-Loop-Induced Genomic Instability and Carcinogenesis Following Whole-Body Exposure to Ionizing Radiation. **E. Motea,** *Indiana University School of Medicine*

A283 505.18 Understanding the Pro-Apoptotic Mechanisms of Bitter Local Anesthetics in Head and Neck Squamous Cell Carcinoma. **Z. Miller,** *University of Pennsylvania*

A284 505.19 Characterization of RTK Tyrosine Phosphorylation in Response to Chemotherapy Drugs in Triple Negative Breast Cancer. **A. Flores Perez,** *University of Puerto Rico - Mayaguez*

A285 505.21 IGF2BP2 Promotes Cancer Progression by Degrading the RNA Transcript Encoding a v-ATPase Subunit. **F. Wang,** *Cornell University*

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A287 505.23 Expression of IDO1 is regulated via Ras signaling pathways. **E. Lee,** *New York University Grossman School of Medicine*

A288 505.24 Optogenetic Control of Phosphatase and Kinase Function. **A. Ryan,** *University of Pittsburgh*

A289 505.25 Understanding the Role of the Peroxiredoxin Family in the Regulation of Ferroptosis in Colorectal Cancer. **A. Alshahrani,** *University of Kentucky*

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A294 505.30 Role of glucocorticoid-induced leucine zipper during type II macrophage differentiation induced by dexamethasone and IL-4. **C. Lee,** *College of Science, Sungkyunkwan University*

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A298 506.3 YM-254890 Promotes the Subcellular Redistribution of Gαq. **C. Randolph,** *Thomas Jefferson University*

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A307 507.3 Plant Phytochrome B Assembles an Asymmetric Dimer with Unique Signaling Potential. **H. Li,** *Van Andel Institute*

A308 507.4 Kinase Domain Autophosphorylation Rewires the Activity and Substrate Specificity of CK1 Enzymes. **S. Cullati,** *Vanderbilt University*

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A310 507.6 Analysis of Cancer-associated Mutations in the Novel PKC Theta. **S. Hodapp,** *UC San Diego*

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A314 507.10 TNK1 negatively regulates TBK1 at ubiquitin condensates. **T. Lopez-Palacios,** *Brigham Young University*

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A328 509.2 A Computational Method for the Visualization of Nitrated Hsp90 Distribution in 3D Culture Models. **A. Sathler,** *Oregon State University*

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A332 509.6 DNA Repair of Ovarian Cancer Cell Lines SKOV3 and OV90 Compared to Non-Transformed PBMC Cells. **M. Reese,** *University of Alaska Fairbanks*

A333 509.7 Alisol A23-Acetate Targets SHH Signaling in MED12 Knockdown Breast Cancer Cells to Inhibit Oncogenesis. **C. Gonzalez,** *University of the Incarnate Word*

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A365 512.2 Genesis of Antibiotic Resistance (AR) LXXXV: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Clinical Connotation of Monitoring ISP [BP(PP), MAP, CBF, ICP, CPPopt, Comatose GCS 3, and CCP] for Attenuation of IHM. **H. Montoya,** *City of Eagle Pass Water Works*

A366 512.3 Genesis of Antibiotic Resistance (AR) LXXXVI: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Mechanism(s) of ISP Afloat Transient APG Thrust VKVS free shear flow augmented cerebral vessel collapse, GCS3, & IHM. **H. Montoya,** *City of Eagle Pass Water Works*

A367 512.4 Elucidating the antibiotic sensing mechanism of VanB vancomycin-resistant Enterococci. **P. Rotsides,** *Drexel University College of Medicine*

A368 512.5 Genesis of Antibiotic Resistance (AR) LXXXVII: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Fluid bolus evoked fluid volume expansion Augmented APG, VSF, reprobate to inviscid fluid (Fluid Stalling, Re= ∞; viscosity=0) augment IHM. **J. Flores,** *City of Eagle Pass Water Works*

A369 512.6 Genesis of Antibiotic Resistance (AR) LXXXIX: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Global Alliance for an Integrated Data Base on Antibiotic(AR)/Antimicrobial(AMR) Susceptibility Test Interpretive Criteria (Breakpoints) (STIC), to mitigate AR Pandemic(ARP) in turn Fetter Modalities of Neuro(logy)) Psychiatry. **J. Torralba,** *Southwest Texas Junior College*

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A426 517.10 Antimicrobial Triclosan (TCS) Increases Production of Interleukin 1 beta (IL-1β) in Human Immune Cells. **W. Wilburn,** *Tennessee State University*

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A431 518.5 Understanding the Lipid-dependent function of SARS-CoV-2 E Protein. **E. David,** *Purdue University*

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Glycans and glycobiology

A449 520.1 The sialyltransferase ST6Gal1 is upregulated in a cytokine-mediated manner during pancreatitis. **A. Silva,** *University of Alabama at Birmingham*

A450 520.2 Genetically encoded multivalent liquid glycan array displayed on M13 bacteriophage. **M. Sojitra,** *University of Alberta*

A451 520.3 Elucidating the Role of Glycogen in Glucose Transporter 1 Deficiency Syndrome. **M. Williams,** *University of Kentucky*

A452 520.4 Characterization of the DH475 cooperating antibody and its interaction with the HIV-1 spike. **M. Finkelstein,** *Swarthmore College*

A453 520.5 Novel Affinity Chromatography Ligand Utilizing the Biological Interaction Between the N-linked glycans on Monoclonal Antibodies and the FcγIIIA Receptor. **S. Melideo,** *Tosoh Bioscience, LLC*

A454 520.6 O-GlcNAc characterization during Tribolium castaneum development. **B. Rodrigues,** *Federal University of Rio de Janeiro*

A455 520.7 Nematode hexosaminidases – a new biochemical tool for glycan analysis. **Z. Dutkiewicz,** *University of Natural Resources and Life Sciences*

A456 520.8 Identifying Mucus-Degrading Microbes Within the Human Gut Microbiota. **J. Glover,** *Medical University of SC*

A457 520.9 Understanding the Role of Cancer Glycosylation on Antibody Binding to MUC16. **S. Karnwal,** *California State University*

A458 520.10 Longitudinal profiling of the Plasma Glycome from Normal and Alzheimer's Disease individuals. **B. Arnett,** *University of Kentucky*

A459 520.11 Fungal polysaccharides are altered by lyophilization resulting in decreased antibody binding. **M. Wear,** *Johns Hopkins University Bloomberg School of Public Health*

A460 520.12 High-throughput Assay and In Vivo Screen Identify α-2,3-sialylation of CD98 by ST3GAL1 and ST3GAL2 as Essential to Melanoma Survival. **S. Chen,** *New York University*

521
BMB education and professional development

A461 521.1 Teaching Collaboration Skills to Undergraduate Biochemistry and Chemistry Students. **P. Mertz,** *St. Mary's College of Maryland*

A462 521.2 Pilot study of career development and personal values among Biochemistry students. **F. Lo,** *The Chinese University of Hong Kong*

A463 521.3 Connecting the Dots: Students' Mental Organization and Storage of Biochemistry Visual Literacy Skills. **C. Terrell,** *University of Minnesota*

A464 521.4 Metal Chelators Ethylenediaminetetraacetic acid (EDTA) and N,N,N′,N′-tetrakis(2-pyridinylmethyl)-1,2-ethanediamine (TPEN) Interfere with Carbonic Anhydrase (CA) Activity in Wilbur-Anderson Assay (WAa). **V. Snitsarev,** *Montclair State University*

A465 521.5 Communicating Science at 24 fps. **A. Khadria,** *KathASK Films LLC*

A466 521.6 You gotta work, BASIL! Reimagining an established CURE to provide high-quality digital learning experiences that are intentionally equitable, inclusive and accessible for all students. **A. Sikora,** *Nova Southeastern University*

A467 521.7 Developing Assessments to Gauge Biomolecular Visual Literacy: A 5 step approach to ensuring accuracy and reliability. **K. Procko,** *The University of Texas at Austin*

A468 521.8 An Enhanced 1D Electrophoresis Simulation with Pedagogical Tools. **T. Bernhardt,** *Rochester Institute of Technology*

A469 521.9 Identifying Student Misconceptions in Biomolecular Visualization in the Context of the BioMolViz Framework. **R. Roberts,** *Ursinus College*

A470 521.10 Teaching Biomolecular Visualization Literacy: Guidelines for Developing Assessments, Images and Rubrics Aligned with the BioMolViz Framework. **R. Acevedo,** *Westfield State University*

A471 521.11 The CRISPR in the Classroom Network: A Support System for Instructors to Bring Gene Editing Technology to the Undergraduate Classroom. **J. Pieczynski,** *Rollins College*

A472 521.12 Building a Distributed Research Network for Undergraduate Opportunities in Molecular Biochemistry. **J. Prokop,** *Michigan State University*

A473 521.13 Journal Club 3.0: An Effective Method of Training High School Students to Understand and Present Relevant Academic Research Papers. **A. Patel,** *The Nueva School*

A474 521.14 Fundamentals of Biochemistry, a free and new LibreText book for Undergraduate Courses. **H. Jakubowski,** *College of St. Benedict/St. John's University*

A475 521.15 Flexible design can help overcome barriers identified when implementing a Course-based Undergraduate Research Experience (CURE). **R. Roberts,** *Ursinus College*

A476 521.16 Engaging biochemistry students virtually utilizing problem-based learning and at home lab activities. **K. Wodzanowski,** *University of Delaware*

A477 521.17 Addressing persistence and retention of chemistry and biochemistry majors with engagement seminars beyond the first year. **R. Booth,** *University of the Incarnate Word*

A478 521.18 Creation of Three-Dimensional Pedagogical Models of Genetic Mutations. **V. Paliwal,** *Milwaukee School of Engineering*

A479 521.19 Integrated Math And Science Scholars (iMASS)- Community and collaboration creating opportunities for STEM students. **S. Kasper,** *Lee University*

522
Active learning in the molecular life sciences

A480 522.1 CRISPR-ethics in the Undergraduate Classroom using CCR5 Gene. **M. Santisteban,** *University of North Carolina at Pembroke*

A481 522.2 Anti-Covid Gene Therapy: Integration of Authentic Research into a Continuously Evolving Undergraduate Laboratory Course. **M. Hicks,** *Monmouth University*

A482 522.3 Characterizing Novel Kinases as an Authentic Research Experience in the Undergraduate Biochemistry Lab. **B. Hall,** *Grand View University*

A483 **522.4** A Biochemistry Course Undergraduate Research Experience (CURE) on Crithidia fasciculata parasites. **R. Andanje,** *Albright College*

A484 **522.5** The Genomics Education Partnership As A Model of Course-Based Undergraduate Experience (CURE) that Promotes Growth Mindset. **N. Tsotakos,** *Penn State Harrisburg*

A485 **522.6** Adaptable online discussion format to increase student interest, peer interactions, and information literacy. **K. Wilson,** *Marian University*

A486 **522.7** MDH protein interactions and phosphorylation: Engaging students with a novel scientific theme using CUREs.. **J. Provost,** *University of San Diego*

A487 **522.8** A CURE for Cloning: Implementing a Modular Approach to Cloning Recombinant Antibodies in an Undergraduate Teaching Lab. **T. Brooks,** *CSU Fresno*

A488 **522.9** Setting up the CURE: approaches to introducing scientific literature into course-based research projects studying Malate Dehydrogenase function in Trypanosoma brucei. **A. Springer,** *University of Massachusetts Amherst*

A489 **522.10** External Collaboration Results in Student Learning Gains and Positive STEM Attitudes in CUREs. **C. Peterson,** *Suffolk University*

523
Service learning initiatives, community involvement and context dependent biochemistry instruction

A490 **523.1** Ten Best Practices for Taking Experiential Learning Online. **G. Gillaspy,** *Virginia Tech*

A491 **523.2** The Nova Hydroculture Project: Bringing a Community of Science Technology, Engineering, Arts, and Math (STEAM) Learners Together to Grow a Unique Garden. **E. Schmitt Lavin,** *Nova Southeastern University*

