



UNIVERSITY OF MARYLAND
CENTER FOR ENVIRONMENTAL SCIENCE

COMMENCEMENT

MAY 27, 2021

ORDER OF COMMENCEMENT

President Dr. Peter Goodwin presiding

Platform Party

USM Senior Vice Chancellor for Academic and Student Affairs Dr. Joann Boughman

UMCES Vice President for Education Dr. Lawrence Sanford

Marine Estuarine Environmental Sciences Program Director Dr. Timothy Canty

Faculty Senate Chair Dr. Michael Wilberg

Master of Ceremonies: Chief of Staff David Nemazie

WELCOME & GREETINGS. Dr. Peter Goodwin

President, University of Maryland Center for Environmental Science

REMARKS FROM THE GOVERNOR..... The Honorable Lawrence Hogan, Jr.
State of Maryland

GREETINGS FROM THE BOARD OF REGENTS..... Regent Barry Gossett
Board of Regents, University System of Maryland

GREETINGS FROM THE CHANCELLOR..... Chancellor Jay Perman
University System of Maryland

AWARDS PRESENTATION

UMCES Staff Award..... Julianna Brush, Contract/Grant Specialist
Horn Point Laboratory

Molly Pickel, Assistant to the Executive Director
Institute of Marine and Environmental Technology

Outstanding Faculty Mentor Award..... Dr. Jeremy Testa
Associate Professor, Chesapeake Biological Laboratory

UMCES Student Service Award..... Christina Goethel
Graduate Student, Chesapeake Biological Laboratory

President's Award for Outstanding Research Support..... Anne Gustafson
Senior Faculty Research Assistant, Horn Point Laboratory

President's Award for Excellence in Application of Science..... Dr. Rosemary Jagus
Professor, Institute of Marine and Environmental Technology

COMMENCEMENT ADDRESS.....The Honorable Benjamin L. Cardin

U.S. Senator, State of Maryland

GREETINGS TO GRADUATES..... Dr. Timothy Canty
*Director, Marine Estuarine Environmental Sciences (MEES) Graduate Program
University of Maryland College Park*

CONGRATULATIONS TO GRADUATES..... Dr. Joann Boughman
*Senior Vice Chancellor for Academic and Student Affairs
University System of Maryland*

PRESENTATION OF CANDIDATES FOR DEGREES..... Dr. Lawrence Sanford
Vice President for Education, University of Maryland Center for Environmental Science

GRADUATE TRIBUTES.....*University of Maryland Center for Environmental Science faculty mentors*

CHARGE TO GRADUATES..... Dr. Peter Goodwin
President, University of Maryland Center for Environmental Science

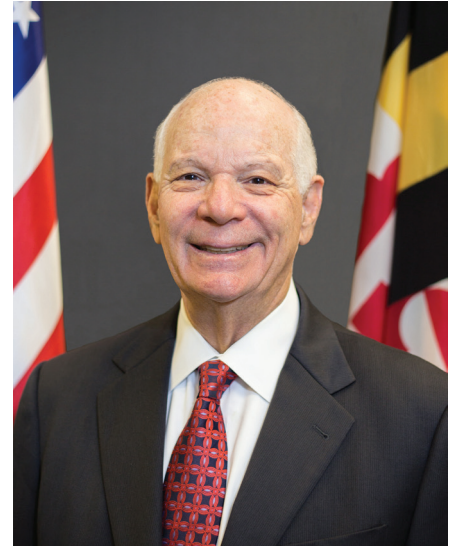
KEYNOTE SPEAKER

The Honorable Benjamin L. Cardin **U.S. Senator, State of Maryland**

A third-generation Marylander, Ben Cardin has been a national leader on health care, retirement security, fiscal, and environment issues while representing the people of Maryland in the U.S. Senate, and before that in the House of Representatives. First elected to the Senate in 2006, Senator Cardin currently serves as Chair of the Small Business and Entrepreneurship Committee, which is on the forefront of rebuilding our economy. He is a senior member of the Senate Foreign Relations, Finance, and Environment and Public Works committees.

Senator Cardin is a leading advocate for the Chesapeake Bay, which is the economic, historical, and cultural heart of Maryland. Nationally, he is a champion of protecting our clean air and clean water. He has introduced legislation to restore the health of America's great water bodies and is the leading proponent of investing in improvements to America's aging water infrastructure system while preparing it for the impacts of climate change. From 1987-2006, Ben Cardin represented Maryland's Third Congressional District in the U.S. House of Representatives and served for 17 years on the Ways & Means Committee. He was a member of the Maryland House of Delegates from 1967-1986. During his time as Speaker from 1979-1986, he reformed Maryland's property tax system, the school financing formula, and the ethical standards for elected officials.

