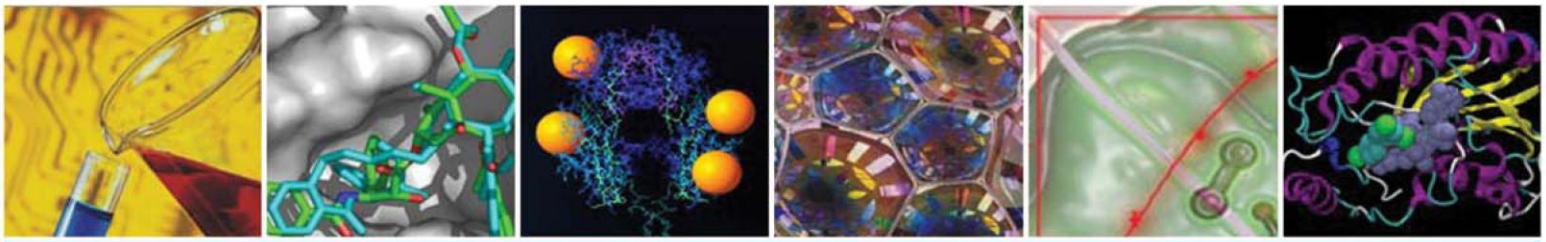
TWENTIETH ANNUAL SYMPOSIUM

ICB&DD



Institute of Chemical Biology & Drug Discovery

"Natural Products and Biologicals: Recent Advances and Future Prospects"

Thursday, October 1, 2026 ◆ Student Activities Center

Distinguished Speakers

Dr. Sudhir Agrawal, *ARNAY Sciences*
Dr. Audrey Bernstein, *SUNY Upstate*
Dr. Dipannita Kalyani, *Merck*
Dr. Jingfang Ju, *Stony Brook University*
Dr.William Wuest, *Emory University*
Dr. Ben Shen, *UF Scripps Institute*
Dr. David Sherman, *University of Michigan*

Poster Sessions ◆ Poster Awards

For more information, please visit
http://ws.cc.stonybrook.edu/icbdd/

Stony Brook University

From the Director

The primary objective of the Institute of Chemical Biology & Drug Discovery (ICB&DD) is to establish and sustain a world-class "Center of Excellence" in chemical biology and drug discovery at Stony Brook University. The rapid and impressive advancements in chemical biology during the last decade have clearly demonstrated that solutions for a vast majority of medical problems rely on the understanding of the molecular basis of diseases, therapeutic targets, drug actions, and drug resistance. ICB&DD promotes highly productive interdisciplinary and collaborative research among chemists, biologists, medicinal chemists, pharmacologists, and physicians to tackle major biomedical problems to find solutions including the discovery of novel therapeutic drugs and innovative diagnostic tools.

—Iwao Ojima, Director, Institute of Chemical Biology & Drug Discovery

Dr. Iwao Ojima received his B.S., M.S., and Ph.D. (1973) degrees from the University of Tokyo, Japan. He joined the Sagami Institute of Chemical Research and held a position of Senior Research Fellow until 1983. He joined the faculty at the Department of Chemistry, State University of New York at Stony Brook first as Associate Professor (1983), was promoted to Professor (1984), Leading Professor (1991), and then to Distinguished Professor (1995). He served as the Department Chair from 1997 to 2003. He has been serving as the founding Director for the Institute of Chemical Biology and Drug Discovery (ICB&DD) from 2003. He has a wide range of research interests in synthetic organic and medicinal chemistry as well as chemical biology, including discovery and development of anticancer agents, antimicrobials, and targeted drug delivery systems. His awards and honors include Arthur C. Cope Scholar Award (1994), E. B. Hershberg Award for Important Discoveries of Medicinally Active Substances (2001), the Medicinal Chemistry Hall of Fame (2006), ACS Award for Creative Work in Fluorine Chemistry (2013), and E. Guenther Award in the Chemistry of Natural Products (2019) from the American Chemical Society; the Chemical Society of Japan Award (1999); Outstanding Inventor Award (2002) from the Research Foundation of the State University of New York; Elected Fellow of J. S. Guggenheim Memorial Foundation, the American Association for the Advancement of Science, the New York Academy of Sciences, the American Chemical Society, the National Academy of Inventors and the European Academy of Sciences.

