CHESAPEAKE BIOLOGICAL LABORATORY | SOLOMONS, MD

ISSUE 62

Lab Lines

OCTOBER 2021

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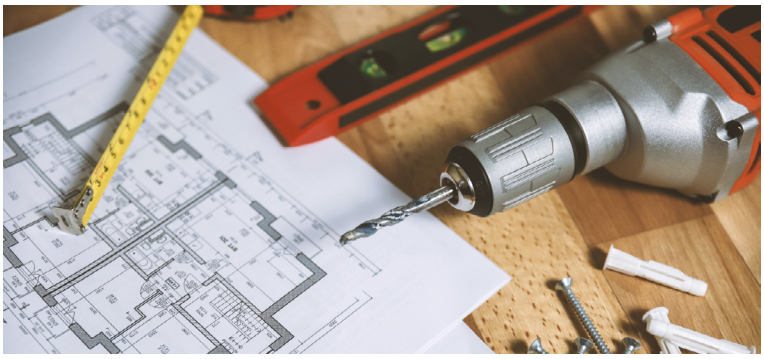
DIRECTOR'S VIEW



October marks an important month for CBL – we begin the design process for a new building on campus. This building started out as a building that provided library function only – but it has evolved over the last 30 years to now be the hub of President Goodwin's new Cyber-Collaboratory. In this grander vision, UMCES will develop the capacity to ask and answer cross-cutting questions at the interface of environmental sciences and societal challenges, co-developing solutions with stakeholder groups. The new building, named the Chesapeake Analytics Collaboration Building, will be the hub of this new initiative. The timeline for this new building begins with a design process that starts now and runs until late spring 2022. Construction funds become available in July 2022, with construction set to end in January 2024. For those who were here during Truitt and are familiar with the delays we experienced, I have to say that I think there is a high likelihood that this project will stay on track because it lacks the complexity inherent in building a running seawater laboratory and connecting to building systems together. I will ensure to keep the CBL community informed of progress and provide as many opportunities as I can for your involvement.

IN CASE YOU MISSED IT

Lisa Wainger has been elected chair-elect of the Delta Independent Science Board and will be Steve Brandt's replacement as chair in a year. As an aside, Steve Brandt is a former CBL faculty member.

Lora Harris is traveling to Aarhus, Denmark the week of October 18th to participate in the Baltic Sea Congress meeting. She will provide a contributed plenary talk regarding the relative cost of hypoxia to enhanced nitrogen cycling using experimental results from whole ecosystem manipulations of oxygen in a sub-estuary of the Patapsco.

Helen Bailey was awarded Maryland SeaGrant Program Development Funds ($10,000) for the second summer (2022) of their environmental DNA assessment of the Chesapeake Bay, which is the basis of Lauren Rodriguez's research project.

In other news, recent CBL Ph.D. graduate Chelsea Wegner Koch has accepted a position as a scientific consultant to the UN Decade of Ocean Science for Sustainable Development Marine Policy and Regional Coordination Section Intergovernmental Oceanographic Commission of UNESCO. Her new contact details are: + 44 7862 788295 c.koch@unesco.org.

Isabel Sanchez-Viruet presented her preliminary findings on floating wetland research to the 11th Hour Racing. The Harris Lab and Testa Lab partnered with the Baltimore National Aquarium to study floating wetlands and their potential to remove nitrogen from estuarine water. The preliminary findings indicate that floating wetlands have the potential to remove nitrogen from estuarine waters via bacterial denitrification.

Slava Lyubchich with Matt Gray (HPL) presented their work on machine learning of factors related to production crashes at an oyster hatchery, at the 3rd NOAA Workshop on Leveraging AI in Environmental Sciences

A video of the talk is available here: https://youtu.be/ObmiknK-j4

Visiting Scientist Dr. Hikaru Itakura received a prestigious faculty position at University of Tokyo Atmosphere and Ocean Research Institute. Hikaru and his family will depart CBL and Southern Maryland for Chiba, Japan where he is a new Assistant Professor within the Graduate School of Frontier Sciences. This is a return to AORI for Hikaru, where he did pioneering work on the spawning behavior and location of eels in the Mariana Sea with Dr. Katsumi Tsukamoto. Hikaru and his family have made the most of his visit despite COVID. Their family has indeed expanded and they are sorry to leave. Hikaru has been a stalwart on our seine survey and enjoyed other field work.