A 1967 graduate of the University of Maryland School of Law (first in his class), he earned his B.A. degree in 1964 from the University of Pittsburgh (cum laude). He is a member of the U.S. Naval Academy Board of Visitors, the Johns Hopkins University Institute for Policy Studies' National Advisory Board and the St. Mary's College Advisory Board, Center for Study of Democracy.



AWARD RECIPIENTS

President's Award for Excellence in Application of Science

Dr. Rosemary Jagus

Professor, Institute of Marine and Environmental Technology

Dr. Rosemary Jagus, professor in molecular genetics at UMCES' Institute of Marine and Environmental Technology, has been recognized with the President's Award for Excellence in Application of Science for her contributions to increasing the diversity of scientists working in the marine sciences over the past two decades. In 2017, she was awarded the Wilson H. Elkins Professorship by the University System of Maryland for her dedication. As Project Director for NOAA's Living Marine Resources Cooperative Science Center (LMRCSC) at IMET, director of the IMET Summer Undergraduate Internship Program, and mentor to students in her lab, Jagus has used her eminence in the science field where she studies translational control of gene expression to inspire and rigorously train young scientists from under-served communities to pursue careers in science.



Since 2001, she has served as IMET Project Director of the LMRCSC, a training partnership with the University of Maryland Eastern Shore and other minority serving institutions, to increase the pool of young people from underrepresented communities in the marine sciences. Over the last 20 years, this program has graduated eight Ph.D. and four master's students. The IMET Summer Undergraduate Internship Program arose as a powerful way to introduce diverse students to careers in marine and environmental sciences and to provide a conduit for graduate school. More than 220 students from across the country have participated, and several students who pursued graduate degrees at UMCES after the internship were later awarded prestigious Knauss Fellowships.

President's Award for Outstanding Research Support

Anne Gustafson

Senior Faculty Research Assistant, Horn Point Laboratory

Senior Faculty Research Assistant Anne Gustafson has been given the President's Award for Outstanding Research Support to recognize her professional achievements and unfailing support through 31 years of research projects working with Professor Tom Fisher at UMCES' Horn Point Laboratory. She has provided exceptional contributions to research and outstanding service, played impressive roles in leading innovative research projects, and mentored members of the UMCES community.

Gustafson began as a faculty research assistant in Professor Fisher's lab in 1990, her job duties ranging from meeting ships to pick up water samples from Chesapeake and Delaware Bays to sampling streams and groundwater wells throughout the Choptank basin. She has become the general manager for lab projects, the corporate memory of the Fisher lab, and a mentor to other lab members, supervising and training other faculty research assistants. Her dedicated longtime service and contributions to UMCES exemplify excellence in supporting scientific research.



UMCES Student Service Award

Christina Goethel

Graduate Student, Chesapeake Biological Laboratory

The UMCES Student Service Award honors a graduate student who has provided outstanding service to their laboratory unit, UMCES, the University System of Maryland, their community, government agencies, and/or professional societies. The inaugural UMCES Student Service Award is presented to Christina Goethel. An academic and research standout at UMCES' Chesapeake Biological Laboratory--culminating most recently in a 2021-2022 Fulbright Fellowship--this award honors her commitment to service across multiple levels.

Goethel has served on professional workshops and meeting committees, on a faculty search committee, as a manuscript reviewer for six journals, on committees to organize mental health and social justice efforts at UMCES, and in numerous volunteer and outreach activities. However, her service on the UMCES Graduate Student Council elevates her contributions to an exceptional level. During her tenure as chair, she was instrumental in it becoming one of the most active partners in shared governance. She helped to advance new initiatives supported by the graduate students, including mental health, racial equity, and an UMCES Ombuds program, representing UMCES with distinction.



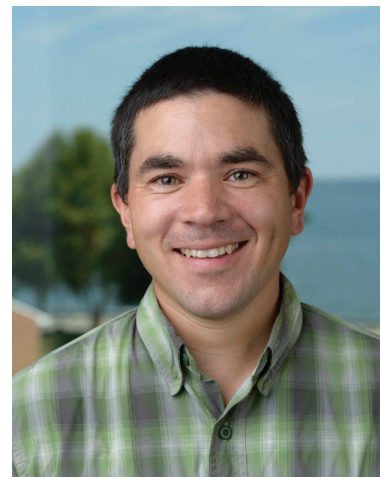
Outstanding Faculty Mentor Award

Dr. Jeremy Testa

Associate Professor, Chesapeake Biological Laboratory

Associate Professor and UMCES alumnus Jeremy Testa, a marine ecologist studying nutrient cycling in coastal systems, has been selected by the graduate student body to receive the Outstanding Faculty Mentor Award for his dedication to both science and his students. He is an exemplary member of UMCES who actively serves on numerous panels, search committees, and research advisory committees, all while balancing his research, family, and students' needs. His students note that he cares about their own personal growth as much as their development as scientists.