ICB&DD's History and Mission

The ICB&DD was established in 2004 with Stony Brook University's institutional support as well as the NYSTAR Faculty Development Award. One of ICB&DD's strengths is that it was founded by reorganizing existing exceptional talents on campus, and thus the core of the institute is a well proven entity with an excellent history. ICB&DD is open to a wide range of collaborative research programs with pharmaceutical and biotechnology industrial firms. Members of ICB&DD are from the departments of Chemistry, Biochemistry and Cell Biology, Pharmacological Sciences, Microbiology and Immunology, Physiology and Biophysics, Applied Mathematics and Statistics, Medicine, Pathology, Oral Biology and Pathology, Psychiatry and Behavioral Health, Neurobiology and Behavior, Laufer Center for Physical and Quantitative Biology, Cancer Center, and Cold Spring Harbor Laboratory. In addition, ICB&DD has two core laboratories located in the Chemistry Building: Analytical Instrumentation Laboratory and Discovery Chemistry Laboratory.

ICB&DD has three major programs: Structural and Computational Biology Program, Infectious Diseases Research Program, and Cancer Research Program. In addition, ICB&DD has been providing critical support to the Chemical Biology Training Program.

ICB&DD collaborates with the Stony Brook University Cancer Center to develop a Cancer Therapeutics Program. ICB&DD integrates the existing strengths at Stony Brook University in the basic medical sciences as well as medicinal chemistry and brings in complementary expertise from outside to explore drug discovery and development. At present, ICB&DD focuses on drug discovery in therapeutics for cancer, infectious diseases, neurodegenerative diseases, and inflammation.

Through ICB&DD connections, many collaborative research teams have been created, and research proposals have successfully acquired grants from the NIH and other funding agencies. (Total grant funding > 90M). Currently, there are nine ongoing ICB&DD-designated projects (Total funding: $23M).

ICB&DD 20th Annual Symposium

Thursday, October 1, 2026 - Student Activities Center Auditorium

"Natural Products and Biologicals: Recent Advances and Future Prospects"