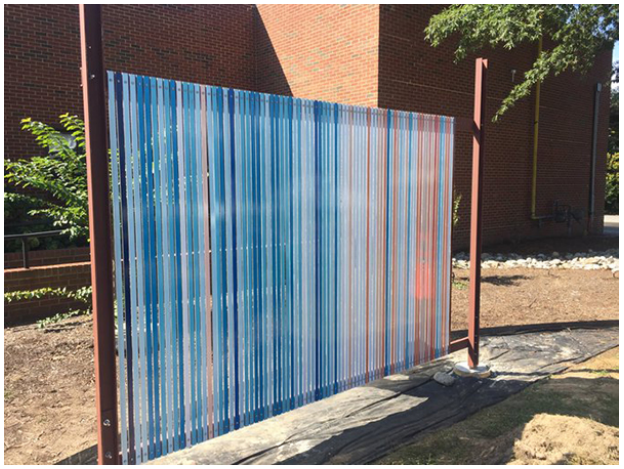
During his visit (May 2019 - Oct 2021), Hikaru has published 15 papers! One on e-DNA and eel conservation already has garnered 40 citations. More locally, Hikaru analyzed a complex telemetry database examining oxy-thermal habitat compressions by Chesapeake Bay striped bass[1]. He is continuing to collaborate with Dave Secor on papers investigating eel habitat-growth associations in the Hudson River and striped bass migration behaviors in the Chesapeake Bay. Bon voyage and good fortune on new ventures!

[1] Itakura, H., M.H.P.O'Brien, and D.H. Secor. 2021. Tracking oxy-thermal habitat compressions encountered by Chesapeake Bay striped bass through biotelemetry. ICES J Marine Science. doi:10.1093/icesjms/fsab009

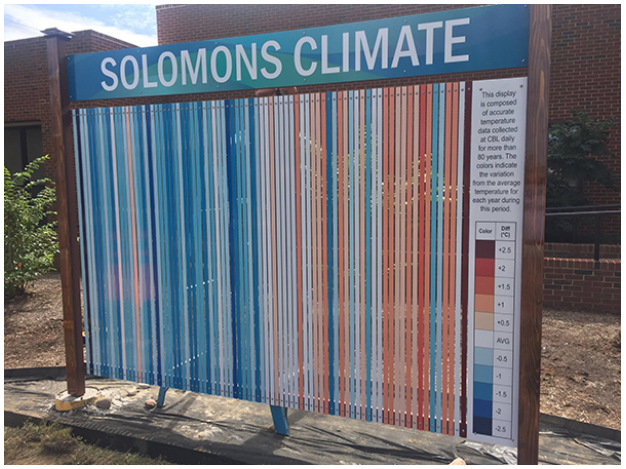
Share Your Ideas – Campus Sign Project

About one year ago, the Chesapeake Biological Laboratory installed our "Climate Stripes" sign in front of Mansueti. The idea for this sign came from Dr. Laura Lapham, it was designed by Dr. Tom Miller, and it was fabricated and installed by Brian Duke. In addition to being a great team effort, this high profile display uses data from the CBL research pier to raise awareness of climate change, while helping viewers understand that we are much more than "that place past the Tiki Bar." The sign also capitalizes on the large number of tourists and area residents who walk around Solomons Island and our campus.

With the success of the "Climate Stripes" sign, the Chesapeake Biological Laboratory is looking for one or two additional opportunities to create visually compelling outdoor signs that use our research to engage campus visitors in learning about who we are, what we do, and why it is important. Members of the CBL community are invited to submit ideas for new outdoor signs that highlight our research and communicate our identity to members of the public.



Please email to Sarah Brzezinski, