



2022 ASP Annual Meeting
July 23 – 28, 2022
North Charleston Convention Center
Short Program



Saturday July 23, 2022

- 9:00 AM – 12:00 PM **Exploration of the Natural Products Magnetic Resonance Database**
Workshop - Meeting Room 6/7 - Presenters: **Roger Linington, Tamara Jordan** and **Matthew Pin** (Simon Fraser University)
- 9:00 AM – 12:00 PM **Mass Spectrometry-Based Bioassays - Workshop - Off Site – MUSC Campus**
Includes Tour of Mass Spectrometry Facility (Transportation on your own) – Presenters: **Angela Calderón** (Auburn University) and **Richard van Breemen**
- 1:30 PM – 4:30 PM **NIH Grantsmanship for Natural Product Researchers - Meeting Room 6/7 - Presenters: Michelle R. Bond** (NIH National Institute of General Medical Sciences), **Hye-Sook Kim** (NIH National Center for Complementary and Integrative Health), **Adam J. Kuszak** (NIH Office of Dietary Supplements), **Tawnya McKee** (NIH National Cancer Institute), **Barbara C. Sorkin** (NIH Office of Dietary Supplements) and **Patrick Still** (NIH National Center for Complementary and Integrative Health)
- 1:30 PM – 4:30 PM **Proteomics and Bioinformatics for Mechanism of Action Discovery - Off Site Workshop - MUSC Campus - Includes tour of Proteomics Facility (Transportation on your own)** - Presenter: **Nicholas J. Carruthers** (University of Michigan)
- 1:30 PM – 4:30 PM **Computational Chemistry Approaches Including DP4+ for NMR Predictions to Assist Assignment of Natural Product Structures - Off Site Workshop - MUSC Campus (Transportation on your own)** - Presenters: **Robert J. Doerksen** (University of Mississippi) and **Pankaj Pandey** (University of Mississippi)
- 6:00 PM – 9:00 PM **President's Opening Reception - Ballroom A - (Ticketed Event)**
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Sunday July 24, 2022

**Welcoming Remarks and Announcements /
Symposium I – Cryo-EM Drug Discovery - Ballroom A**
Chair: John Lemasters

- 8:00 AM – 8:30 AM **Mark T. Hamann** (Medical University of South Carolina), **Frank Mari** (National Institutes of Standards and Technology) and **Kerry McPhail** (ASP President, Oregon State University)
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- 8:30 AM – 9:15 AM **Alexis Rohou** (Genentech)
Supporting Drug Discovery and Research with Cryoem in Industry, with an Artisanal Touch
- 9:15 AM – 10:00 AM **Iain Mylchreest** (Thermo Fisher Scientific)
Impact of Advances in Cryo EM for Drug Discovery
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- 10:00 AM – 10:30 AM Break – **Ballroom Foyer**
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Symposium II – NP and Drug Discovery for SARS-CoV2 - Ballroom A
Chair: Stefan Sarafianos

- 10:30 AM – 11:15 AM **Barry R. O'Keefe** (National Cancer Institute, National Institutes of Health)
Clinical Development of the Antiviral Protein Griffithsin
- 11:15 AM - 11:35 AM **J Brent Friesen** (Dominican University)
Can Cannabidiol Help Prevent SARS-CoV-2 Infection?

11:35 AM – 11:55 PM **Hendrik Luesch** (University of Florida)
Sec61 Inhibitor Apratoxin S4 Potently Inhibits SARS-CoV-2 and Exhibits Broad-Spectrum Antiviral Activity

1:15 PM – 4:00 PM Presenters for Poster Session I Set up Posters
Ballroom B

Session S-PM1 – Advances in Cannabinoids - Ballroom A

Chair: Mahmoud Elsohly

1:45 PM – 2:15 PM **Mary Paine** (Washington State University)
Pharmacokinetic Cannabis-Drug Interactions: Weeding Mechanisms Using Translational Tools

2:15 PM – 2:45 PM **Marilyn Huestis** (Thomas Jefferson University)
Cannabinoids Offer Unique Mechanisms of Action for New Therapeutics but also Impair Driving & Brain Development