A492 **523.3** Doing Better: Addressing Community Educational Disparities through Student-Led Outreach. **R. Jiang,** *Purdue University*

A493 **523.4** Educational/Professional Partnership in the Development of a Novel Strain of S-11 Saccharomyces cerevisiae Brewing Yeast. **T. McGee,** *Hampden-Sydney College*

524
Interdisciplinary/translational science (SEBM)

A494 **524.1** Targeted Cancer Immunotherapy by Nanoparticle T Cell Engagers. **B. Lubben,** *Washington University in Saint Louis*

A495 **524.2** Sex-Specific Arrhythmias Caused by Cardiac Sodium Channel Nav1.5 Mutation Alters Cardiomyocyte Metabolism. **T. Lee,** *University of Toronto*

A496 **524.3** Electronic Nicotine Delivery Systems Exhibit LowerToxicity Compared to Cigarettes: "The Replica Study Experience". **A. Distefano,** *University of Catania*

A497 **524.4** Use of DNA Barcoding to Identify Species of Raw Ready-To-Eat Seafood Products Sold in Orange County, CA. **A. Tabb,** *Chapman University*

A498 **524.5** Comparative in vitro efficacy of a hyaluronic acid (HA) matrix ingredient containing HA, dermatan sulphate and collagen (Dermial®) versus pure HA from extraction or fermentation origin. **P. Galvez-Martin,** *BIOIBERICA SAU*

A499 **524.6** Naringenin antihypertensive power is mediated via abrogation of mineralocorticoid receptor (MCR)/ angiotensin converting enzyme (ACE)/ kidney injury molecule (Kim-1) signaling pathway. **A. Oyagbemi,** *University of Ibadan*

A500 **524.7** Investigating Mitochondrial Dysfunction in Barth Syndrome. **O. Sniezek,** *Johns Hopkins School of Medicine*

A501 **524.8** Anti-S2 Protection in COVID-19 Infection and SARS-CoV-2 Spike Vaccination. **G. Canziani,** *Drexel University*

A502 **524.9** Developing a Pipeline for Personalized Diagnoses of Glut1 Deficiency Syndrome. **L. Griffith,** *University of Kentucky College of Medicine*

A503 **524.10** BRD4-MK2 signaling: target for Crohn's Disease-associated fibrosis. **M. Chulkina,** *College of Medicine, Penn State Health Milton Hershey Medical Center*

A504 **524.11** 4-Aminopyridine promotes cutaneous reinnervation and accelerates wound healing. **J. M G,** *Penn State College of Medicine*

A505 **524.12** Structural Landscape of SARS-CoV-2 entry & activation of spike glycoprotein & potential interventions. **N. Vankadari,** *Biomedicine Discovery Institute, Monash University, Victoria*

Meeting Notes

ASBMB Posters

MONDAY APRIL 4

Exhibit Hall

Poster set up by: 7:00 AM - 9:00 AM

Poster display: 9:00 AM - 4:00 PM

Poster removal: 4:00 PM - 6:00 PM

Monday Presenters:

ASBMB odd numbered boards present 12:30 PM – 1:05 PM;
even numbered boards present 1:10 PM – 1:45 PM.

1 - 8	DNA recombination, structure and topology
9 - 16	DNA polymerases, telomerase, replicases and replisomes
17 - 27	Chromatin structure, remodeling and gene expression
28 - 39	Epigenetic modifications of DNA and RNA
41 - 48	Transcriptional mechanisms, regulation and RNA polymerases
49 - 54	RNA binding proteins
55 - 64	Non-coding RNAs
65 - 90	Protein synthesis, structure, modifications and interactions
91 - 110	Protein interactions and binding
111 - 128	Protein structure and biophysics
129 - 138	Protein folding and chaperones
139 - 146	Protein turnover, misfolding, aggregation and degradation
147 - 152	Intrinsically disordered proteins, prions and amyloids
153 - 169	Enzyme chemistry and catalysis
170 - 182	Enzyme mechanisms, kinetics and energetics
183 - 192	Enzyme regulation and allosterism
193 - 209	Chemical biology, drug discovery and bioanalytical methods
210 - 217	Drug screening and development
218 - 223	Chemical probes, biosensors and biomarkers
224 - 235	Protein engineering and design
236 - 245	Genomics
246 - 258	Proteomics
259 - 267	Computational biology and bioinformatics
268 - 298	Signal transduction and cellular regulation
299 - 313	Extracellular matrix and cell signaling
314 - 325	Tumor suppressors and tumor drivers
326 - 342	Cancer signaling and therapeutics
343 - 353	Neurobiology and neuronal signaling
354 - 363	Microbe/parasite-host interactions
364 - 374	Antibacterial targets and drug discovery
375 - 384	Microbiomes
385 - 394	Metabolism and bioenergetics
395 - 405	Oxidative stress and reactive oxygen
406 - 412	Metabolism and cancer
413 - 424	Metabolism and nutrition
425 - 437	Diabetes, obesity and metabolic syndrome
438 - 452	Lipids and membranes
453 - 461	Regulation of lipid metabolism
462 - 475	Membrane proteins, lipid interactions, and lipid domains
476 - 487	Glycans in disease
488 - 503	BMB education and professional development
504 - 514	Active learning in the molecular life sciences
515 - 519	Big data in molecular life sciences, student projects, labs and the classroom
520 - 524	Institutional change and faculty perspectives about teaching in the life sciences
525 - 531	Interdisciplinary/translational science (SEBM)

641
DNA recombination, structure and topology

A1 641.1 Phenotypic Changes Produced by Endogenous DNA Damage in Yeast Mutants Deficient in Recombination and Base Excision Repair. **A. Berry,** *Texas State University*

A2 641.2 Development of New Assays for the Simultaneous Measurement of DNA Double-Strand Break Repair by Multiple Pathways. **D. Valdez-Oranday,** *Texas State University*

A3 641.3 Codon Optimization of saCas9 Gene Enhances Protein Expression in Human Kidney Cells to Compensate for Difficulties in Delivery Vectors to Boost CRISPR-Cas9 in vivo Therapeutic Application. **B. Cheng,** *The Nueva School*

A4 641.4 Investigating the function of a unique DNA ligase (LIGK) in bdelloid rotifers. **A. Schurko,** *Hendrix College*

A5 641.5 Human Cytomegalovirus (HCMV) Tegument Protein pUL35 in the establishment of latency in models of quiescent infection. **A. Anguiano,** *Fort Lewis College*

A6 641.6 Screening for novel fluorescent nucleobase analogs (FBAs) using computational and experimental methods - 2-amino-8-vinylpurine (2A8VP), as a Case study. **N. Russel,** *Temple University*

A7 641.7 Deinococcus radiodurans RecOR Proteins Stimulate RecA Filament Formation on SSB-Bound Single-stranded DNA. **K. Jones,** *New Mexico State University*

A8 641.8 Genetic Variant (rs2304672) in 5' UTR region in PER2 gene and its association to Parasomnias and other sleep disorders in Puerto Rico. **G. Pagan-Gonzalez,** *UPRM*

642
DNA polymerases, telomerase, replicases and replisomes

A9 642.1 Identifying Cellular and Viral Factor Recruitment to Herpes Simplex Virus Type 1 Replication Forks. **J. Packard,** *Duquesne University*

A10 642.2 A Biophysical Analysis on the Effect of Ligands on Fluorescently Active G-quadruplex Structures. **C. Bryan,** *Monmouth University*

A11 642.3 The Effects of DNA Topoisomerase 1 Alteration in Herpes Simplex Virus Type 1 Infections. **R. Esenwein,** *Duquesne University*

A12 642.4 Detection of Multi-Protein Complexes Containing PCNA Using Fluorescence Anisotropy and Hormetic Modeling. **S. Greenwood,** *Rowan University School of Osteopathic Medicine*

A13 642.5 Determining the End Nucleotide of Telomeres in Aspergillus nidulans. **J. Day,** *Lake Forest College*

A14 642.6 A Collapsed Fingers Subdomain is the Basis for DNA Polymerase β I260M Mutator Activity. **C. Chavira,** *University of Arizona Cancer Center*

A15 642.7 DNA Replication Checkpoint Activates Respiration in Budding Yeast. **S. Nagar,** *St. John's University*

A16 642.8 Evidence of Conformational Changes in the Structure of Y-Family Human Polymerase Kappa. **P. Schneider,** *Marymount Manhattan College*

643
Chromatin structure, remodeling and gene expression

A17 643.1 Transcriptome and regulome signatures of multiple myeloma induced by bone marrow stromal cells. **S. Dziadowicz,** *West Virginia University*

A18 643.2 Polybromo-1 missense mutations found in renal cancer patients affect bromodomain stability and biological function. **G. Jiao,** *Purdue University*

A19 643.3 Structural and Biophysical Characterization of Plasmodium falciparum Bromodomain Protein 1. **A. Singh,** *University of Vermont*

A20 643.4 Molecular investigation of the TTD and PHD histone binding domains of the epigenetic regulator UHRF2. **B. Albaugh,** *Eastern Michigan University*

A21 643.5 Tau modulates mRNA transcription, alternative polyadenylation (APA) profiles of hnRNPs, chromatin remodeling and spliceosome complexes. **M. Montalbano,** *University of Texas Medical Branch*

A22 643.6 Epigenetics: A Gatekeeper to DNA Amplification and Replication Control. **J. Whetstine,** *Fox Chase Cancer Center*

A23 643.7 Distribution and Frequency of the Variant rs10738445 of BNC2 Gene Associated to Idiopathic Scoliosis in Puerto Rico. **N. García Tubéns,** *UPR-Mayaguez Campus*

A24 643.8 Isoform switching regulates Swi/Snf activity in response to nutrients. **L. Thurlow,** *UCLA*

A25 643.9 Mapping Out Histone Post-Translational Modifications in a Yeast Prion Model. **S. Cobos,** *The Graduate Center*

A26 643.10 Epigenetic Analysis of Different Tissues using Oxford Nanopore Technology. **J. McEvoy,** *Buena Vista University*

A27 643.11 Effect of TTfields interference MARK2 on proliferation, migration and invasion of glioma cells. **H. Duan,** *The First Hospital of Shanxi Medical University*

644
Epigenetic modifications of DNA and RNA

A28 644.1 Epicardial histone deacetylase 3 promotes myocardial growth through a novel microRNA pathway. **J. Jang,** *University of Maryland*

A29 644.2 A High throughput bioluminescent assay to monitor the activity of COVID-19 Methyltransferases Capping Enzymes. **S. Goueli,** *Promega Corp.*

A30 644.3 The Impact of Sorghum Polyphenols on DNA Methylation and Signaling Pathways in Colon Cancer. **Z. Kamagate,** *Towson University*

A31 644.4 DNA Methylation Underlies the Long-Term Association Between Periodontitis and Atherosclerotic Cardiovascular Disease. **M. Febbraio,** *University of Alberta*

A32 644.5 Activity-Based Profiling of RNA Modifying Enzymes. **R. Kleiner,** *Princeton University*

A33 644.6 A Budding Yeast Model System to Define Biological Pathways Altered by Pathogenic Missense Mutations in Histone Genes Identifies a Link between Histone H3K36 and the TOS4 Gene. **R. Ambrocio,** *Emory University*

A34 644.7 Defining the role of RNA acetylation via a sequence-specific RNA acetyltransferase. **S. Nance,** *National Cancer Institute*

A35 644.8 Dexamethasone ameliorates arthritis through epigenetic and transcriptional regulation of CCL17 production. **A. Achuthan,** *University of Melbourne*

A36 **644.9** The role of substrate deformation in context-dependent non-CG DNA methylation. **J. Song,** *University of California*

A37 **644.10** The Role of Vts1/Smaug in Adaptive Heritable Gene Expression. **T. Link,** *Walton High School*