9:15 am to 9:30 am	**Opening Remarks** ***Dr. Jeffrey Gustafson,*** Professor of Chemistry, Chair of Symposium Organizing Committee ***Dr. Peter Igarashi,*** Knapp Endowed Dean, Renaissance School of Medicine, Stony Brook University ***Dr. Iwao Ojima***, Distinguished Professor and Director, Institute of Chemical Biology and Drug Discovery (ICB&DD), Stony Brook University
9:30 am to 10:15 am	*Moderator:* Dr. John Haley **Dr. Sudhir Agrawal,** Founder and President, ARNAY Sciences LLC *"RNA-Targeted Therapeutics: 40 Years of Development"*
10:15 am to 11:00am	*Moderator:* Dr. John Haley **Dr. Audrey Bernstein,** Professor of Biochemistry and Molecular Biology, SUNY Upstate Medical School *"Cellular Drivers of Fibrosis: Insights from the Eye"*
11:00 am to 11:45 am	*Moderator:* Dr. Stuti Sharma **Dr. Dipannita Kalyani**, Principal Scientist, Discovery Chemistry, Merck *"Oral Peptide Inhibitors of IL-1β for Atherosclerotic Cardiovascular Disease"*
11:45 am to 1:00 pm	**Lunch and Poster Session** *(SAC Ballroom A and B for students and the Shore Club for faculty)*
1:00 pm to 1:45 pm	*Moderator:* Dr. Jeffrey Lipshultz **Dr. Jingfang Ju,** Professor of Pathology and Vice Chair for Experimental Pathology, Stony Brook University. Program Leader of Oncogenic Drivers and Mechanisms of Carcinogenesis (ODMC), Stony Brook Cancer Center *"Development of Multimodal miRNA-Based Cancer Therapeutics"*
1:45 pm to 2:30 pm	*Moderator:* Dr. Jeffrey Lipshultz **Dr. William Wuest,** Professor of Chemistry, Emory University *"Slaying Superbugs One Natural Product at a Time"*
2:30 pm to 3:30 pm	**Coffee Break and Student Poster Session** *(SAC Ballroom A)*
3:30 pm to 4:15 pm	*Moderator:* Dr. Jeffrey Gustafson **Dr. Ben Shen,** Professor of Chemistry and Molecular Medicine, the Herbert Wetheim UF Scripps Institute "*The Actinobacteria Strain Collection and Genome Database Community Resource Enabling Natural Products Research and Drug Discovery"*
4:15 pm to 5:00 pm	*Moderator:* Dr. Jeffrey Gustafson **Dr. David Sherman**, Hans W. Vahlteich Professor of Medicinal Chemistry, Microbiology and Immunology. Associate Dean for Research and Graduate Education-Pharmacy, University of Michigan *"Discovery and Engineering of Natural Product Molecules for Drug Development"*
5:00 pm to **5:05 pm**	**Closing Remarks**: Dr. Jeffrey Gustafson
5:05 pm to 6:00 pm	**Reception and Poster Session *(three poster awards)***, *(SAC Ballroom A)*
6:00 pm to 6:15 pm	**Announcement of Poster Awards:** Dr. Jeffrey Lipshultz
6:15 pm	**DINNER,** *Ballroom B (by invitation only)*

Speakers

Sudhir Agrawal, Ph.D. is the founder and president of ARNAY Sciences and an affiliate professor in the Department of Medicine at UMass Chan Medical School. Over the past three decades, his research has focused on discovering and developing RNA therapeutics, including antisense and immunotherapy. He is currently focused on the chemical biology of oligonucleotides to advance RNA therapeutics. He has introduced gapmer antisense for targeted RNA knockdown and modified RNA antisense for splice modulation, both widely used in approved antisense drugs and in candidates under development. Recently, he has developed spatial cyclic oligonucleotide structures to enhance RNA therapeutics. He has published over 300 research papers, is a co-inventor on more than 400 patents worldwide, and has edited four books on oligonucleotide chemistry and antisense technology. Dr. Agrawal currently serves on the scientific advisory boards of several biotechnology companies. Dr. Agrawal is the co-founder of Idera Pharmaceuticals and has served in various roles, including CSO, CEO, and chairman, retiring in 2017. He earned his D.Phil. in Chemistry and conducted postdoctoral research at MRC's Laboratory of Molecular Biology in Cambridge, UK. In 2022, the Oligonucleotide Therapeutic Society awarded him the Lifetime Achievement Award.

"RNA-Targeted Therapeutics: 40 Years of Development"

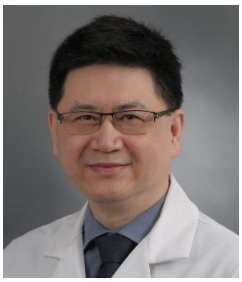
RNA-targeted therapeutics have emerged as a well-established platform for drug discovery and development, with approved drugs that act through various mechanisms. In this approach, an oligonucleotide modulates the expression of the disease-associated RNA through hybridization. Chemistry has been crucial in imparting drug-like properties to oligonucleotides. Gapmer and modified RNA chemistries are commonly used in approved antisense drugs. Evidence suggests that protein binding and interactions with pattern recognition receptors have become sources of off-target activity for oligonucleotides. To address these issues, we have explored, in addition to chemistry, oligonucleotide shapes that bring the 3′ and 5′ ends together in transient cyclic structures. Several types of cyclic oligonucleotide structures have been created and examined to develop improved drugs.