2:45 PM – 3:05 PM **Fridah Rotich and Joseph Mangun** (University of North Carolina at Greensboro)
Identifying Antimicrobial Constituents of Cannabis Sativa L. (Hemp) Against Methicillin-Resistant Staphylococcus Aureus (MRSA)

3:05 PM – 3:25 PM **Prakash Nagarkatti** (University of South Carolina)
Role of Epigenome and Microbiome in the Regulation of Inflammation by Cannabinoids

3:25 PM – 3:45 PM **Robert P. Driscoll** (Rousselet Robatel Centrifugation)
Utilization of Centrifugal Partitioning Chromatography (CPC) for the Isolation of Cannabinoid Fractions from Cannabis Distillates

3:45 PM – 4:05 PM **Emily R. Britton** (Waters Corporation)
Analytical Approaches for Characterizing Cannabinoids for Quality, Safety, and Research Applications

Session S-PM2 – Chemical Ecology - Ballroom C1/C2

Chair: Melany Puglisi



1:45 PM – 2:10 PM **Erik Sotka** (College of Charleston)
Marine Herbivore Offenses Against Algal Chemical Defenses

2:10 PM – 2:35 PM **Marcy Balunas** (University of Michigan)
Trachymyrmex septentrionalis Fungus-growing Ants as a Model for Exploring Unique Aspects of Host-microbe Chemical Ecology

2:35 PM – 2:50 PM **Monica Pupo** (University of São Paulo)
Uncovering Functions and Applications of Specialized Metabolites from Microbiomes of Brazilian Stingless Bees

2:50 PM – 3:05 PM **Carla Menegatti** (Virigina Tech)
Novel Oxidized Alkaloids from the Millipede Ischnocybe plicata

3:05 PM – 3:20 PM **Lesley-Ann Giddings** (Smith College)
Molecular indicators of environmental change in an Antarctic Polar Desert

3:20 PM – 3:35 PM **Skylar Carlson** (University of the Pacific)
Understanding the Chemically Mediated Microbiome of Caulerpa spp.

3:35 PM – 3:50 PM **Emily Brown** (Florida Gulf Coast University)
Predator Cues Target Signaling Pathways in Toxic Algal Metabolome

3:50 PM – 4:05 PM **Shmuel Carmeli** (Tel Aviv University)
Studies Toward Understanding the Ecological Role of Microcystis spp. Modified Peptides

4:05 PM – 6:30 PM

Poster Session I – Ballroom B

Poster #'s P-001 – P-124

Chair: **Mohamed Ali M. Ibrahim**

All posters need to be picked up by Tuesday 9:00 AM

ASP is not responsible for lost or damaged posters

7:00 PM – 10:00 PM

Younger Members Event – Casino Night/(Ticketed Event) - **Ballroom A**

Monday July 25, 2022

Symposium III – Carbon Dioxide Reduction and Utilization - **Ballroom A**

Chair: Tadeusz Molinski

8:45 AM – 9:15 AM

Tadeusz Molinski (University of California, San Diego)

Chasing Carbon. Sequestration of CO₂ to Save a Planet

9:15 AM – 10:00 AM

Ming Yang (Clemson University)

Design of Single-Site Heterogeneous Catalysts for Energy and Environmental Applications

10:00 AM – 10:30 AM

Break – **Ballroom Foyer**

Session M-AM1 – Botanicals and Resilience - **Ballroom A**

Chair: Angela Calderón

10:30 AM – 11:00 AM

D. Craig Hopp (Deputy Director, Division of Extramural Research National Center for Complementary and Integrative Health National Institutes of Health)

The NCCIH Natural Products Clinical Trials Resource: How to Communicate with the FDA About Your Study

11:00 AM – 11:30 AM

Amala Soumyanath (Oregon Health & Science University)

Towards Optimized Clinical Trials of Centella Asiatica, a Neurologically Active Botanical

11:30 AM – 12:00 PM

Giulio Pasinetti (Icahn School of Medicine and Mount Sinai)

Microbiota metabolites modulate the T helper 17 to regulatory T cell (Th17/Treg) imbalance promoting resilience to stress-induced anxiety- and depressive-like behaviors

12:00 PM – 12:20 PM

Hellen A. Oketch-Rabah (USP)