A38 **644.11** Rotational dynamics of the MLL complex on nucleosome and its implication in heterogeneity of the epigenetic landscape. **Y. Dou,** *University of Southern California*

A39 **644.12** Protonation-Dependent Sequencing of 5-Formylcytidine in RNA. **C. Link,** *National Cancer Institute*

645
Transcriptional mechanisms, regulation and RNA polymerases

A41 **645.1** Role of Transcription Factor Pdc2 in the Thiamine Signal Transduction Pathway in Candida glabrata and Saccharomyces cerevisiae. **D. Wykoff,** *Villanova University*

A42 **645.2** A study of RNA polymerase-Template interaction utilizing CRISPR/dCas9 protein. **J. Hogaboom,** *Albion College*

A43 **645.3** Structural studies of an androgen receptor complex reveal modes of allosteric regulation. **E. Wasmuth,** *Memorial Sloan Kettering Cancer Center*

A44 **645.4** Measuring the precise position of transitions in transcription with PRO-IP-seq. **P. Versluis,** *Cornell University*

A45 **645.5** Set1, Set2, and the Clock-cycle complex are necessary to prevent age-related retinal degeneration in Drosophila melanogaster. **K. Bakhle,** *Purdue University*

A46 **645.6** Defining the Critical DNA Features Targeted by RNA Polymerase I Core Factor. **N. Munoff,** *Upstate Medical University*

A47 **645.7** Unique Biochemical Properties of Eukaryotic RNA polymerases I, II, and III. **R. Jacobs,** *University of Alabama at Birmingham*

A48 **645.8** Transcriptomic analysis of the genes for lactate dehydrogenase isomers in the reindeer' rumen of the Nenets Autonomous District in summer. **L. Ilina,** *BIOTROF+ LTD*

646
RNA binding proteins

A49 **646.1** The Transcriptional Coregulatory Protein YAP1 Interacts with RNA Binding Protein NPM1. **A. Dwead,** *Department of Biological Sciences and the Center for Cancer Research and Therapeutic Development Clark Atlanta University*

A50 **646.2** Computational and Biophysical Analysis of RNA/Protein Complexes in Histone mRNA Degradation. **P. Lackey,** *Westminster College*

A51 **646.3** Developing RNA Therapeutics for TDP-43 Proteinopathy in ALS/FTD. **K. Copley,** *University of Pennsylvania*

A52 **646.4** Asymmetric RNA Egress Site in Expanded RNA Virus by Cryo-EM and HDXMS. **S. Braet,** *The Pennsylvania State University*

A53 **646.5** Down-expression of MiR30a-5p promotes proliferation and migration of Non-Small Cell Lung Cancer cells by targetting MTDH. **S. Tapara Dramani Maman,** *G42*

A54 **646.6** Enhancing RNA aggregation through temperature cycling and intrinsically disordered RNA binding peptides. **B. Tenaglia,** *Salisbury University*

647
Non-coding RNAs

A55 **647.1** DAP5 Binding to the FGF-9 mRNA 5' UTR is Structurally-Dependent. **A. Whittaker,** *The Graduate Center, CUNY*

A56 **647.2** Structure-function relationships for the lncRNA SChLAP1 in aggressive prostate cancer. **J. Falese,** *Duke University*

A57 **647.3** Significance of the Translation Initiation Machinery Recruiting Structures in the Blackcurrant Reversion Virus RNA 1. **J. Lee,** *Metropolitan State University of Denver*

A58 **647.4** Analyzing the 5'-3' Kissing-Loop Interaction Sequence for Cap-Independent Translation Initiation of Blackcurrant Reversion Virus. **L. Zhou,** *Metropolitan State University of Denver*

A59 **647.5** Comprehensive Analysis of miRNA Regulation of MGAT3 Using the miRFluR Assay. **F. Zohora,** *University of Alberta*

A60 **647.6** miRNA Regulation of α-2,6- Sialylation: Comprehensive Analysis of ST-6GAL1 & 2. **F. Jame Chenarboo,** *Alberta University*

A61 **647.7** Changes in the Non-Coding Transcriptome of Short-Term Glucose-Challenged Human Glomerular Epithelial Cells May Give Insights into Early Molecular Events of Diabetic Kidney Disease. **N. Tsotakos,** *Penn State Harrisburg*

A62 **647.8** Investigating the miRNA regulatory landscape of OGT and OGA via the 3'UTR and 5'UTR regions utilizing the miRFluR high-throughput platform. **T. Chu,** *University of Alberta*

A63 **647.9** The Discovery of Antivirals and Targets for SARS-CoV-2 and EV-A71. **C. Haddad,** *Case Western Reserve University*

A64 **647.10** Anti-CovidMicroRNA Therapy Blocksthe Expression of the SpikeGeneof SARS-CoV-2. **V. DeMarco,** *Monmouth University*

648
Protein synthesis, structure, modifications and interactions

A65 **648.1** Analysis of Anti-CRISPR in relation to structurally similar proteins.. **N. Ostapchuk,** *Chicago Public Schools*

A66 **648.2** The Structure of Tau Proteins and Its Role in Neurodegenerative Disease. **I. Pidara,** *Chicago Public Schools*

A67 **648.3** Biochemical Characterization of SARS-CoV-2 Spike RBD Mutations and Their Impact on ACE2 Receptor Binding. **A. Hoter,** *University of Veterinary Medicine Hannover*

A68 **648.4** Synthesis of the transmembrane domain of the spike protein from SARS-CoV-2 using solid phase peptide synthesis and determination of its oligomerization state. **L. Grimes IV,** *Hampden-Sydney College*

A69 **648.5** vFLIP SIM Promotes Viral Latency of KSHV. **M. Constantine,** *Towson University*

A70 **648.6** The Interaction of the AAT Protein with Alpha-1 Antitrypsin Deficiency and Other Respiratory Disorders. **A. Pore,** *Olathe North High School*

A71 **648.7** Optimizing Co-Expression of Human Circadian Protein Complex CLOCK/BMAL1. **S. Adame,** *The University of Texas at El Paso*

A72 **648.8** Manganese Homeostasis in Bacteria: Interaction of the Small Protein MntS and Manganese Exporter MntP in E. coli. **M. Seymour,** *University of Wisconsin Oshkosh*

A73 **648.9** Using Synthetic Biology methods to construct a functional estrogen biosensor based on the dimerization-dependent Red Fluorescent Protein. **E. Case,** *Simmons University*

A74 **648.10** Interactions of TPH2 and TPH1 in Biosynthesis Pathways. **K. Kaur,** *Olathe North High School*

A75 **648.11** Human Cytochrome P450 8A1 Structure and Function: Supporting Drug Design for NAFLD and Diabetes Mellitus. **J. Liu,** *University of Michigan*

A76 **648.12** Towards Bacterial Expression of Unstable Mutants of a Mitochondrial Enzyme. **L. Randa,** *Carleton College*

A77 **648.13** Dissecting The Structural Contribution of The Cofilin N-Terminus to Actin Filament Severing and Phosphorylation by LIMK. **J. Sexton,** *Yale University*

A78 **648.14** Express and Purify Human CRY2 for Functional Analyses. **I. Pinal,** *University of Texas at El Paso*

A79 **648.15** A High "Steaks" Molecular Story: Copper Interactions with Mad Cow Disease Prion Proteins. **V. Muthukumar,** *The Independent School*

A80 **648.16** Role(s) of Acetylation in human pathogen Helicobacter pylori. **D. Rao,** *Indian Institute of Science*

A81 **648.17** OmpF porins of Enterobacteriaceae possess amyloidogenic properties. **M. Belousov,** *All-Russia Research Institute for Agricultural Microbiology*

A82 **648.18** Characterization of structural features driving promiscuous ligand binding in GMCSF. **J. Cui,** *Brown University*

A83 **648.19** Surface Mapping and Functional Interactions of GPx4, a Cytoprotective Peripheral Membrane Protein. **C. Labrecque,** *Virginia Commonwealth University*

A84 **648.20** Structural analysis of crosstalk between Type I and Type III CRISPR systems. **V. Parashar,** *University of Delaware*

A85 **648.21** Modeling the role of cyclin C in connecting stress-induced mitochondrial fission to apoptosis. **S. Doyle,** *Rowan University Graduate School of Biomedical Sciences*

A86 **648.22** ZNF692, a novel nucleolar regulator in cancer. **I. Brown,** *UT Southwestern*

A87 **648.23** A Diversity of Filamenting Enzymes. **C. Park,** *University of Arizona*

A88 **648.24** Contribution of the Golgi and Endosomes to Proteostasis During Aging in the Nematode Caenorhabditis elegans. **M. Palumbo,** *Villanova University*

A89 **648.25** Multifunctions of α-Synuclein Explained by Its Dynamic Heterogeneous Conformations with a Hierarchy of Transition Times. **J. Chen,** *Penn State College of Medicine*

A90 **648.26** Transcriptional Role of the Cdk8 Kinase Module with Protein Synthesis Machinery Before and After Nitrogen Starvation. **B. Friedson,** *Rowan Graduate School of Biomedical Sciences*

649
Protein interactions and binding

A91 **649.1** Evaluating the Impact of Non-coding Variants in the Cardiac Transcription Factor NKX2-5 Binding Sites. **E. Peña-Martínez,** *UPR Rio Piedras*

A92 **649.2** Deciphering the Role of Cancer-Testis Antigen (CTA) MAGEA9 in Regulating DNA Repair Pathway Proteins MSH2 and MSH6. **J. Chu,** *Fisk University*

A93 **649.3** Meditopia: Meditope-Enabled Bonds and their Affinity with Cetuximab. **Z. Coler,** *Mahtomedi High School*

A94 **649.4** Protein-protein interactions play significant roles in molecular motors. **L. Li,** *University of Texas El Paso*

A95 **649.5** Interactions of the intrinsically disordered selenoprotein S with a small GTPase regulator. **F. Gonzalez-Arias,** *University of Delaware*

A96 **649.6** Na"Nobody" likes COVID-19!: The Role of Nanobodies in Fighting COVID-19. **F. Bah,** *Mahtomedi High School*

A97 **649.7** Exploring the Role of Msh2-Msh6 in Processing Holliday Junction DNA. **A. Du,** *Wesleyan University*

A98 **649.8** Disassembly of fascin bundled actin filaments via their Mical associated oxidation. **S. Rajan,** *University of California*

A99 **649.9** USP13 deficiency aggravates cigarette smoke-induced alveolar space enlargement through stabilization of TXNIP. **J. He,** *The Ohio State University Wexner Medical Center*

A100 **649.10** Characterization of Periplasmic Iron Transport in Mycobacterium tuberculosis. **R. de Miranda,** *University of California, Irvine*

A101 **649.11** The DNA repair endonuclease MutLalpha is activated by a novel mechanism that promotes action at a distance. **S. Witte,** *Temple University*

A102 **649.12** A Shared Anchor on Primary Sigma Factor SigA by the WhiB-Like Proteins. **D. Guiza Beltran,** *University of Nebraska-Lincoln*

A103 **649.13** Identification of a Novel Amino Acid Motif Responsible for Peptide Aggregation in vitro. **D. Torres,** *Saint Leo University*

A104 **649.14** Interaction of Zika Virus with a Mosquito Axl-like Receptor. **J. Donahue,** *University of Southern Maine*

A105 **649.15** Enhanced antimycotic activity of nanoconjugates from fungal chitosan and Saussurea costus extract against resistant pathogenic Candida strains. **F. Alshubaily,** *King Abdulaziz University*

A106 **649.16** MK2 Phosphorylates Caspase-3, Facilitates Nuclear Translocation of Caspase 3, and Regulates Apoptosis. **O. Del Rosario,** *Johns Hopkins University*

A107 **649.17** Selenoprotein S Binds to the SARS-CoV-2 Replication Complex. **F. Ghelichkhani,** *University of Delaware*

A108 **649.18** Recognition and Cleavage of Human tRNA Methyltransferase TRMT1 by the SARS-CoV-2 Main Protease. **A. D'Oliviera,** *University of Delaware*