Audrey Bernstein, Ph.D. is the Co-Founder and Chief Scientific Officer of DUB Therapeutics, a biotechnology academic spin-out company developing a next-generation, self-delivering siRNA platform to promote regenerative healing. She led the generation of the preclinical data package that underpins the company's regulatory strategy and translational pipeline, bridging discovery science with clinical development through her dual roles in academia and industry. Dr. Bernstein is also a tenured Professor in the Department of Ophthalmology and Visual Sciences at SUNY Upstate Medical University with joint appointments in Cell and Developmental Biology and Biochemistry and is a Research Health Scientist at the Syracuse VA Medical Center. She previously served as faculty at the Icahn School of Medicine at Mount Sinai in New York City from 2004-2017. Recently, she has been honored with the SUNY Chancellor's Award for Excellence in Scholarship and Creative Activity. Her research program focuses on molecular mechanisms of wound healing, fibrosis, ocular disease, and regenerative repair, with a strong emphasis on therapeutic translation.

"Cellular Drivers of Fibrosis: Insights from the Eye"

Fibrosis is a common response to chronic injury and a major cause of progressive organ dysfunction. This talk will examine conserved cellular programs that drive fibrotic disease, including persistent inflammation, immune–stromal crosstalk, fibroblast activation, extracellular matrix accumulation, tissue stiffening, and mechanosensitive signaling. Ocular tissues offer a valuable model in which to study these processes because they are anatomically accessible and well suited to localized therapeutic delivery. Particular emphasis will be placed on self-delivering siRNA as a strategy for durable target suppression after a single dose. Because fibrotic and vascular eye diseases affect a large patient population, this work has direct clinical relevance, while the eye's accessibility and anatomy also make it an effective system for developing therapies that may inform the treatment of fibrosis in other organs.

Speakers



Jingfang Ju Ph.D received his Ph.D. in molecular biology and biochemistry from the Norris Comprehensive Cancer Center at the University of Southern California. Dr. Ju completed his postdoctoral fellowship in molecular pharmacology at Yale University. He is currently Professor of Pathology, Vice Chair for Experimental Pathology at the Renaissance School of Medicine, Stony Brook University and Program Leader of Oncogenic Drivers and Mechanisms of Carcinogenesis (ODMC) at Stony Brook Cancer Center. Dr. Ju is also the scientific co-founder of iNanoRNA Therapeutics LLC and Curamir Therapeutics Inc. His main research interest is understanding the molecular mechanisms underlying non-coding microRNAs (miRNAs) in cancer stem cell resistance to chemotherapy and targeted therapy, epithelial-to-mesenchymal transition (EMT), autophagy, and apoptosis. Dr. Ju holds seven patents on miRNA-based cancer therapeutics for treating both solid and liquid tumors and has published over 120 manuscripts. The goal of his laboratory is to develop innovative multimodal miRNA-based therapeutics for cancer. In addition to having an NCI-funded laboratory, he was a recipient of the Glaxo Wellcome Oncology Clinical Research Scholar Award.

"Development of Multimodal miRNA-Based Cancer Therapeutics"