Since his arrival as a faculty member at Chesapeake Biological Laboratory in 2013, he has mentored more than 15 students and positively impacted the lives of many more. He has served as an advisor and mentor to five master's students, six National Science Foundation Research Experience for Undergraduates students, two College of Southern Maryland students, one visiting Ph.D. candidate, one Chesapeake Research Consortium (CRC) Chesapeake-Student Recruitment, Early Advisement, and two post-doctoral researchers. He has also served on 17 graduate student committees.



UMCES Staff Award

Julianna Brush

Contract/Grant Specialist, Horn Point Laboratory

Julianna Brush received the UMCES' Staff Award for her exceptional job performance as the Contract and Grant Specialist. Her can-do attitude, helpfulness, and dependableness under pressure coupled with her deep knowledge of funding agency requirements has significantly improved the efficiency, accuracy, and accountability of proposals submitted by UMCES. Her flexibility, cooperation, and collaboration with her peers at Horn Point Laboratory and other UMCES laboratories is exemplary. Her exceptional performance and ability to tackle new problems was seen recently in the process of submitting proposals to National Institute of Health relating to COVID-19. Her positive and helpful attitude makes her an important member of the UMCES community and reaches beyond the business office to interact and support others.



UMCES Staff Award

Molly Pickel

Assistant to the Executive Director

Molly Pickel received the UMCES' Staff Award for outstanding performance and diligence in her role as Assistant to the Executive Director of the Institute of Marine and Environmental Technology. Her efforts exceed expectations as she devotes her time not only to administrative responsibilities, but aiding in communication, outreach, fundraising and event coordination. She has helped plan and execute events such as IMET's Open House, the annual MEES Colloquium, and a visit by EU Ambassadors. In addition to her daily duties, she also shows her passion for IMET and UMCES' missions through her work on committees, including the Reaccreditation Steering Committee, Mental Health Committee, and serving as co-chair of IMET's Sustainability Committee, where she helps implement environmentally friendly practices and educational programs. She has succeeded in expanding awareness of IMET and its activities at UMCES and to the general public in Baltimore and beyond.



PARTICIPATING GRADUATES

DOCTOR OF PHILOSOPHY

Daniel Fucich

Marine Estuarine and Environmental Sciences/Environmental Molecular Biology and Biotechnology
Toxin antitoxin systems and other stress responses in picocyanobacteria and their ecological implications
Adviser: Dr. Feng Chen, Institute of Marine and Environmental Technology

Chelsea Wegner Koch

Marine Estuarine and Environmental Sciences/Earth and Ocean Systems
The significance of sea ice algae as a resource in the Pacific Arctic determined by highly branched isoprenoid biomarkers
Adviser: Dr. Lee Cooper, Chesapeake Biological Laboratory

MASTER OF SCIENCE

Lynda Bell

Marine Estuarine and Environmental Sciences/Environmental Science
Dynamic equilibrium beach profiles: Forces of offshore sediment transport in Maryland's Chesapeake Bay
Adviser: Dr. Lawrence Sanford, Horn Point Laboratory

Miles Charles Bolton

Marine Estuarine and Environmental Sciences/Earth and Oceans Systems
Evaluating feedbacks between vegetation and sediment dynamics in submersed aquatic vegetation (SAV) beds and created marshes of living shorelines in Chesapeake Bay
Adviser: Dr. Cindy Palinkas, Horn Point Laboratory

Alexandra Fireman

Marine Estuarine and Environmental Sciences/Ecological Systems
On the shell of the turtle: Identifying the isotopic niche of hawksbill sea turtles in Antigua, West Indies
Adviser: Dr. Ryan Woodland, Chesapeake Biological Laboratory

Hunter Hughes

Marine Estuarine and Environmental Sciences/Earth and Ocean Systems
Effects of seawater SR/CA variability on coral paleothermometry in the Florida Keys and Virgin Islands revealed by multiyear continuous monitoring
Advisers: Drs. Hali Kilbourne and Johan Schijf, Chesapeake Biological Laboratory

Jerelle Jesse

Marine Estuarine and Environmental Sciences/Ecological Systems
Quantifying drivers of mycobacteriosis in Atlantic striped bass and consequences of increased natural mortality on biological reference points
Adviser: Dr. Genevieve Nesslage, Chesapeake Biological Laboratory

Lauren Jonas

Marine Estuarine and Environmental Sciences/Environmental Molecular Science & Technology
Two marine sponges, *Lendelfeldia chondrodes* and *Hymeniacidion heliophile*, and their microbial symbionts: Roles in marine phosphorus cycling
Adviser: Dr. Russell Hill, Institute of Marine and Environmental Technology