A109 **649.19** Lysine Deacetylases Have Distinct Preferences for Multiply Acetylated Substrates. **J. Bezue,** *Xavier University of Louisiana*

A110 **649.20** Potential Impact of Phosphorylation on Malate Dehydrogenase and Citrate Synthase Protein-Protein Interaction. **A. Blatt,** *University of San Diego*

650
Protein structure and biophysics

A111 **650.1** Modulating Protein Photophysical Properties with Unnatural Amino Acids. **C. Holod,** *Franklin & Marshall College*

A112 **650.2** Probing Local Protein Environments in Adenylate Kinase with 4-Cyano-L-Phenylalanine. **P. Mishra,** *Franklin & Marshall College*

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A373 **670.10** Genesis of Antibiotic Resistance (AR) LXXXVIII: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: "Hypnotic Trance Ameliorate Turbulence to Laminar Flow (Homeostasis)": A Neuropsychiatric Basis. **H. Montoya,** *City of Eagle Pass Water Works*

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A436 **676.12** The Correlation Between the SNP rs1049594 and Type 2 Diabetes. **M. Tena,** *Vanguard University of Southern California*

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A443 **677.6** The Intracellular Cholesterol Pool in Steroidogenic Cells Plays a Role in Autophagy, Basal Steroidogenesis and Mitochondrial Dynamics. **G. Bassi,** *University of Manitoba*

A444 **677.7** Convergent evolution of bacterial ceramide synthesis. **E. Klein,** *Rutgers University-Camden*

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A446 **677.9** SHIP164 is a Chorein Motif Lipid Transfer Protein that Controls Endosome-Golgi Membrane Traffic. **M. Hanna,** *Department of Neuroscience, Yale University School of Medicine*

A447 **677.10** A Novel Human Heterozygous SCP2 Mutation Leads to Alterations in Lipid Metabolism. **M. Galano,** *University of Southern California School of Pharmacy*

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A450 677.13 In-Vitro Antioxidant Assays and Computational Investigation of Phytoconstituents from Theobroma cacao Beans as Inhibitors of Neuro-Modulatory Enzymes. **S. Shodehinde,** *Adekunle Ajasin University*

A451 677.14 New non-canonical function of catalytically dead hexokinase 1 in ovarian cancer. **P. Heneberg,** *Charles University*

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Membrane proteins, lipid interactions, and lipid domains

A462 679.1 Proteome analysis of nuclear Lipid-Associated Promyelocytic Leukemia (PML) Structures (LAPS) Using Biotin Proximity Labelling. **J. Thompson,** *Dalhousie University*

A463 679.2 Interaction Sites of the Nem1-Spo7/Pah1 Phosphatase Cascade in Yeast Lipid Synthesis. **R. Jog,** *Rutgers University*

A464 679.3 Testing the Ability of Borate Transporter Orthologs to Complement Saccharomyces cerevisiae BOR1. **J. Beltran,** *Davidson College*

A465 679.4 Targeted Mutation of Lipid-Binding Sites in ScBor1 Does Not Prevent Dimerization. **V. Donoso,** *Davidson College*

A466 679.5 Borate Transporters Are Inhibited by the Stilbene-Derived Inhibitor SITS. **L. McGrath,** *Davidson College*

A467 679.6 Investigating Disease-Causing Mutations in SLC4 Transporter Homologs. **C. Hendrix,** *Davidson College*

A468 679.7 A Novel Peroxin is Required for Mitochondrial Morphology: Implications for Resolving a New Peroxisome-Mitochondrial Contact Site. **E. Knight,** *Clemson University*

A469 679.8 Production of recombinant Mtb membrane efflux pump for structural and functional studies to reveal mechanisms of drug resistance. **E. Georgieva,** *Texas Tech University*

A470 679.9 Protein engineering and biochemical/biophysical approaches for structural studies of small membrane proteins and their complexes: Application to viroporins. **S. Majeed,** *Texas tech university*

A471 679.10 How Lipids Regulate the Cell Surface Localization of HSPA1A, a Stress-inducible 70-kDa Heat Shock Protein. **R. Altman,** *California State University - Fullerton*

A472 679.11 Quantifying flow-induced transport of membrane-linked proteins in model and cell membranes. **S. Pash,** *Lehigh University*

A473 679.12 S-acylation of STIM1 regulates store-operated calcium entry. **G. Kodakandla,** *Cooper Medical School of Rowan University*

A474 679.13 The Effects of Point Mutations on the Dimerization Domain of Ebola Virus Protein VP40. **J. Conarty,** *Purdue University*

A475 679.14 Multi-omics Analysis of S. Pneumoniae Extracellular Vesicles. **S. Biedka,** *Impact Proteomics*

680
Glycans in disease

A476 680.1 OTX2's Dual Mode of Degradation is Regulated by O-GlcNAcylation. **E. Wulff Fuentes,** *Medical College of Wisconsin*

A477 680.2 Biological Consequences of HIV-1 Interactions with Bacteria. **D. Heindel,** *Icahn School of Medicine at Mt Sinai*

A478 680.3 Deacetylated Sialic Acids Increases Selectin-binding in Lung Cancer Cells. **M. Schulte,** *South Dakota State University*

A479 680.4 N-Glycosylation Inhibitor Interferes with WNT Signaling and Inhibits Angiogenesis. **D. Banerjee,** *University of Puerto Rico*

A480 680.5 Conformationally altered hyaluronan mitigates the symptoms of Parkinson disease in mice. **T. Sun,** *National Cheng Kung University*

A481 680.6 ST6Gal1 Contributes to Pancreatic Cancer Initiation by Promoting Pancreatitis-Induced Acinar to Ductal Metaplasia. **M. Marciel,** *University of Alabama at Birmingham*

A482 680.7 Maternal Zika Virus Infection Alters Offspring Hippocampal Glycan Sulfation Patterns in Nonhuman Primates. **K. Alonge,** *University of Washington*

A483 680.8 A human prefrontal cortex tissue microarray to study Alzheimer's disease. **R. Nielsen,** *University of Kentucky*

A484 680.9 Comparison of Lectins as Staining Biomarkers for GNE Myopathy Gene Therapy. **K. Crowe,** *Mount St. Joseph University*

A485 680.10 Assessment of Sialic Acid Levels in an In Vitro Model of Muscle Atrophy. **M. Poynter,** *Mount St. Joseph University*

A486 680.11 Lectin Staining for the Detection of In Vitro Sialic Acid Alterations. **M. Roth,** *Mount St. Joseph University*

A487 680.12 Non-coding FLT3 Mutation is Associated with Lower Galectin Levels in Breast Cancer Patients. **A. Funkhouser,** *University of South Carolina School of Medicine Greenville*

681
BMB education and professional development

A488 681.1 MDH CURE Community Faculty Fellows: A new mentoring program supporting Biochemistry CUREs. **L. Gentile,** *College of Saint Benedict and Saint John's University*

A489 681.2 Pedagogical Lessons Learned During the Time of COVID-19. **P. Ortiz,** *State University of New York (SUNY)*

A490 681.3 PDB-101: Molecular Explorations through Biology and Medicine. **C. Zardecki,** *RCSB PDB*

A491 681.4 Engaging an Undergraduate Researcher to Develop a Mushroom Tyrosinase Assay as a Summative Assessment Device for an Upper-level Biochemistry Laboratory Course. **K. Hite,** *Virginia Polytechnic Institute and State University*

A492 681.5 A Simple, Robust, Hands-On MALDI-TOF Laboratory Activity for Undergraduate Students. **J. Lawrencee,** *UWSP*

A493 681.6 Moving biochemistry and molecular biology courses online in times of disruption. **K. Procko,** *The University of Texas at Austin*

A494 681.7 Student Outcomes Differ Based on Length of a Course-based Undergraduate Research Experience (CURE). **J. Bell,** *University of San Diego*

A495 681.8 Course-based Undergraduate Research Linked Across Two Core Biology Courses. **L. Listenberger,** *St. Olaf College*

A496 681.9 The Impact of the COVID Pandemic on STEM Professionals. **M. Benore,** *University of Michigan Dearborn*

A497 681.10 Evaluation of the HyFlex, Hybrid, and Asynchronous Online Teaching Modalities on Student Learning in Graduate Microbiology Coursework. **J. Davie,** *D'Youville College*

A498 681.11 Toward a Validated Metabolic Systems Thinking Framework. **T. Barton,** *University of Illinois at Chicago*

A500 681.13 Lipid droplets understood through student designed 3D printed models of the seipin protein complex. **I. Juhler,** *Grand View University*

A501 681.14 When molecules come to life – Using Augmented reality for studying protein structure in Cell Biology class. **S. Agrawal,** *University of Mary Washington*

A502 681.15 Project 80: a reproducible, student-driven framework for creating multimedia educational resources from primary literature. **H. Liu,** *The Nueva School*

A503 681.16 The Role of Ideonella sakaiensis PETase in the Degradation of PET Plastics: a Structural Comparison of the Wild Type and S238F/W159H Double Mutant. **B. Alfieri,** *The Pingry School*

682
Active learning in the molecular life sciences

A504 682.1 Quantification of Learning Gains in a Science CURE: Leveraging Learning Objectives to Substantiate and Validate the Benefits of Experiential Education. **R. Keating,** *Nova Southeastern University*

A505 682.2 Creating a Learning Model Where Students Practice the Scientific Process Through Protein Modeling. **E. Schmitt Lavin,** *Nova Southeastern University*

A506 682.3 Diagnosing Metabolic Diseases Using Thin Layer Chromatography: Laboratory Experiment for both Organic Chemistry and Biochemistry Undergraduate Laboratories. **K. Keenan,** *Stockton University*

A507 682.4 Using Student Movement to Improve Understanding of the Pyruvate Dehydrogenase Complex. **M. Mullen Davis,** *Millersville University*

A508 682.5 Using Controlled Environment Agriculture as a Platform for STEM-Training. **T. Johnson,** *La Sierra University*

A509 682.6 Rapid deployment of smartphone-based augmented reality tools for field and online education in structural biology. **R. Sung,** *Carleton College*

A510 682.7 Troubleshooting Real-time PCR Data Online and on Ground to Develop Critical Inquiry and Problem Solving Skills. **G. Bistulfi,** *D'Youville College*

A511 682.8 Transitioning CUREs to Undergraduate Research Experiences. **S. Hernandez,** *Rollins College*

A512 682.9 A Tale of Two Semesters: Flipped Biochemistry Curriculum in the Time of COVID. **K. Miller,** *University of Mount Union*

A513 682.10 Gesticulating Biochemistry: Exploring the Impact of using Augmented Reality Models on Students' Usage of Gestures when Talking about Biochemistry. **R. Sung,** *Carleton College*

A514 682.11 Using autonomy to drive the development of students into budding scientists. **D. Dries,** *Juniata College*

683
Big data in molecular life sciences, student projects, labs and the classroom

A515 683.1 Exploring Protein Function Through In Silico Investigation: The Role of the Nsp5 Protease in SARS-Cov-2 Evolution. **J. Currier,** *Hope College*

A516 683.2 Analysis of Attitudinal Student Learning Benefits from a Biochemistry CURE Adapted for the Online Format. **A. Kapil,** *Nova Southeastern University*

A517 683.3 Saccharomyces cerevisiae YIL164C/NIT1 is a Putative Nitrilase. **E. Koyama,** *Soka University of America*

A518 683.4 Exploring Protein Structures of SARS-CoV-2 Variants of Concern within an Undergraduate Research Course. **M. Van Stry,** *Lane College*

A519 683.5 Formulation and Testing of Alcohol-based Hand Sanitizers. **S. Bowers,** *Lane College*

684
Institutional change and faculty perspectives about teaching in the life sciences

A520 684.1 The New "Normal": Online Tools for In-Person Learning in the Molecular Life Sciences. **Q. Vega,** *Montclair State University*