Therapeutic resistance and disease relapse remain critical barriers to successful cancer treatment across modalities, including chemotherapy, immunotherapy, and CAR-T cell therapy. Due to tumor heterogeneity, conventional single-target inhibitors often fail as cancer cells rapidly bypass inhibition via alternative oncogenic pathways. To address this challenge, our laboratory leveraged the multi-targeting capacity of microRNAs (miRNAs), which regulate gene expression by binding imperfectly to the 3'-untranslated regions (3'-UTR) of multiple target mRNAs. Over two decades, we identified several tumor suppressor miRNAs that are downregulated or lost in multiple malignancies. To overcome translational limitations in stability, efficacy, and delivery, we engineered a novel platform using nucleoside analogs specifically 5-fluorouracil (5-FU), gemcitabine (Gem), and methotrexate (MTX) to chemically modify these tumor suppressor miRNAs. Our first-generation 5-FU-modified miR-15a concurrently suppressed key oncogenes, including *BCL2*, *BMI1*, *YAP1*, *WEE1*, and *CHK1*. This multi-targeted inhibition demonstrated robust efficacy across preclinical models of colorectal cancer, pancreatic cancer, non-small cell lung cancer, and acute myeloid leukemia (AML). Furthermore, a Phase I clinical trial evaluating 5-FU-miR-15a in patients with refractory or relapsed AML demonstrated that the compound was well tolerated and possessed clear therapeutic activity. Gem-modified tumor suppressor Gem-miR-129 and 5-FU-modified 5-FU-miR-129 were potent inhibitors in NSCLC to eliminate EGFR-resistant tumor cells by suppressing multiple targets, BCL2, YAP1, PBX3, and HMGB1. MTX-5-FU-Gem-miR-15a further enhanced tumor specificity and efficacy in both ovarian and pancreatic cancer in vitro and in vivo. Chemically modifying tumor suppressor miRNAs with nucleoside analogs represents a potent, multi-targeted therapeutic strategy capable of disrupting redundant oncogenic networks and overcoming therapy resistance in heterogeneous tumors. miRNA-based cancer therapeutics may provide a unique therapeutic strategy as safe and effective multimodal agents for future cancer care.

Dipannita Kalyani, Ph.D. received her B.A. in Chemistry and Mathematics and M.A. in Computational Chemistry from Bryn Mawr College in 2003. She then completed her Ph.D. in C-H functionalization at the University of Michigan in 2008 with Professor Melanie Sanford. Following her doctoral studies, she was a postdoctoral fellow with Professor Scott Denmark at the University of Illinois at Urbana-Champaign, where she focused on asymmetric catalysis. In 2011, she began her independent academic career at St. Olaf College and received tenure in 2017. At St. Olaf College, she established an externally funded research program in organometallic catalysis and mentored ~60 undergraduate researchers. In 2018, she transitioned to industry, joining the Discovery Chemistry group at Merck where she became adept at employing microscale and nanoscale HTE capabilities to accelerate drug discovery programs across neuroscience, cardiometabolic, immunology, and infectious diseases. Over the past three years, she has assumed leadership roles in peptide drug discovery programs, advancing novel chemical matter from hit to lead. Beyond impacting drug-discovery programs, she has established and led numerous industry-academic collaborations to build capabilities in diverse fields including electrochemistry, machine learning, radiochemistry, C-H functionalizations and late-stage peptide functionalizations. She is also a passionate advocate for mentorship and has served as a mentor for several programs, including the American Chemical Society (ACS) MEDI mentorship program.

"Oral Peptide Inhibitors of IL-1β for Atherosclerotic Cardiovascular Disease"

Interleukin-1β (IL-1β) is a central driver of inflammation and a clinically validated target in atherosclerotic cardiovascular disease, as established by the CANTOS trial with canakinumab. However, the therapeutic impact of IL-1β blockade has been limited by the need for injectable biologics with prolonged systemic exposure and associated safety considerations. This presentation will describe the discovery of a new class of orally delivered macrocyclic peptide inhibitors of IL-1β that replicate the anti-inflammatory pharmacology of canakinumab while enabling improved drug-like properties. The presentation will highlight how mRNA display, structural biology, and rational peptide design were integrated to overcome key challenges in potency, stability, and pharmacokinetics, culminating in robust pre-clinical in vivo efficacy.