Ashwagandha Root Chemistry and Potential Liver Toxicity

12:20 PM – 12:40 PM

Wendy Strangman (University of North Carolina Wilmington)

Assessment of In Vitro ADME of Medicinal Plant Extracts

12:40 PM – 1:00 PM

Amy Keller (University of Colorado Denver)

(-)-Epicatechin Improves Vasoreactivity, Mitochondrial Respiration and Cellular Signaling in a Rat Model of Cardiovascular Disease

Session M-AM2 – Synthesis Methodologies - **Ballroom C1/C2**

Chair: James Fuchs

10:30 AM – 11:15 AM

Darren Dixon (Oxford University)

New Broad Scope Catalytic Strategies for Simplifying Complex Natural Product Synthesis

11:15 AM – 11:45 AM

Jeffrey Johnston (Vanderbilt University)

New Chemical Tools and Strategies that Enable Discoveries in Natural Product-Based Therapeutic Development

11:45 AM – 12:15 PM

Tadeusz Molinski (University of California, San Diego)

Axiniside-1. Complete Stereostructure of a Complex Glycolipid

12:15 PM- 12:35 PM	Elizabeth Parkinson (Purdue University) <i>Synthetic Natural Product Inspired Cyclic Peptides for Discovery of Bioactive Natural Products and Biocatalysts</i>
12:35 PM – 12:55 PM	Andrew Riley (University of Illinois at Chicago) <i>Discovery of Potent Opioid Ligands Derived from <i>Picralima nitida</i> Alkaloids</i>
3:00 PM – 5:00 PM	Hands-On Training of IDBac, an Informatics Tool for Strain Prioritization – Workshop -Meeting Room 3 Presenters: Brian Murphy (University of Illinois at Chicago), Laura Sanchez (University of California, Santa Cruz) and Chase Clark (University of Wisconsin-Madison),

Tuesday July 26, 2022

Symposium IV – Emerging Technologies - Ballroom A

Chair: R. Thomas Williamson

7:45 AM – 8:25 AM	Jonathan Goodman (Cambridge University) <i>From Spectrum to Structure: DP4-AI and Data-Driven NMR Analysis</i>
8:25 AM – 8:55 AM	Clemens Anklin (Bruker BioSpin Corp.) <i>Modern Advanced NMR Spectroscopy for non-NMR Experts</i>
8:55 AM – 9:25 AM	Roberto Gil (Carnegie Mellon University) <i>Reference-Free Quantitative NOE and the Structural Value of Two-Bond Proton-Carbon ($^2J_{CH}$) Coupling Constants for Configurational Analysis Small Molecules</i>
9:25 AM – 9:45 AM	Hyunwoo Kim (Dongguk University) <i>DeepSAT: Learning Molecular Structures from Nuclear Magnetic Resonance Spectroscopy</i>
9:45 AM – 10:15 AM	Break – Ballroom Foyer



Symposium V – Biosynthesis - Ballroom A

Chair: Bradley Moore

10:15 AM – 11:00 AM	Ben Shen (Scripps Florida) <i>Leverage a Large Actinobacterial Strain Collection and Genome Database for Natural Products and Drug Discovery</i>
11:00 AM – 11:30 AM	Roland Kersten (University of Michigan) <i>Biosynthesis of Side-Chain-Macrocyclic Peptides in Plants</i>
11:30 AM – 12:00 PM	Bo Li (UNC Chapel Hill) <i>Biosynthesis of a Copper-Containing Antibiotic</i>

12:00 PM – 12:15 PM	DEI Workshop Lunch Pick-Up (Ticketed) DEI Workshop (Sponsored by Procter & Gamble) - Ballroom A Chairs: Lesley-Ann Giddings and Christine Salomon
12:15 PM – 12:30 PM	Shanina Sanders Johnson (Spelman College)
12:30 PM – 12:45 PM	Marvella Ford (Hollings Cancer Center)
12:45 PM – 1:30 PM	Q&A