A521 684.2 Identity, Power, and Legitimacy: Faculty Conceptions of Diversity in Higher Education. **S. Lo,** *University of California San Diego*

A522 684.3 Providing effective feedback with soaring class sizes: It's still possible. **O. Hart,** *Purdue University*

A523 684.4 An analysis of Course-based Undergraduate Research Experience (CURE) efficacy at community colleges, primarily undergraduate, and research institutions. **M. Wolyniak,** *Hampden-Sydney College*

A524 684.5 Navigating as a Deaf and Hard of Hearing Undergraduate in Research Laboratories: Barriers and Inclusion. **P. Craig,** *Rochester Institute of Technology*

685
Interdisciplinary/translational science (SEBM)

A525 **685.1** Ablation of pigment epithelium-derived factor receptor, PEDF-R, causes photoreceptor degeneration. **A. Bernardo-Colón,** *National Eye Institute*

A526 **685.2** Structural and functional analysis of cancer related proteins: A critical target for drug development. **R. Sharma,** *Albert Einstein College of Medicine*

A527 **685.3** In vitroevaluation of anti-aging and regenerative properties of dermatan sulfate for skin care. **P. Galvez-Martin,** *Bioiberica SAU*

A528 **685.4** Biomimetic Collagen Membranes Functionalized with mRNA-loaded Lipid Nanoparticles for Fibroblast Transdifferentiation to Endothelial Cells. **R. Villarreal-Leal,** *Houston Methodist Research Institute*

A529 **685.5** Selection and development of aptamers for pyoverdine. **S. Anisuzzaman,** *Iowa State University*

A530 **685.6** Targeting p21-highly-expressing Senescent Cells Enhances Skeletal Muscle Function through Mitochondrial Function and Reactive Oxygen Species. **S. Noh,** *University of Connecticut*

A531 **685.7** Bacillus Subtilis DE111 Improves Endothelial Dependent Vascular Dilation in Mice Fed a Western Diet. **B. Risk,** *Colorado State University*

ASBMB Posters

TUESDAY APRIL 5

Exhibit Hall

Poster set up by: 7:00 AM - 9:00 AM
Poster display: 9:00 AM - 4:00 PM
Poster removal: 4:00 PM - 6:00 PM

Tuesday Presenters:

ASBMB odd numbered boards present 12:30 PM – 1:05 PM;
even numbered boards present 1:10 PM – 1:45 PM.

1 - 16	Chromatin structure, remodeling and gene expression
17 - 26	Transcriptional mechanisms, regulation and RNA polymerases
27 - 42	RNA: processing, transport, and regulatory mechanisms
43 - 47	Non-coding RNAs
48 - 56	RNA processing and editing
57 - 81	Protein synthesis, structure, modifications and interactions
82 - 100	Protein interactions and binding
101 - 114	Protein modifications
115 - 132	Protein structure and biophysics
133 - 138	Protein turnover, misfolding, aggregation and degradation
139 - 151	Enzyme mechanisms, kinetics and energetics
152 - 169	Chemical biology, drug discovery and bioanalytical methods
170 - 177	Drug screening and development
178 - 188	Chemical biology of natural products, nucleic acids and small molecules
189 - 194	Chemical probes, biosensors and biomarkers
195 - 202	Protein-small molecule interactions
203 - 221	Genomics, glycomics, proteomics and metabolomics
222 - 231	Genomics
232 - 233	Glycomics
234 - 241	Computational biology and bioinformatics
242 - 272	Signal transduction and cellular regulation
273 - 282	G proteins and small GTPases
283 - 296	Protein kinases and phosphatases
297 - 308	Apoptosis and cell death
309 - 325	Cancer signaling and therapeutics
326 - 335	Neurobiology and neuronal signaling
336 - 345	Microbe/parasite-host interactions
346 - 363	Antibiotic resistance
364 - 371	Antibacterial targets and drug discovery
372 - 379	Oxidative stress and reactive oxygen
380 - 390	Metabolism and cancer
391 - 400	Metabolism and nutrition II
401 - 413	Diabetes, obesity and metabolic syndrome
414 - 424	Regulation of lipid metabolism
425 - 433	Membrane proteins, lipid interactions, and lipid domains
434 - 439	Glycosyltransferases and hydrolases
440	Glycan binding proteins
441 - 452	Enzyme chemistry and catalysis
453 - 461	Bacteria and parasites: from microbiome to antibiotics
462 - 478	Lipids and membranes

785
Chromatin structure, remodeling and gene expression

A1 **785.1** Crotalus atrox Induced Cellular Injury Triggers an Oxidative Stress Gene Response in HEK-293T Cells. **S. Khoshneviszadeh,** *Kennesaw State University*

A2 **785.2** The Effects of Site Specific Histone Modifications on Nucleosomal DNA Accessibility. **C. Rowlett,** *Texas A&M University*

A3 **785.3** H3K9me3 binding analysis of the isolated PHD and TTD domains of UHRF2. **I. Miller,** *Eastern Michigan University*

A4 **785.4** Differential Roles of SWI/SNF Complexes in Metal Regulation. **N. Carulli,** *Wesleyan University*

A5 **785.5** Transcriptional regulation via strand displacement DNA repair in G-quadruplexes. **A. Whitaker,** *Fox Chase Cancer Center*

A6 **785.6** Centromere Innovations with a Mouse Species. **N. Pandey,** *Department of Biochemistry and Biophysics, University of Pennsylvania*

A7 **785.7** UL25 Deletion in hCMV and Impacts on Viral Replication Cycles. **A. Laskie,** *Fort Lewis College*

A8 **785.8** In Vivo Crosslinking and Mass Spectral Analysis of the Yeast Nucleosomal Protein Interactome. **R. Fisher,** *Manhattan College*

A9 **785.9** Role of Histone Chaperone APLF in Mammalian Embryo Development. **P. Varghese,** *Rajiv Gandhi Centre for Biotechnology*

A10 **785.10** Investigating the structure of UHRF2 TTD-PHD with H3K9me3. **S. Konopka,** *Eastern Michigan University*

A11 **785.11** Role of the SWIRM Domain in Regulating the HAT Module of the SAGA Complex. **S. Haile,** *Johns Hopkins University, School of Medicine*

A12 **785.12** NCLX expression regulation by mild stress conditions. **J. Cabral-Costa,** *Universidade de São Paulo*

A13 **785.13** Purification of the human cone-rod homeobox protein. **J. Hayes,** *James Madison University*

A14 **785.14** Enhancer regulation by H3K4me1 methyltransferases MLL3/MLL4. **K. Ge,** *NIDDK, NIH*

A15 **785.15** Regional and Single Nucleotide Correction of Sequence Bias in Chromatin Accessibility Data. **J. Wolpe,** *University of Virginia*

A16 **785.16** Structure of Saccharomyces cerevisiae Mediator-RNA polymerase II pre-initiation complex for divergent transcription. **J. Gorbea Colón,** *University of Pennsylvania*

786
Transcriptional mechanisms, regulation and RNA polymerases

A17 **786.1** Impaired Transcription Elongation by RNA Polymerase I Results in Defective Ribosomal RNA Processing. **A. Huffines,** *University of Alabama at Birmingham*

A18 **786.2** Comparative Study of Quantitative TSS Maps among Yeast Strains Demonstrates Key Genetic Sites Required for TSS Selection. **W. Park,** *Saint Louis University*

A19 **786.3** HMGN2 regulates transcription factor activity through chromatin modifications and protein interactions, developmentally modulated by microRNA-23. **B. Amendt,** *University of Iowa*

A20 **786.4** Structural characterization of the cone-rod homeobox protein binding to DNA. **C. Buchholz,** *James Madison University*

A21 **786.5** Mediator Subunit MED1 Differentially Modulates Mutant Thyroid Hormone Receptor Intracellular Localization and Intranuclear Mobility. **M. Wang,** *College of William and Mary*

A22 **786.6** Histone chaperone Nucleophosmin regulates transcription of key genes involved in oral tumorigenesis. **T. Kundu,** *Jawaharlal Nehru Centre for Advanced Scientific Research*

A23 **786.7** The Codependent Expression of the Essential Mammalian RNA Polymerase I PAF49/PAF53 Heterodimer. **R. McNamar,** *University of Oklahoma Health Sciences Center*

A24 **786.8** Protein-DNA Interactomes of NKX2-5 and TBX5 Mutants Identified in Congenital Heart Defects. **E. Carrasquillo-Dones,** *University of Puerto Rico Rio Piedras Campus*

A25 **786.9** A Mass Action Model for Heat Shock Induced Enhancer Transcription. **K. Wang,** *Cornell University*

A26 **786.10** Simplified, open-source analysis of DNA-binding proteins. **E. Gates,** *LUMICKS*

787
RNA: processing, transport, and regulatory mechanisms

A27 **787.1** Detecting RNA dynamics in live mammalian cells with fluorescence lifetime-based sensors. **E. Braselmann,** *Georgetown University*

A28 **787.2** Effect of miRNA: MRE Complementarity for SBP-1 Gene Silencing in a Caenorhabditis Elegans Apoptosis Model. **A. Cocquyt,** *The Nueva School*

A29 **787.3** Imaging mRNAs with corrected RNA stability. **W. Li,** *Albert Einstein College of Medicine*

A30 **787.4** Divalent cation driven liquid-liquid phase separation of disordered acidic proteins. **J. Mayfield,** *University of California - San Diego*

A31 **787.5** Gene Therapy for Brain Tumors: Identification of New Therapeutic Targets Based on RNA Structure. **L. Sine,** *Monmouth University*

A32 **787.6** Investigating the Role of Base-Triples in the HTLV-1 pro-pol Frameshift Site Pseudoknot. **M. Maille,** *Loyola Marymount University*

A33 **787.7** Determining How Stem-loop Structure Thermodynamic Stability Influences Frameshift Efficiency at the HTLV-1 gag-pro Frameshift Site. **M. Soliman,** *Loyola Marymount University*

A34 **787.8** The small RNA universe of Capitella teleta. **S. Khanal,** *University of Southern Mississippi*

A36 **787.10** Optimization of RNA Display Using GC-Clamp Modifications to Improve Genetic Detection of RNA-Protein Interactions. **L. Nguyen,** *Mount Holyoke College*

A37 **787.11** In Vitro Selection of RNAs That Can Detect Hypoxanthine: A Surprising Technical Issue. **H. Greene,** *United States Naval Academy*

A38 **787.12** Identification of A-B, a Novel Chimeric RNA in Colorectal Cancer. **S. Lynch,** *University of Virginia*

A39 **787.13** Cellular Localization of Dbp2 and Identification of its Interaction Partners. **R. Lubinga,** *Binghamton University*

A40 787.14 Micro RNA Expression Profile Analysis in A549 Cancer Cells Treated with Methylsulfonylmethane. **C. Ezenwanne,** *Montclair State University*

A41 787.15 3' Terminal end-labeling of structured RNA by Klenow DNA polymerase. **M. Mwangi,** *University of the Sciences in Philadelphia*

A42 787.16 Interferon Inducible Pseudouridine Modification in Human Transcriptome by Quantitative Nanopore Sequencing. **S. Huang,** *University of Chicago*

788
Non-coding RNAs

A43 788.1 MicroRNA Profiling in West Nile Virus Carrying Mosquito, Culex tarsalis. **O. Becker,** *Northern State University*

A44 788.2 Coring vs scrolls: Inclusion of the muscularis layer on tissue scrolls of the urinary bladder leads to inaccurate miRNA expression. **S. Clark,** *Purdue University*

A45 788.3 Discovery of novel human long-noncoding RNAs (lncRNAs) associated with inflammation. **A. Chini,** *The University of Texas at Arlington*

A46 788.4 Long noncoding RNAs in regulation of inflammation, immune response, and glucose metabolism. **S. Mandal,** *The University of Texas at Arlington*