Speakers

William Wuest, Ph.D received his B.S. *magna cum laude* in Chemistry and Business from the University of Notre Dame in 2003. He received his Ph.D degree in 2008 from the University of Pennsylvania working with Professor Amos B. Smith, III. His graduate work focused on both the total synthesis of peloruside A and the development of Anion Relay Chemistry (ARC). He performed his postdoctoral research training at Harvard Medical School as a Ruth Kirschstein-NRSA Postdoctoral Fellow in the laboratory of Professor Christopher T. Walsh, where he investigated unusual enzymatic transformations in the construction of non-ribosomal peptide natural products. In 2011, he began his independent career as an Assistant Professor at Temple University, then he moved to Emory University as an Associate Professor of Chemistry with tenure and as the inaugural Georgia Research Alliance Distinguished Investigator that same year. In 2021, he was promoted to his current position of Professor of Chemistry. His research focuses on the modification of natural products through total synthesis to develop innovative, pathogen-specific therapeutics. He is the recipient of the NIH ESI Maximizing Investigators Research Award (MIRA), NSF CAREER Award, the 2017 ACS Infectious Diseases Young Investigator Award, the 2020 David W. Robertson Award from the ACS Division of Medicinal Chemistry, the New Investigator Award from the Charles E. Kaufman Foundation, the Thieme Journal of Chemistry Award, the Young Investigator Award from the Center for Biofilm Engineering at Montana State University, and the Italia-Eire Foundation Distinguished Teacher of the Year Award from the College of Science and Technology at Temple University. He has also been selected as an Alan Leshner Public Engagement Fellow by the AAAS, a Scialog Fellow by the RCSA, and a SVPR Faculty Leadership Fellow by the Office of Research at Emory. Dr. Wuest is also very entrepreneurial in spirit and strongly believes that scientific research should have some translational benefit. As evidence of this viewpoint, he founded the startup company NovaLyse Biosolutions focusing on developing next generation antiseptics while at Temple University and is the holder of several patents on antibiotic scaffolds. Since arriving at Emory, he has founded the Emory Biotech Consulting Club, which partners with the Office of Technology Transfer, to engage graduate students in early-stage consulting experiences with startup companies at the university.

"Slaying Superbugs One Natural Product at a Time"

The importance of natural products as anticancer and antibiotic compounds is undisputed due to their wide application as potent and effective pharmaceuticals. In contrast to broad-spectrum agents, the development of species-specific, "narrow-spectrum" antibacterials would be of interest to the medical community serving as novel therapeutics and to microbiologists as chemical probes to deconvolute complex bacterial communities. Over the past decade, our group has looked to Nature for inspiring chemical scaffolds and has leveraged diverted total synthesis (DTS) to study bacteria. The talk will highlight recent efforts from our laboratory using DTS in antibiotic discovery and development; covering antibiotic synthesis, biological evaluation, and target identification.

Ben Shen, Ph.D. received his B.Sc. from Hangzhou University (1982), M.S. from the Chinese Academy of Sciences (1984) and Ph.D. from Oregon State University (1991) and his postdoctoral research at University of Wisconsin-Madison (1991-1995). He served on the faculty at the University of California Davis (1995-2001), University of Wisconsin-Madison (2001-2010), and The Scripps Research Institute (2011-2022). Currently, Dr. Shen is University of Florida Research Foundation Professor, Professor, Departments of Chemistry and Molecular Medicine. Director, Natural Products Discovery Center at The Wertheim University of Florida Scripps Institute (2022-) and Professor, Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research (2011-). Research in the Shen Lab centers on chemistry, biochemistry, and genetics of natural product biosynthesis and mining of Actinobacteria genomes for natural products and drug discovery. The Shen Lab has authored 316 publications and 13 published patents.

"The Actinobacteria Strain Collection and Genome Database Community Resource Enabling Natural Products Research and Drug Discovery"

The Natural Products Discovery Center (NPDC) at The Wertheim UF Scripps Institute houses one of the world's largest Actinobacteria strain collections and genome databases. The Actinobacteria Strain Collection contains 122,552 strains isolated over the last eight decades and from 77 different countries, representing microbial and natural product (NP) diversities that are not available anywhere else and impossible to reproduce in laboratory settings today. The Actinobacteria Genome Database contains 18,762 curated genomes from the NPDC collection, with additional 25,375 Actinobacteria genomes from the NCBI RefSeq dataset curated using the same workflow as the NPDC genomes for comparison, representing the largest Actinobacteria Genome Database with the sequenced strains publicly available. The NPDC web portal enables users to mine the Genome Database, compare the NPDC and RefSeq genomes, correlate the curated genomes with the individual strains, and request the physical strains, representing the only integrated infrastructure that allows the broad scientific community to mine Actinobacteria genomes and request corresponding strains for experimentation at this large scale. The overall objective of this Community Resource is to accelerate NPs research by uniting sequenced, curated genomic data with publicly accessible strain distribution. We envisage broad research initiatives, ranging from fundamental sciences to translational applications, driving innovation from discovery to real-world solutions for medicine, agriculture, and the bioeconomy. Selected examples from our current research will be presented to highlight the impact of such a Community Resource on NPs research and drug discovery.

