

Lab Lines

FEBRUARY 2019

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CBL - CSM Internship Program

CBL welcomed three new interns from the College of Southern Maryland in January as part of the growing CBL - CSM internship program. Students, Alexis Hunt, Jessica Loveless, and Nicholas Johnson have joined the labs of Michael Gonsior, Laura Lapham, and Ryan Woodland. These interns will be developing their scientific skills through hands-on training and participating in ongoing projects in each of their faculty mentor's labs. The CBL - CSM internship program recognizes that there are multiple, often non-academic, challenges that constrain career opportunities in environmental STEM fields for community college students. The goal of these internships is to help community college students overcome the challenges they face in attaining experience in environmental STEM fields and provide them with an immersive experimental learning opportunity that emphasizes discovery. With this current group of students and moving forward with future cohorts, this research internship program will provide a unique, exciting and inclusive platform that exposes community college students to career opportunities in environmental science, showcases their accomplishments, and empowers them to attain fulfilling STEM careers.

RESEARCH & AWARDS

Drs. Johan Schijf, Andrew Heyes, and Michael Gonsior received an award from the Bailey Wildlife Foundation through the University System of Maryland Foundation, January 1, 2019 to December 31, 2019. The title for this project is: *A Global Defense for Coral Reef Wildlife: Creating Carbon-Negative Habitat.*

Drs. Carys Mitchelmore and Johan Schijf received an award from the National Oceanic Atmospheric Administration (MD Sea Grant), February 1, 2019 to January 31, 2020. The title for this project is: *Abundance and Variety of Microplastics in Surface Waters, Sediments, and Oysters: Relationship to Point-Sources and Land Use Practices.*

Drs. Ryan Woodland and Hongsheng Bi received an award from the National Oceanic Atmospheric Administration (MD Sea Grant), February 1, 2018 to January 31, 2020. The title for this project is: *Understanding the Distribution and Ecology of the Mysid Neomysis Americana, a Key Forage Species in the Chesapeake Bay.*

RESEARCH & AWARDS CNTD.

Drs. Thomas Miller and Carys Mitchelmore received an award from Maryland Industrial Partnerships (MIPS), February 1, 2019 to January 31, 2020. The title for this project is: *Automated Oyster Aquaculture with Solar Energy*.

STUDENT AWARDS

Caroline Wiernicki received the George Burlew Scholarship Grant from the Manasquan River Marlin and Tuna Club, contributing to her Masters research on Black Sea Bass' response to storm disturbances off Maryland.

OUTREACH

Visitor Center

The Chesapeake Biological Laboratory Visitor Center is currently closed for the winter season. Group tours of CBL can be arranged throughout the year by contacting the Outreach Coordinator.

Wave of Plastic

In late January, Dr. Helen Bailey, Amy Green, Sarah Brzezinski, and colleagues launched the Wave of Plastic project by hosting a two-day professional development workshop for middle school teachers from Calvert County Public Schools (CCPS) and St. Mary's County Public Schools (SMCPS). With the support of our scientists, teacher participants will write and pilot a Wave of Plastic curriculum unit focused on plastics and their environmental impacts. This 3-year project, funded by NOAA's Bay Watershed Education and Training (B-WET) program, will include outdoor watershed investigations on school grounds and will support the Next Generation Science Standards and Maryland Environmental Literacy Standard. Ultimately, this partnership program will produce a new curricular unit for SMCPS and CCPS middle schools, provide professional development for 43 middle school science teachers and 10 middle school Art/Media teachers, and will engage an estimated 2,200 students each year.

DEVELOPMENT

CBL Development Activity

This quarter there have been luncheons, coffees and receptions cultivating individual philanthropists in the area. Charity Navigator, a charity assessment organization that evaluates US charitable organizations, reported in 2017 the "majority of giving came from individuals. Specifically, individuals gave \$286.65 billion, accounting for 70 percent of all giving." In 2018, twice as many donors gave \$1,000 or more to CBL students and programs than in the year before. Many long-time donors have also increased their annual gifts to CBL. Corporate support also increased as PNC Bank, Toyota of Southern Maryland and Team Hyundai were sponsors of Science for Citizens seminars.

Foundation support is also being sought, such as grants from the Simon Foundation, the JES Avanti Foundation, Sea Pact, and the Temper of the Times Foundation. We're also seeking foundation support for an undergraduate internship program with the College of Southern Maryland.

RAMP**The Four Principles of Safety**

Recognize Hazards
Assess Risks
Minimize Hazards
Prepare for Emergencies

Laboratory Safety for Chemistry Students, by Robert H. Hill, Jr. and David C. Finster
Copyright © 2010 John Wiley & Sons, Inc.

RAMP is an acronym coined by Robert Hill, Jr. and David Finster in their textbook - Laboratory Safety for Chemistry Students – as a reminder for students to RAMP up for safety. It is also useful for us to remember this when working in the laboratory or even in our home environment. We deal with chemicals and equipment in almost every aspect of our lives - Windex at home, gasoline for our vehicles, yard and garden chemicals, and the chemicals we work with in the lab.