A47 788.5 Identification of Small Regulatory RNA Transcripts in Extracellular Vesicles from Lactic Acid Bacteria. **L. Busby,** *Coastal Carolina University*

789
RNA processing and editing

A48 789.1 An Evaluation of the Stability of Splicing Protein DiA1 Through Circular Dichroism Spectroscopy. **R. Dunn,** *Trinity University*

A49 789.2 Strategies for Identifying Important Residues in the tRNA Modification Protein Trm732. **M. Fraley,** *Northern Kentucky University*

A50 789.3 Study of Trm7 Interactions With Binding Partners Trm732 and Trm734 for 2'-O-Methylation of the tRNA Anticodon Loop in Yeast. **K. Rae,** *Northern Kentucky University*

A51 789.4 Mapping Spatio-temporal ADAR Editing Landscapes in Neurodevelopment. **N. Plonski,** *Kent State University*

A52 789.5 The Effects of Tail Truncations of Pre-Messenger RNA Splicing Protein DiA1. **V. McGrath,** *Trinity University*

A53 789.6 Retinitis Pigmentosa Alleles, in PRPF31 and PRPF6, Effects on Pre-Messenger RNA Splicing. **M. Vargas,** *Trinity University*

A54 789.7 RNA Therapeutics for Brain Tumors: Targeting Pre-mRNA Splicing Motifs to Generate Therapeutic Gene Isoforms. **T. Hintelmann,** *Monmouth University*

A55 789.8 Uncovering Pre-messenger RNA Splicing Mechanisms in Retinitis Pigmentosa. **A. Wagle,** *Trinity University*

A56 789.9 Tissue and Sex-Specific Changes in RNA Editing During Induced Acute Inflammation. **C. Nichols,** *Missouri State University*

790
Protein synthesis, structure, modifications and interactions

A57 790.1 SDS-induced amyloid fibrillation of acidic fibroblast growth factor. **Z. Alraawi,** *University of Arkansas*

A58 790.2 Identification of Signaling Pathways and Phase Separating Domains that Drive Cajal Body Formation. **M. Logan,** *University of Mississippi Medical Center*

A59 790.3 Optimizing the cODC degron for Protein Control in Nematode Worms. **F. Valero-Davlia,** *Wabash College*

A60 790.4 Using De Novo Designed Protein Switches in C. elegans. **A. Berg,** *Wabash College*

A61 790.5 TMPRSS11a as a new target in aging. **C. Fernandez,** *Universidad de Chile*

A62 790.6 Zebrafish as a Model for Evaluating Coilin-Mediated microRNA Biogenesis. **D. McLaurin,** *University of Mississippi Medical Center*

A63 790.7 Coilin Modulates Nuclear Organization by Promoting Protein SUMOylation. **K. Lett,** *University of Mississippi Medical Center*

A64 790.8 Dynamic Interaction Network Involving the Conserved Intrinsically Disordered Regions in Human eIF5. **A. Marintchev,** *Boston University School of Medicine*

A65 790.9 Reading the message: Connections between the epigenetic landscape bromodomain activity. **K. Glass,** *University of Vermont*

A66 790.10 Analysis of the interactions between the HIV-1 Spike and the F7-22 "cooperating" antibody. **E. Parker Miller,** *Swarthmore College*

A67 790.11 Exploring ATAD2 bromodomain function in the dynamic epigenetic landscape. **K. Malone,** *University of Vermont Larner College of Medicine*

A69 790.13 A Truncated Mutant – The Most Common Sucrase-Isomaltase Deficiency in the Inuit Population: Cellular and Biochemical Characterization. **S. Tannous,** *University of Veterinary Medicine*

A70 790.14 The Effect of Glycosylation Modulators on the Trafficking and Interaction of Spike Protein S1 Subunit and Angiotensin-Converting Enzyme 2. **M. El Khoury,** *University of Veterinary Medicine Hannover*

A71 790.15 Design of variants of human fibroblast growth factor 1 with enhanced stability and cell proliferation activity. **S. Sonnaila,** *University of Arkansas*

A72 790.16 Biomarkers Indicative of Late Stage Alzheimer's Disease Found in the Brain and Retina. **T. Sein,** *Touro University Nevada*

A73 790.17 Monomeric CCTδ Interacts with Dynactin Associated Protein (dynAP). **B. Iwuagwu,** *University of Gothenburg*

A74 790.18 Crystal Structures of an E1-E2-ubiquitin Thioester Mimetic Reveal Molecular Mechanisms of Transthioesterification. **S. Olsen,** *University of Texas Health Science Center at San Antonio*

A75 790.19 Molecular Mechanism of Vibrio cholerae biofilm adhesion. **R. Weerasekera,** *Wesleyan University*

A76 790.20 Reserve-adaptive potential of sperm plasma in stallions of different ages. **M. Atroshchenko,** *The All-Russian Research Institute for Horse Breeding*

A77 790.21 Applying Crystallography and 19F NMR to investigate dynamics and partner protein interactions in a long chain Flavodoxin. **S. Khan,** *University of Kentucky*

A78 790.22 Characterizing BfpU, an Essential Protein in the Type IV Pilus of Enteropathogenic Escherichia coli. **J. Little,** *Virginia Commonwealth University*

A79 790.23 Structural basis for environmental sensing in Pseudomonas fluorescens. **M. Font,** *Deutsches Elektronen-Synchrotron*

A80 **790.24** Heterologous expression of methyl-coenzyme M reductase reveals the importance of organism-specific accessory proteins for proper assembly. **A. Gendron,** *Virginia Tech*

A81 **790.25** Molecular insights into regulation of PI3Kα. **H. Prasad,** *University of Victoria*

791
Protein interactions and binding

A82 **791.1** in vitro reconstitution of RhoGEF positioning reveals that centralspindlin transports and retains RhoGEF at the plus-end tips of microtubules. **L. Tao,** *University of Hawaii at Hilo*

A83 **791.2** Interface investigation the protein interaction interface between malate dehydrogenase and citrate synthase. **F. O'Murphy,** *University of San Diego*

A84 **791.3** Increased fatty acids in Type 1 Diabetes disrupts C-peptide's transport and downstream effect. **M. Jacobs,** *Michigan State University*

A85 **791.4** Specificity Determinants of Lysine Deacetylases. **T. Toro,** *Xavier University of Louisiana*

A86 **791.5** Investigations of BRAF Regulation through Auto-Inhibition and HRAS Interaction. **T. Trebino,** *University of the Sciences*

A87 **791.6** Functional Inferences Derived from Defining the Interactome of H3K9me2 Writers and Readers. **G. Pollin,** *Medical College of Wisconsin*

A88 **791.7** A Tale of Two Scavenger Receptors: Structure-Function Relationships of Purified SR-A1 and CD36. **H. Powers,** *Medical College of Wisconsin*

A89 **791.8** Blood Storage Solutions Effecting Advanced Glycated End Products (AGEs) N-CEL and N-CML on Red Blood Cell Membranes. **L. Skrajewski,** *Michigan State University*

A90 **791.9** Multiple pathways for Fig4 contributions to cellular homeostasis in yeast. **I. Khan,** *Trinity University*

A91 **791.10** Cross-talk between Histone Modifications Modulate Chromatin Reader Activity of the ATAD2B Bromodomain. **M. Phillips,** *University of Vermont*

A92 **791.11** Identifying Substrates of KDAC6. **K. Bornes,** *Xavier University of Louisiana*

A93 **791.12** Elucidation of Bacterial Peptidoglycan Signaling and Recognition in the Human Commensal Candida. albicans through the LRR domain of the peripheral Membrane Protein Cyr1p. **G. Crump,** *University of Delaware*

A94 **791.13** A New Method to Self-Associate Proteins Using a Cooperative DNA-binding Protein. **S. Shara,** *Kutztown University*

A95 **791.14** The DNA Binding Diversity of the SIX Homeodomain Transcription Factor Family. **A. Rivera Barreto,** *University of Puerto Rico Rio Piedras Campus*

A96 **791.15** Structural basis for interactions between RPTPζ/PTPRZ and the perineuronal net component tenascin-R. **S. Bouyain,** *University of Missouri-Kansas City*

A97 **791.16** Cartdridged Food Materials for 3D Printing of Alternative Meat: Regarding Modified Texture of 3D Printed Food according to the Ionic State of Particle Surface exposed on Protein Powder. **Y. Oh,** *Ewha Womans University*

A98 **791.17** Understanding the role of RTL8 proteins in Ubiquilin-2 biology. **H. Milaganur Mohan,** *University of Michigan*

A99 **791.18** Quantitative Analysis of HPV E2 Binding to DNA Binding Sites and Sequence Variants. **R. Evande,** *University of Delaware*

A100 **791.19** Homologues Phospholipases A2 isolated from Naja naja atra snake venom exhibit different activity against intact human erythrocytes. **L. Cabrera Hernández,** *University of Puerto Rico Rio Piedras*

792
Protein modifications

A101 **792.1** High Throughput Screening of Protein Arginine N-Methyltransferases – Filter Binding and Phosphor Screening (FBAPS) assay. **M. Rowley,** *University of British Columbia*

A102 **792.2** Proline reduces half-life of homocysteine thiolactone. **R. Bhattacharya,** *University of Delhi*

A103 **792.3** Quantitative proteomics profiling of lysine 2-hydroxyisobutyrylation in right atrial appendage from rheumatic heart valve disease patients. **H. Hou,** *The Institute of Cardiovascular Diseases & Department of Cardiovascular Surgery, TEDA International Cardiovascular Hospital, Tianjin University & Chinese Academy of Medical Sciences*

A104 **792.4** SIRT1-mediated Lysine Crotonylation is Involved in the Regulation of CaMKII Activity in Myocardium. **X. Wang,** *Center for Basic Medical Research, TEDA International Cardiovascular Hospital, Chinese Academy of Medical Sciences, Peking Union Medical College*

A105 **792.5** Investigating Phosphorylation of the Cardiac Potassium Channel hERG using MALDI-TOF Mass Spectrometry. **J. Bocetti,** *Wellesley College*

A106 **792.6** Characterization of Post-translational Modifications of Mitochondrial RNA Polymerase and Mitochondrial Ribosomal Protein L12. **K. Paluch,** *Hope College*

A107 **792.7** SUMO 2 the rescue: how SUMO2 regulates the mitochondria via Drp1 modification. **A. DeHaas,** *Johns Hopkins University*

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A251 805.10 Carbon Nanoparticles Induce Changes in ER-Stress Gene Expression Levels and Organelle Morphology. **A. Rogers,** *Pepperdine University*

A252 805.11 The Hsp90 Chaperone Regulates p38 Activation During ER Stress. **M. Enos,** *Pepperdine University*

A253 805.12 Effect of Protease Activated Receptor-2 antagonist in the transition from endometrium to endometriosis and ovarian cancer. **M. Ocasio-Rivera,** *University of Puerto Rico at Ponce*

A254 805.13 Protease Activated Receptor-2 (PAR-2) Antagonist potentially ameliorates the SARS-CoV-2 virus-induced Inflammatory Storm. **M. Vélez,** *University of Puerto Rico at Ponce*

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A257 805.16 The Role of TLR4 in Pentachlorophenol Stimulation of IL-1β Production in Human Immune Cells. **A. Seaton-Terry,** *Tennessee State University*

A258 805.17 Progranulin as a Context Dependent Signaling Molecule. **C. Okonya,** *Midwestern University*

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A274 806.2 Role of the Gβ5/R7-RGS complex in the regulation of pain transmission in sensory ganglia. **K. Degner,** *National Institute of Diabetes and Digestive and Kidney Diseases*

A275 806.3 New Insights into the Structure-Function Relationships of G Proteins Containing Disease-Associated Mutations. **K. Anazia,** *University of Florida*

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A277 806.5 Giα and β Proteins Associate in a Complex with Cannabinoid Receptor Interacting Protein 1a (CRIP1a). **E. Hughes,** *Wake Forest University School of Medicine*