Symposium VI – Innovations in NP Based Controls for Cancer - Ballroom A

Chair: Fred Valeriote

- 1:30 PM – 2:15 PM **Nancy Klauber-DeMore** (Medical University of South Carolina)
The Anti-Proliferative Effects of Oral Boswellia serrata, a Frankincense Extract, in Patients with Breast Cancer
- 2:15 PM – 2:45 PM **David Turner** (Virginia Commonwealth University)
Targeting Nutritional AGE Bioavailability Using Natural Products
- 2:45 PM – 3:05 PM **James McChesney** (University of Mississippi and Cloaked Therapeutics, LLC)
TumorSelectTechnology® Enhancing Safety and Efficacy of Cytotoxic Chemotherapeutics
- 3:05 PM – 3:25 PM **Esther Guzman** (Florida Atlantic University)
Marine Natural Products with Selective Activity Against Triple Negative Breast Cancer 3D Cultures
- 3:25 PM – 3:45 PM **Janae D. Sweeney** (South Carolina State University)
Val16A SOD2 Polymorphism Promotes Epithelial Mesenchymal Transition Antagonized by Muscadine Grape Skin Extract in Prostate Cancer Cells
- 3:45 PM – 4:05 PM **Sierra McDonald** (University of South Carolina School of Medicine)
Panaxynol Alleviates Murine Colitis Associated Colorectal Cancer via Macrophage Suppression
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4:05 PM – 6:30 PM

Poster Session II – Ballroom B

Poster #'s P-125 – P-242

Chair: **Jonathan Chekan**

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7:00 PM – 11:00 PM

An Evening at the South Carolina Aquarium (*Ticketed Event*)

Wednesday July 27, 2022

Symposium VII – Bioengineering and Informatics Technologies - Ballroom A

Chair: Karen Nelson

- 8:30 AM – 9:15 AM **Wenjun Zhang** (University of California Berkeley)
Natural Product Biosynthesis: Go Beyond Natural Evolution
- 9:15 AM – 10:00 AM **Nadine Ziemert** (University Tuebingen)
Bioinformatics Pipelines and Tools to Guide the Discovery of New Natural Products
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- 10:00 AM – 10:30 AM Break – **Ballroom Foyer**
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Session W-AM1 – Natural Products Synthesis - Ballroom A

Chair: Daniel Romo

- 10:30 AM – 11:10 AM **Frank Fang** (Eisai)
Transition Metal-Free Assembly of Eribulin: Prins Macrocyclizations in the Halichondrin Series
- 11:10 AM – 11:30 AM **Liela Romero** (Baylor University)
An Organocatalytic Strategy for the Selective Interhalogenation of Alkenes, Alkynes and Dienes
- 11:30 AM – 11:45 AM **Paul Scesa** (Florida Atlantic University)
Role of Macrocyclic Conformational Steering in a Kinetic Route toward Bielschowskysin
- 11:45 AM – 12:00 PM **John MacMillan** (University of California, Santa Cruz)
Harnessing Non-Enzymatic Transformations in Natural Product Biosynthesis
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Session W-AM2 – Genome Mining - *Ballroom C1/C2*

Chair: Eric Schmidt

- 10:30 AM – 11:00 AM **Yousong Ding** (University of Florida)
Genome-aided Discovery of New Enzymes
- 11:00 AM – 11:20 AM **Neil L. Kelleher** (Northwestern University)
Correlative Metabologenomics of 111 Fungi Reveals Thousands of Metabolite/Gene Cluster Pairs
- 11:20 AM – 11:40 AM **Jie Li** (University of South Carolina)
Correlational Networking Guides the Discovery of Hidden Lanthipeptide Proteases
- 11:40 AM – 12:00 PM **Wenjia Gu** (Zymergen Inc.)
Targeted Discovery of Natural Products from Massive Metagenomic Diversity
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Session W-PM1 – Natural Products Investigations Around the World: Africa - *Ballroom A*