It is very important to understand the hazards of the laboratory that you are working in to ensure not only your safety, but also the safety of those who are working in the lab with you. This not only includes chemicals, but also the operation of the equipment that you will be using. The most important letter of this acronym is R. If you do not recognize the hazards you are dealing with, you will not be able to assess and minimize the risks and prepare for emergencies. You should never take unnecessary risks when performing an experiment and you should not underestimate the risks involved. You also need to avoid becoming complacent when using chemicals. You should never think that because you have gotten away with a certain behavior or short-cut in handling a chemical in the past, it will always work in your favor. Please remember to perform all experiments with safety in mind.

Incident

A recent graduate started a new job in a research laboratory. The individual needed to make a large quantity of a formalin solution from formaldehyde. The solution was prepared in a small carboy in the sink. While the employee was making the solution, it spilled in and all around the sink. The new employee left the laboratory without cleaning or reporting the spill. Shortly after this incident, another more experienced employee came into the lab and started to work. This individual, who was not informed of the spill, developed shortness of breath and stumbled into the hallway calling for help. After emergency treatment and hospitalization, it was discovered that he/she had an allergic reaction to formaldehyde and could no longer work in the laboratory.

The new employee did not recognize the hazard presented by the formaldehyde; neither did they clean up the spill or report it to a supervisor. Because of the lack of good safety practices, a co-worker was adversely affected. It is also probable that there was also a lack of safety education at the academic institution that the recent graduate had attended. Schools need to think of themselves as stakeholders in workplace safety. It is the institution's obligation to teach safety principles to their students and ensure they are practiced, thereby not sending graduates to the workplace without good safety habits.

So – remember to **RAMP** up for safety in the laboratory.

Wainger, L.A., Harms, N.E., Magen, C., Liang, D., Nesslage, G.M., McMurray, A.M., and Cofrancesco, A.F. 2018. *Evidence-Based Economic Analysis Demonstrates that Ecosystem Service Benefits of Water Hyacinth Management Greatly Exceed Research and Control Costs.* PeerJ.

Ulanowicz, R.E., 2019. *The Tripartite Nature of Causalities in Ecosystem Dynamics.* Current Opinion in Systems Biology.

Stratton, M.A., Nesslage, G.M., and Latour, R. In press. *Multi-Decadal Climate and Fishing Predictors of Abundance for U.S. South Atlantic Coastal Fishes and Invertebrates.* Fisheries Oceanography.

Damiano, M., and Wilberg, M.J., In press. *Population Dynamics of Eastern Oysters (Crassostrea Virginica) in the Choptank River Complex.* Fisheries Research.

Liang, D., Harris, L.A., Testa, J., Lyubchich, V., Filoso, S. In Press. *Detection of the Effects of Stormwater Control Measure in Streams Using a Bayesian BACI Power Analysis.* Science of the Total Environment.

Garrod, A., Fandel, A.D., Wingfield, J.E., Fouda, L., Rice, A.N., and Bailey, H. 2018. *Validating Automated Click Detector Dolphin Detection Rates and Investigating Factors Affecting Performance.* Journal of the Acoustic Society of America.

Fouda, L., Wingfield, J.E., Fandel, A.D., Garrod, A., Hodge, K.B., Rice, A.N., Bailey, H. 2018. *Dolphins Simplify Their Vocal Calls in Response to Increased Ambient Noise.* Biology Letters.

Drs. Helen Bailey, David Secor, Vyacheslav Lyubchich, participated and presented at the DARPA PALS Kick-off meeting at the Space and Naval Warfare Systems Center Atlantic (SPAWAR) in Charleston, SC.

Drs. Lee Cooper, Jaqueline Grebmeier, traveled to participate in the 2019 Alaska Marine Science Symposium in Anchorage, Alaska.

Dr. Vyacheslav Lyubchich traveled to Honolulu, HI to participate in the Hawaii International Conference on System Sciences (HICSS) conference and co-organize a workshop "Modern Deep Learning Algorithms for Agricultural Risk Managements at the Face of Climate Change."

Dr. Mario Tamburri along with other CBL attendees participated in the UMCES CBL MERC Dredged Material workshop in Annapolis, MD.

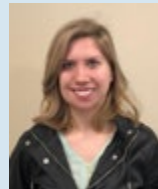
Drs. Johan Schijf and Hali Kilbourne along with student Hunter Hughes traveled to the Florida Keys to collect water samples and service underwater equipment and coral specimens.



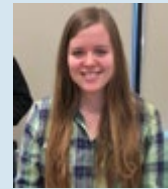
HUMAN RESOURCES

Welcome to CBL...

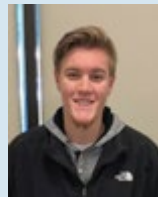
CSM Interns:



Alexis Johnson
Dr. Michael Gonsior



Jessica Loveless
Dr. Laura Lapham



Nicholas Johnson
Dr. Ryan Woodland

UPCOMING EVENTS

Science for Citizens - Spring 2019



- | | |
|----------|--------------------------|
| March 26 | Lora Harris, Ph.D. |
| April 2 | Laura Lapham, Ph.D. |
| April 9 | Hali Kilbourne, Ph.D. |
| April 16 | Suzan Shahrestani, Ph.D. |
| April 23 | Helen Bailey, Ph.D. |