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A280 806.8 Understanding the Role of Gβγ in the Cellular Regulation of Mutationally Activated Gαq/11. **J. Aumiller,** *Thomas Jefferson University*

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A284 807.2 TLK1-MK5 Axis Modulates Actin Filaments and Focal Adhesion Components to Promote PCa Cell Migration and Invasion. **M. Khalil,** *Louisiana State University Health Sciences Center- Shreveport*

A285 807.3 Non-canonical Recruitment of PKA Catalytic Subunits to RIα-driven Biomolecular Condensates. **J. Hardy,** *University of California, San Diego*

A286 807.4 Identification of a Pseudosubstrate Stimulatory Motif Uncovers Novel Roles of Cdc14 Phosphatase in Fungal Cell Wall Integrity. **K. Milholland,** *Purdue University*

A287 807.5 A mechanism of ACK1 activation in cancer via C-terminal UBA domain truncation. **E. Balasooriya,** *Brigham Young University*

A288 807.6 TLK1 Phosphorylates RAD54 To Promote Homology Driven DSB Repair. **I. Ghosh,** *LSUHSC*

A289 807.7 Molecular Dynamics Investigation of Oncogenic BRAF Mutations. **B. Markusic,** *University of Sciences*

A290 807.8 Investigation of Disease-Causing Point Variants of Vaccinia-Related Kinase 1 (VRK1). **M. Frederick,** *Winona State University*

A291 807.9 Localization of Cdc14 Isoforms to Ciliary Structures in Tetrahymena thermophila. **C. Goode,** *Purdue University*

A292 807.10 Assembly and Disassembly of PKA is Allosterically Controlled by Nucleotides and Metal Ions. **R. Maillard,** *Georgetown University*

A293 807.11 Novel PKC signaling in Alzheimer's Disease. **M. Gauron,** *University of California at San Diego*

A294 807.12 Human Cdc14 Phosphatase Stimulation by an Intramolecular Pseudosubstrate Motif. **B. Waddey,** *Purdue University*

A295 807.13 PP1cβ dephosphorylates cardiac myosin by MYPT-dependent and independent mechanisms. **E. Lee,** *University of Texas Southwestern Medical Center*

A296 807.14 Untangling the Web of Protein Kinase C Mediated Regulation of Naïve Vs Primed State of Pluripotency. **I. Baral,** *Rajiv Gandhi Centre for Biotechnology*

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A299 808.3 A Novel Cell Death Mechanism Involving the Sphingosine-to-Glycerophospholipid Pathway. **L. Leak,** *Stanford University*

A300 808.4 Ferroptosis Regulation by the NGLY1/NFE2L1 Pathway. **M. Murray,** *Stanford University*

A301 808.5 Effects of stimulants and HIV Proteins on Pyroptosis and Apoptosis Pathways in Human Brain Microvascular Endothelial (hBMVEC). **J. Ikedife,** *New Jersey City University*

A302 808.6 Prenylated Stilbenoids as Potential Adjuvants for Paclitaxel in the Treatment of Triple-Negative Breast Cancer. **S. Mohammadhosseinpour,** *Arkansas State University*

A303 808.7 Hypoxia Re-Oxygenation Modelling Using Cancer Cells Expressing Cell Cycle and Cell Death Probes to Understand the Dynamics of Resistance Mechanisms. **S. Tiwari,** *Rajiv Gandhi Centre For Biotechnology Thiruvananthapuram, Kerala, India*

A304 808.8 An endogenous polyunsaturated fatty acid, dihomo-gamma-linoleic acid, induces neurodegeneration in C. **elegans via ferroptosis. K. Lee,** *Michigan State University*

A306 808.10 Myo/Nog Cells Migrate to Areas of Cell Death and are Phagocytic in a Murine Model of Retinitis Pigmentosa. **C. Helm,** *Philadelphia College of Osteopathic Medicine*

A307 808.11 Fractionated Lichen Parmelia vagans Extract Exhibits Two distinct Antiproliferative Activities Against Human Cancer Cells. **V. Bondarenko,** *Touro University Nevada*

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A310 809.2 Molecular Mechanism by which Coumestrol Exerts its Anticancer Activity in Triple-Negative Inflammatory Breast Cancer. **K. Rodríguez-Mártir,** *UPR Rio Piedras*

A311 809.3 NUT Carcinoma: Investigating Drug Synergy and the Production of Drug Resistance. **C. Vaughan,** *Elon University*

A312 809.4 Upregulation of GCLC is Responsible for SFN-induced Tumor Cell Proliferation. **C. Jang,** *Kyungpook National University*

A313 809.5 cMET inhibition potentiates the tumor-selective damaging effects of NQO1-bioactivatable agents by compromising DNA repair. **S. Bhandare,** *IU School of Medicine*

A314 809.6 Small Molecule Anticancer Compound Modulates Cell Cycle DNA Damage Response Pathway and Inhibit Tumorigenesis in Triple Negative Breast Cancer. **S. Okpechi,** *LSU School of Medicine and Health Sciences Center*

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A316 809.8 Investigating the chromatin-modulated transcriptional response of cancer cells to drug treatment. **J. Vélez Velázquez,** *University of Puerto Rico at Ponce*

A317 809.9 Anti-cancer Effects of Coumestrol in Triple-Negative Inflammatory Breast Cancer 3D Models: Opportunities for In Vivo Studies. **A. Colon-Ortiz,** *University of Puerto Rico, Rio Piedras*

A318 809.10 B-Raf: How One Mutation Leads to Melanoma. **H. Zhao,** *The Governor's Academy*

A319 809.11 Anticancer and chemosensitization effects of Wee-1 kinase inhibitor Adavosertib (MK-1775; AZD-1775) in breast cancer cell lines. **N. Nieves Aviles,** *Universidad Central del Caribe*

A320 809.12 Pyridoxine and cobalamin supplementation effect regarding cell death in a human glioblastoma cell line. **C. Martínez-Mendiola,** *Autonomous University of the State of México*

A321 809.13 Differential Response of MED12 Downregulated Breast Cancer to Targeted Therapy. **S. Kermet,** *University of the Incarnate Word*

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A323 809.15 A novel cell-based Screening System Identifies Adefovir-dipivoxil as Suppressor of RET expression in medullary thyroid carcinoma. **T. Alqahtani,** *King Saud bin Abdulaziz University for Health Sciences (KSAU-HS)*

A324 809.16 The role of NMDA receptors subunits in the progression of inflammatory breast cancer (IBC). **L. Mendez-Santacruz,** *University of Puerto Rico*

A325 809.17 Natural Compounds as a Promising Therapeutic Agent for SPOP Downregulated Breast Cancer. **M. Araujo Rincon,** *University of the Incarnate Word*

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A328 810.3 A Novel Role for Glucocerebrosidase 1 (GBA1) in Parkinson's Disease. **N. Jayabalan,** *University of Queensland*

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A333 810.8 Does estrogen show neuroprotective effects on hypothalamic cells when induced by beta amyloid? **K. Henderson,** *Adelphi University*

A334 810.9 The primary astrocytic mitochondrial transplantation ameliorates ischemic stroke. **E. Lee,** *Hanyang University*

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A343 811.8 Cryptococcus neoformans capsule regrowth experiments reveal dynamics of enlargement and architecture. **E. Jacobs,** *Johns Hopkins Bloomberg School of Public Health*

A344 811.9 Clostridioides difficile surface layer protein triggered inflammasome activation is mediated by membrane lipid raft. **P. Tsai,** *National Cheng-Kung University*

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A348 812.3 Tobramycin Adaptation Alters the Antibiotic Susceptibility of Pseudomonas aeruginosa Quorum Sensing-Null Mutants. **K. Townsend,** *University of Kansas*

A349 812.4 Effect of Ciprofloxacin on Planktonic Pseudomonas aeruginosa. **C. Hill,** *Saint Louis University*

A350 812.5 Understanding the regulatory effects of a biofilm regulator (BifR) and the implication of its interactions in Burkholderia thailandensis. **E. Nkwocha,** *Louisiana State University*

A351 812.6 Outer Membrane Regulation in Acinetobacter: Controlling the Shield against Antibiotics. **A. Brown,** *Northeastern University*

A352 812.7 Providencia alcalifaciens is a Highly Antimicrobial Resistant Bacteria Found in a Suburban Creek. **C. Carlson,** *Trinity Christian College*

A353 812.8 Characterization of Putative Transcriptional Regulator Orf90. **K. Enquist,** *Vassar College*

A354 812.9 Colistin Action Against Planktonic Pseudomonas aeruginosa. **A. Paul,** *Saint Louis University*

A355 812.10 Treatment of Multidrug-Resistant Bacterial Infections Using Quantum Dots. **C. McCollum,** *University of Colorado Boulder*

A356 812.11 Genesis of Antibiotic Resistance (AR) LXXVI: Turbulence Modeling of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701(ERP-EGDT): Mechanism(s) Time-dependent Fluid Volume Overload Elicit Adverse Pressure Gradient (APG) in metarteriole. **R. Puente,** *Southwest Texas Junior College*

A357 812.12 Genesis of Antibiotic Resistance (AR) LXXVIII: Turbulence Modeling of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701(ERP-EGDT): Correlation of time (& fluid bolus) dependent pressure drop in boundary layer separation with adverse pressure gradient (APG) in tandem with exacerbated in-hospital mortality (ihm). **N. Padilla,** *Southwest Texas Junior College*

A358 812.13 Genesis of Antibiotic Resistance (AR) LXXIX: Turbulence Modeling of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Linear Correlation of CPPopt, GCS 3-8 and in hospital mortality (ihm). **A. Quiroz,** *Southwest Texas Junior College*

A359 812.14 Genesis of Antibiotic Resistance (AR) LXXX: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Temporal Correlation of Fluid Bolus, CPPopt(PRx), "Zone of Obstruction", Comatose (GCS 3), and In-Hospital Mortality (ihm). **C. Reta,** *Southwest Texas Junior College*

A360 812.15 Genesis of Antibiotic Resistance (AR) LXXXII: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: The "Von Kármán Vortex Street" (Vasospasm probability index(VPI)) Fillip Zone of Obstruction Consequent Comatose to ihm. **J. Flores,** *City of Eagle Pass Water Works*

A361 812.16 Genesis of Antibiotic Resistance (AR) LXXVII: Turbulence Modeling of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Fluid Volume Dependent Velocity Profile Spur Adverse Pressure Gradient(APG) in BLS.. **H. Montoya,** *City of Eagle Pass Water Works*

A362 812.17 Genesis of Antibiotic Resistance (AR) LXXXIII: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: Mechanism(S) of Von Kármán Vortex Street Induced Aberrant Velocity Pattern (Dean Number) Spur In Hospital Mortality (ihm). **H. Montoya,** *City of Eagle Pass Water Works*

A363 812.18 Genesis of Antibiotic Resistance (AR) LXXXIV: Turbulence Modeling(TM) of Hemodynamics in Simplified Severe Sepsis Protocol-2 (SSSP-2)-NCT01663701: ISP Afloat Transient APG Thrust VKVS to Hypoxia Rouse Erythropoiesis penultimate to GCS 3, and IHM. **H. Montoya,** *City of Eagle Pass Water Works*

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A364 813.1 Metabolomic characterization of Pseudomonas protegens secretions for identification of biopesticides against Bacterial Panicle Blight of rice. **S. Balboa,** *University of North Carolina at Chapel Hill*

A365 813.2 Applying Virtual Screening for Discovery of Novel Inhibitors of Wolbachia Endosymbiont of Brugia malayi Enoyl-Acyl Carrier Protein Reductase (FabI). **A. Chang,** *University of Texas at Austin*

A366 813.3 Alcohol-based Hand Sanitizer: Comparing Formulations to Aggressively withstand Bacteria. **M. Galloway,** *Lane College*

A367 813.4 Investigating Potential Therapeutic Activity of Designed Histone Derived Antimicrobial Peptides through Hybridization and Antibiotic Cocktails. **V. Alvarez,** *Wellesley College*