Chair: Abiodun Falodun

- 1:15 PM – 1:45 PM **Turibio Tabopda Kuiate** (Medical University of South Carolina/ University of Yaounde)
- 1:45 PM – 2:05 PM **Nassifatou Koko Tittikpina** (University of Lome)
A LC-MS Method Development led to the Discovery of New Compounds from the Trunk Barks of Pterocarpus erinaceus Poir (Fabaceae)
- 2:05 PM – 2:25 PM **Alexandros Polyzois** (Rhodes University)
Stromatolite Chemical Profiles and Microbial Consortia Vary Throughout Sites Along the Coast of the Eastern Cape, South Africa
- 2:25 PM – 2:45 PM **Elhadj Balde** (Institut de recherche et de développement des plantes médicinales et alimentaires de guinee)
Traditional Guinean Management of Breast Diseases in Low and Middle Guinea
- 2:45 PM – 3:05 PM **Ogechukwu Chukwuemerie** (Nnamdi Azikiwe University Awka Anambra State Nigeria)
Toxicological Analysis and Antimalarial Potentials of Secondary Metabolites of Curvularia lunata, an Endophyte Obtained from the Leaves of Azadirachta indica
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Session W-PM2 – Natural Products Investigations Around the World: Central-South America/Caribbean - *Ballroom C1/C2*

Chair: Winklet Galimore

- 1:15 PM – 1:45 PM **Nandakumara Sarma** (USP)
USP Botanical Dietary Supplements and Herbal Medicines Pan American Expert Panel
- 1:45 PM – 2:05 PM **Eduardo Caro-Diaz** (University of Puerto Rico Medical Sciences Campus)
Cyanobacterial Pseudo-natural Products: Virtual Synthesis and Evaluation of Drug-likeness
- 2:05 PM – 2:25 PM **Paulo Vieira** (University of São Paulo)
Exploring the Chemical Diversity of Phytoparasitic Fungi
- 2:25 PM – 2:45 PM **Rita Gonçalves** (Federal University of Espirito Santo)
Avocadene Identified from Persea americana Mill. Seeds as a Potential Anticancer Against Gastric Adenocarcinoma Cells
- 2:45 PM – 3:05 PM **Roberto Berlinck** (Universidade De Sao Paulo)
Phomactinine, the First Nitrogen-Bearing Phomactin, Discovered by Extensive Media Optimization and Metabolomics Analyses
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Symposium VIII – Younger Investigators - *Ballroom A*

Chair: Jon Clardy and C. Benjamin Naman

- 3:20 PM – 3:50 PM **Courtney Thomas** (South Carolina State University)
Determination of Anti-AGE Properties of SC Native Pseudognaphalium obtusifolium
- 3:50 PM – 4:10 PM **Kelli McDonald** (Auburn University)
Ashwagandha Botanical-Drug Interactions: Potential CYP Induction
- 4:10 PM – 4:30 PM **Ethan Older** (University of South Carolina)
Sulfonolipids: Human Microbial Metabolites with Unique Dual Activity in Mediating Inflammation
- 4:30 PM – 4:50 PM **Barbara Adaikpoh** (University of Illinois at Chicago)
Characterization of Endogenous Promoters for the Heterologous Expression of Biosynthetic Gene Clusters in Burkholderia Bacteria
- 4:50 PM – 5:10 PM **Caitlin McCadden** (University of Florida)
Genome Mining of Bacterial Cytochrome P450 Enzymes for Novel Biocatalysts
- 5:10 PM – 5:30 PM **Aswad Khadilkar** (University of California Santa Cruz)
Assigning Mechanism of Action to Natural Products in Multiple Biological Contexts Using Gene Expression and Phenotypic Screening Methods Established by the HIFAN Program
- 5:30 PM – 5:45 PM **Zhenjian Lin** (University of Utah)
Ancient Defensive Terpene Biosynthetic Gene Clusters in the Soft Corals
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Symposium IX – Financing and Institutional Priorities - *Ballroom A*

Chair: Rick Warner

- 7:00 PM – 7:30 PM **John Warner**
South Carolina Centers of Economic Excellence
- 7:30 PM – 7:50 PM **Patrick Still** (NCCIH)
Funding for Natural Products Research at the National Center for Complementary and Integrative Health
- 7:50 PM – 8:10 PM **Michelle Bond** (NIGMS)
Funding for Natural Products Discovery and Analysis at National Institute of General Medical Sciences
- 8:10 PM – 8:30 PM **Sean Ash** (Maxim Merchant Capital)
- 8:30 PM – 8:50 PM **Jin K. Cha** (National Science Foundation (NSF))
The National Science Foundation: Funding Opportunities and Priorities
- 8:50 PM – 9:20 PM **Rick Warner** (Coastal 8)
The Need for Speed and Scale to Address the Impacts of A 1.5c Warming World
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Thursday July 28, 2022