Speakers

David Sherman, Ph.D received his undergraduate degree in chemistry at University of California Santa Cruz (Phil Crews, research advisor) and Ph.D. in synthetic organic chemistry at Columbia University with Gilbert Stork. After a postdoc at Massachusetts Institute of Technology with Professor Herman Eisen, and four years at Biogen, he moved to the John Innes Institute as a research scientist with Sir Professor David A. Hopwood. After 13 years at the University of Minnesota (1990-2003), Dr. Sherman moved to the University of Michigan and is now the Hans W. Vahlteich Professor of Medicinal Chemistry, Professor of Chemistry, and Professor of Microbiology & Immunology. Dr. Sherman's laboratory is in the U-M Life Sciences Institute where his research focuses on the discovery and analysis of bioactive natural products, their metabolic pathways, and diverse biosynthetic enzymes. The functional, structural, and computational analysis of new biocatalysts for late-stage C-H functionalization, polyketide assembly, and pericyclic reactions is a particular focus of the group. Professor Sherman is faculty lead for the U-M Natural Products Biosciences Initiative and co-founder of the Natural Products Discovery Core. Dr. Sherman was founding Director of the Center for Chemical Genomics at the U-M Life Science Institute (2004 – 2013). The LSI maintains core facilities covering the areas of high throughput screening and drug discovery, structural biology and protein production with resources to support cross-disciplinary science including genetics; genomics and proteomics; molecular and cellular biology; and structural, chemical and computational biology. Dr. Sherman currently serves on the advisory board for Michigan Drug Discovery. *Notable Awards:* A. C. Cope Scholar Award (ACS), Fellow, American Association for the Advancement of Sciences (AAAS), Charles Thom Award (Society for Industrial Microbiology and Biotechnology), Distinguished Lecturer Award (American Society for Microbiology), and the 2024 Farnsworth Award (American Society for Pharmacognosy).

Discovery and engineering of natural product molecules for drug development

My talk will focus on various highlights from select research programs initiated and on-going over the past three decades. One project that has spanned this period relates to modular polyketide synthases, and our development of chemoenzymatic synthesis/cascade biocatalysis to generate new macrolide antibiotic molecules. Our work has probed the mechanisms and engineering of key catalytic domains, and we have linked our ability to generate new molecules with antibiotic activity and ribosome inhibition. A second area of long-standing interest has focused on fungal derived indole alkaloids and assembly of complex multi-ring systems through two classes of enzymes that catalyze intramolecular Diels-Alder reactions. Late-stage C-H oxidation and halogenation has also featured as an important aspect of macrolides and indole alkaloids as the precise modification of their core molecules ultimately enables potent biological activity. More recently, we have developed new semi-synthetic natural product molecules to advance an anti-HIV Nef series of lead compounds that provide a potential path to eradicate the virus. Pathway engineering has been essential for strain optimization to assure a sustainable supply of the two plecomacrolide source materials. I will also highlight studies to identify the endosymbiont producer of ET-743, and current programs to characterize cyanobacterial bloom-derived metabolites in the Great Lakes. Finally, our field collection programs have resulted in a growing marine/terrestrial-derived microbial strain collection and pure natural products/extract library. Centered at the Life Sciences Institute Natural Product Discovery Core, we have benefitted from an institutional Biosciences Initiative that has expanded our capabilities significantly, and highlights will be described.

NOTES

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