A368 813.5 Optimization of expression and purification of SUMO-tagged LL-37 peptides. **J. Himmelberger,** *DeSales University*

A369 813.6 Measuring Cytotoxicity of the Designed Antimicrobial Peptides DesHDAP1 and DesHDAP1-C on Human Embryonic Kidney Cells. **A. Hu,** *Wellesley College*

A370 813.7 Lacritin Bactericidal Peptide N-104 Targeting of Inner Membrane Transporters FeoB and PotH (SpuG) Individually Absent in N-104 Resistant Strains of Human Opportunistic Pathogen, P. aeruginosa PA14. **M. Sharifian Gh.,** *University of Virginia*

A371 813.8 Inhibition of Escherichia coli ATP synthase by dietary pomegranate phenolics. **M. Lakhani,** *A.T. Still University*

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A373 814.2 Effect of Sulindac in an in vitro AD Model Under hypoxic conditions. **O. Rivera,** *Florida Atlantic Universitry*

A374 814.3 Role of Stress Granules in the Pathogenesis of Pulmonary Hypertension Kosmas Kosmas 1,2, Fotios Spyropoulos1,2 ,Helen Christou 1,2 1 Department of Pediatric Newborn Medicine, Brigham and Women's Hospital, Boston, MA 02115, USA 2 Harvard Medical School, Boston, MA 02215, USA. **K. Kosmas,** *Brigham and Women's Hospital*

A375 814.4 Demystifying Cardiac Iron Deficiency in End-stage Heart Failure. **H. Zhang,** *University of Alberta*

A376 814.5 Effect of Short-Term and Long-Term Exposure to Sucrose on Protein Expression and Oxidative Modification of Glutathione-S-Transferase Mu 1 (GSTM1) in Liver of Wild Type Mice. **D. Boyd-Kimball,** *University of Mount Union*

A377 814.6 Thermal Stress and Antioxidant Activity in Sea Anemones, Exaiptasia pallida. **J. Rideb,** *University of St. Thomas*

A378 814.7 Internal Melanin and Oxidative Stress: An Investigation of Lizard Livers. **L. Wittle,** *Elon University*

A379 814.8 Antioxidant Effects of Pyrazoles in Ischemia/Reperfusion Injury in Cardiomyocytes. **E. Bess,** *LSU Health Shreveport*

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A381 815.2 Increased Fatty Acid Synthesis and Catabolism Supports Metastatic Breast Cancer Cell Migration. **C. Andolino,** *Purdue University*

A382 815.3 High-fat/high-carbohydrate diet increases glycogen accumulation in lung tissue in vivo. **A. James,** *College of Medicine, University of Kentucky*

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A384 815.5 Can Lactate Dehydrogenase Inhibition be Increased Efficiency of 1,25(OH)2D3 Vitamin in Prostate Cancer Animal Model? **C. Cakici,** *Istanbul Medipol University, School of Medicine*

A385 815.6 Characterizing Metabolic Changes in Cancer Cells after Treatment with an Extract Created from Walnuts. **C. Huang,** *San Jose State University*

A386 815.7 Mass Spectrometry Imaging Reveals Distinct Differences in Glycogen Accumulation in Lung Tumors from Appalachian Patients. **M. Buoncristiani,** *Department of Neuroscience, College of Medicine, University of Kentucky*

A387 815.8 A novel NSC small molecule inhibitor inhibits proliferation of triple-negative breast cancer cells through metabolic reprograming. **H. Yousefi,** *Louisiana State University Health Science Center (LSUHSC), Biochemistry & Molecular Biology*

A388 815.9 The Role of Annexin A6 in Triple-negative breast cancer metabolism and disease progression. **S. Williams,** *Meharry Medical College*

A389 815.10 A selenium-iron axis dictates cancer cell sensitivity to pharmacologic ascorbate. **C. Jankowski,** *Princeton University*

A390 815.11 Effects of cinnamon extract on sirtuin activity: potential for metabolic regulation blood glucose control. **A. Stockert,** *Ohio Northern University*

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A392 816.2 Brazilian Green Propolis Modulates Cholesterol Homeostasis in a Preclinical Guinea Pig Model. **A. de Miranda,** *USP*

A393 816.3 Effect of Transporter Genotype on the Rate of Caffeine Absorption. **I. Gjeci,** *Colby College*

A394 816.4 Characterizing the Drosophila Orthologs of Phosphoglycolate Phosphatase and Pyridoxal Phosphate Phosphatase. **J. Liu,** *Vassar College*

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A397 816.7 Effects of Salvia Hispanica on Metabolic Syndrome and Bone in Mouse Osteoblastic Cells – a miRNA analysis. **N. Garcia-Rodriguez,** *UTRGV*

A398 816.8 The Horizontally Transferred Arginine Kinase in Myxococcus Xanthus Has Evolved Roles in Multiple Physiological Processes. **L. MacLean,** *The College of Wooster*

A399 816.9 The Magnitude of Hidden Hunger and Cognitive Deficits of Children Living in Some Selected Orphanages in Kumasi, Ghana During the COVID Pandemic. **M. Asamoah,** *Kwame Nkrumah University of Science and Technology*

A400 816.10 Dietary Cholesterol-Induced Gut Microbes Drive Nonalcoholic Fatty Liver Disease Pathogenesis in a Murine Model. **J. Hermanson,** *University of Wisconsin-Madison*

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A404 817.4 Type 1 Diabetes: A Promising Dialogue between Promiscuous T Cell Receptor and H-2Db Peptide Complex. **R. Sharma,** *Albert Einstein College of Medicine*

A405 817.5 Hepatic Stearoyl-CoA desaturase deficiency-mediated induction of the insulin-like growth factor-binding protein 1 requires FGF21. **A. McGahee,** *University of Wisconsin-Madison*

A406 817.6 The Effects of Metformin on Skeletal Muscle Differentiation and Satellite Cell Function in C2C12 Myocytes and Juvenile Lean and Obese Mice. **S. Kinsey,** *University of North Carolina Wilmington*

A407 817.7 Association of Pre-Living Kidney Donation Body Mass Index with Post-Donation Estimated Glomerular Filtration Rate Decline. **E. Tantisattamo,** *University of California Irvine School of Medicine*

A408 817.8 Anti-obesity effect of Premature Citrus Extract in high-fat diet induced obesity mice. **P. Natraj,** *Jeju National University*

A409 817.9 Evaluation of the antioxidant activity of the ethyl acetate extract of Potentilla indica on kidneys of streptozotocin-induced diabetic rats. **C. Landa-Moreno,** *Universidad Michoacana de San Nicolás de Hidalgo*

A410 817.10 Evaluation of the antioxidant effects of green synthesis silver nanoparticles on brain from rats with experimental diabetes. **J. Lemus-de la Cruz,** *Universidad Michoacana de San Nicolás de Hidalgo*

A411 817.11 An organism-wide atlas of tissue crosstalk in physical activity. **W. Wei,** *Stanford University*

A412 817.12 The Bile Acid Receptor Tgr5 and High Fat, High Sugar-Induced Liver Injury. **J. Ferrell,** *Northeast Ohio Medical University*

A413 817.13 Antioxidant and anti-inflammatory effects of Eryngium carline inflorescences on rat liver diabetic rats. **M. Trejo-Hurtado,** *Universidad Michoacana de San Nicolás de Hidalgo*

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A415 818.2 LC-MS based urine metabolomic profiling indicate altered gut microbiome and host lipid metabolites in Parkinson's disease. **S. Jewell,** *University of Queensland*

A416 818.3 Probing the Central Role of Phosphatidylinositol Synthesis in Lipid Metabolism of Eukaryotic Cells. **A. Mandal,** *NIH*

A417 818.4 The Yeast Glycogen Synthase Kinase Homolog Rim11 Phosphorylates the Phosphatidic Acid Phosphatase Pah1 to Inhibit its Catalytic Activity. **S. Khondker,** *Rutgers University*

A418 818.5 Response of Trypanosoma brucei to Exogenous Fatty Acids in Low Lipid Conditions. **J. Saliutama,** *Clemson University*

A419 818.6 Role of Intestinal Stearoyl-CoA Desaturase 1 in Whole-Body Lipid Metabolism and Metabolic Health. **N. Burchat,** *Rutgers University*

A420 818.7 Yeast Pah1 PA phosphatase contains a novel domain within its N-terminal intrinsically disordered region. **G. Stukey,** *Rutgers University*

A421 818.8 Citric acid cycle metabolites regulate phosphatidate phosphatase activity from the oleaginous yeast Yarrowia lipolytica. **S. Pasham,** *Alabama A&M University*

A422 818.9 Amino Acid Metabolism Controls Fatty Acid Structure in Staphylococcus aureus. **S. Whaley,** *St. Jude Children's Research Hospital*

A423 818.10 Inhibition of Cardiac Glucose Transport Corrects Diabetic Cardiomyopathy Even Without Alleviation of Hyperglycemia. **S. Mia,** *Temple University*

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A427 819.3 Mutations in Caveolin Binding Motif Alter Human Follicle Stimulating Hormone Receptor Signaling. **K. Zahedi,** *Union College*

A428 819.4 The rate-limiting enzyme in the CDP-choline pathway is regulated by phosphorylation-domain charge density. **J. Foster,** *Dalhousie University*

A429 819.5 Altered Lipid Raft Composition Correlates with Oncogenic Potential. **A. Pascual,** *Midwestern University*

A430 819.6 Synthetic Assembly of Bacterial Divisome Machinery in Vitro. **C. Ferreira,** *University of Rhode Island*

A431 819.7 Lipid Raft Disruption Alters Human Follicle Stimulating Hormone Receptor Signaling. **R. Godek,** *Union College*

A432 819.8 Membrane Phosphoinositides Stabilize GPCR-arrestin Complexes and Provide Temporal Control of Complex Assembly and Dynamics. **J. Janetzko,** *Stanford University*

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A437 **820.4** A Metabolomics-Based Screening System for UDP-Dependent Glycosyltransferases Involved in Wallflower Specialized Metabolism. **R. Brody,** *Williams College*

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A442 **822.2** Unique structural and dynamic properties of the HNH nuclease in mesophilic and thermophilic Cas9 revealed by NMR. **H. Belato,** *Brown University*

A443 **822.3** Oxygen Tolerance in the [FeFe] Hydrogenase Cb HydA1. **P. Corrigan,** *Penn State University*

A444 **822.4** Application of Activity-Based Probe, MV151, in the Mammalian Nervous System Reveals New Insights into Proteasome Changes in Human Alzheimer's Disease Brain. **F. Turker,** *Johns Hopkins University School of Medicine*

A445 **822.5** Utilization of glucan phosphatase Starch Excess4 to enhance in-vitro starch degradation. **K. Weis,** *Skidmore College*

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A447 **822.7** Structure and Mechanism of Mammalian Stearoyl-CoA Desaturase-1 and its Redox Partners. **J. Shen,** *Baylor College of Medicine*

A448 **822.8** Purification and functional analysis of the ferrous iron transport protein B (FeoB) incorporated into SMA-copolymer nanodiscs. **M. Lee,** *UMBC*

A449 **822.9** The N-terminal Domain of Twinkle, the Replicative Helicase in Human Mitochondria, Binds DNA and is Essential in Supporting Processive DNA Synthesis by the Mitochondrial DNA Polymerase. **L. Johnson,** *Rutgers University*

A450 **822.10** Mechanistic insight into the initiation step of Methionine-Tyrosine-Tryptophan (MYW) adduct in Mycobacterium tuberculosis KatG. **T. Aziz,** *Auburn University*

A451 **822.11** Tunnel Shape of Aldehyde Deformylating Oxygenase Determines Length of Alkane Products. **S. Yazdani,** *International Centre for Genetic Engineering and Biotechnology*

A452 **822.12** Resonance Raman of the nitrite reductase action of heme-copper oxidoreductases. **C. Varotsis,** *Cyprus University of Technology*

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