Session TH-AM1 – Marine - *Ballroom A*

Chair: Amy Wright

- 8:00 AM – 8:30 AM **Jaclyn Winter** (University of Utah)
Accessing New Terpene Scaffolds from Marine-Derived Fungi
- 8:30 AM – 9:00 AM **Emily Mevers** (Virginia Tech)
Chemical Investigations into the Microbiota of Marine Egg Masses
- 9:00 AM – 9:20 AM **Nicole Avalon** (University of California, San Diego)
The Structure, Biosynthesis, and Metal-Binding Properties of Leptocheilin, a Cytotoxic Metabolite from the Filamentous Marine Cyanobacterium Leptolyngbya sp.
- 9:20 AM – 9:35 AM **William Mendoza** (University of Puerto Rico)
Chemoinformatic Synthesis and Analysis of Cyanobacterial Pseudonatural Products
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Session TH-AM2 – Mass Spectrometry: Tools and Applications - *Ballroom C1/C2*

Chair: Lukasz Ciesla

8:00 AM – 8:30 AM	Hosein Mohimani (Carnegie Mellon University) <i>Computational Methods for Discovering Bioactive Natural Products by Mining Large Mass Spectral Datasets</i>
8:30 AM – 8:45 AM	Trevor Clark (Simon Fraser University) <i>Evaluation of Ion Mobility Spectrometry for Improving Constitutional Assignment in Natural Products</i>
8:45 AM – 9:00 AM	Scott Jarmusch (Technical University of Denmark) <i>Salting the Earth: Streptomyces-Streptomyces Antibiosis via Lydicamycin Production</i>
9:00 AM – 9:15 AM	Evelyn Abraham (Pennsylvania State University) <i>A Comparison of Genetic and Chemometric Techniques for Authentication of Dried Herbal Products: A Case Study with Ocimum Spp.</i>
9:15 AM – 9:30 AM	Yi Zhao (Lehman College, City University of New York & The Graduate Center, City University of New York) <i>Metabolic Profiling and Alkaloid Analysis of American Aconitum Species by UPLC-qTOF-MSe</i>
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9:30 AM – 10:00 AM	Break – Ballroom Foyer

Award Symposium I - *Ballroom A*

Chair: Cindy Angerhofer

10:00 AM – 10:45 AM	Jason Crawford (Yale University) - Matt Suffness Young Investigator Award 2021 <i>Metabolism at the Human-Microbe Interface</i>
10:45 AM – 11:30 AM	Laura Sanchez (University of California, Santa Cruz) - Matt Suffness Young Investigator Award 2022 <i>Mass spectrometry imaging as a powerful tool for microbial natural product research</i>
11:30 AM – 12:30 PM	John H. Cardellina II (ReevesGroup) - Varro E. Tyler Prize 2021 <i>The Long and Winding Road – How a Marine Natural Products Chemist Became a Candidate for the Varro Tyler Prize</i>

Award Symposium II - *Ballroom A*

Chair: Ben Shen

1:45 PM – 2:45 PM	Bradley Moore (University of California at San Diego) Norman R. Farnsworth Research Achievement Award 2021 <i>A Biosynthetic Journey to Discover and Apply Nature's Specialized Chemistry</i>
2:45 PM – 3:45 PM	Hung-wen (Ben) Liu (University of Texas at Austin) Norman R. Farnsworth Research Achievement Award 2022 <i>Exploring the Diversity of Unusual Sugar Biosynthesis</i>
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4:00 PM – 6:15 PM	ASP Business Meeting - <i>Ballroom C1/C2</i> ASP Members Welcome (Associate Members may attend but Voting Privileges are for Full Members Only)
6:30 PM – 7:00 PM	Closing Reception – <i>Ballroom Foyer</i>
7:00 PM – 10:00 PM	Closing Ceremony and Banquet – <i>Ballroom A</i> (Ticketed Event)

**Thank you for your participation in the 2022 ASP Meeting!
See you in Maryland in 2023!**