Amanda Lawrence

Marine Estuarine and Environmental Sciences /Environmental Molecular Science and Technology
Investigating morphometric and physiological maturity alongside insulin-like androgenic gland expression and size of male *C. borealis* in Southern New England
Adviser: Dr. J. Sook Chung, Institute of Marine and Environmental Technology

Pinky Liao

Marine Estuarine and Environmental Sciences/Environmental Molecular Science and Technology
Cable bacteria and their microbial associations in lab-incubated sediment from Chesapeake Bay
Adviser: Dr. Sairah Malkin, Horn Point Laboratory

Morgan O'Hara Ross

Marine Estuarine and Environmental Sciences/Earth and Ocean Systems
Nutrients, chlorophyll and emergent harmful algal bloom species in coastal waters of Assateague Island National Seashore
Adviser: Dr. Judith M. O'Neil, Horn Point Laboratory

Zoraida Perez Delgado

Marine Estuarine and Environmental Sciences/Earth and Ocean Systems
Exploring the temperature and hydrologic response of tropical oceans to volcanic eruptions over the last 400 years using coral geochemistry
Adviser: Dr. Hali Kilbourne, Chesapeake Biological Laboratory

Dylan Taillie

Marine Estuarine and Environmental Sciences/Ecological Systems
Young forest management for sensitive bird species in Western Maryland
Adviser: Dr. Andrew Elmore, Appalachian Laboratory

GRADUATES 2021

DOCTOR OF PHILOSOPHY

Daniel Fucich

Marine Estuarine and Environmental Sciences/Environmental Molecular Biology and Biotechnology
Toxin antitoxin systems and other stress responses in picocyanobacteria and their ecological implications
Adviser: Dr. Feng Chen, Institute of Marine and Environmental Technology

Jacqueline Tay

Marine Estuarine and Environmental Sciences/Biological Oceanography
The population biology and ecosystem effects of the sea nettle, *Chrysaora chesapeakei*
Adviser: Dr. Raleigh Hood, Horn Point Laboratory

Hao Wang

Marine Estuarine and Environmental Sciences/Oceanography
A numerical investigation of variability in particulate organic matter transport and fate, phytoplankton and primary production, and denitrification in a partially mixed estuary
Adviser: Dr. Raleigh Hood, Horn Point Laboratory

Chelsea Wegner Koch

Marine Estuarine and Environmental Sciences/Earth and Ocean Systems

The significance of sea ice algae as a resource in the Pacific Arctic determined by highly branched isoprenoid biomarkers

Adviser: Dr. Lee Cooper, Chesapeake Biological Laboratory

Timothy Wynne

Marine Estuarine and Environmental Sciences/Biological Oceanography

Phenology of Cyanobacterial blooms in three catchments of the Laurentian Great Lakes

Adviser: Dr. Raleigh Hood, Horn Point Laboratory

MASTER OF SCIENCE**Lynda Bell**

Marine Estuarine and Environmental Sciences/Environmental Science

Dynamic equilibrium beach profiles: Forces of offshore sediment transport in Maryland's Chesapeake Bay

Adviser: Dr. Lawrence Sanford, Horn Point Laboratory

Miles Charles Bolton

Marine Estuarine and Environmental Sciences/Earth and Oceans Systems

Evaluating feedbacks between vegetation and sediment dynamics in submersed aquatic vegetation (SAV) beds and created marshes of living shorelines in Chesapeake Bay

Adviser: Dr. Cindy Palinkas, Horn Point Laboratory

Dana Bunnell-Young

Marine Estuarine and Environmental Sciences/Environmental Science

Dynamics of Nitrogen and Methane in Ground and Surface Waters

Adviser: Dr. Thomas Fisher, Horn Point Laboratory

Annaleise Conway

Marine Estuarine and Environmental Science/ Earth and Ocean Systems

Determining the toxicity of the UV filter oxybenzone in the hard coral, *Galaxea fascicularis*

Adviser: Dr. Carys Mitchelmore, Chesapeake Biological Laboratory

Alexandra Fireman

Marine Estuarine and Environmental Sciences/Ecological Foundations

On the shell of the turtle: Identifying the isotopic niche of hawksbill sea turtles in Antigua, West Indies

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University of Maryland
CENTER FOR ENVIRONMENTAL SCIENCE

The University of Maryland Center for Environmental Science leads the way toward better management of Maryland's natural resources and the protection and restoration of the Chesapeake Bay. From a network of laboratories located across the state, UMCES scientists provide sound evidence and advice to help state and national leaders manage the environment, and prepare future scientists to meet the global challenges of the 21st century.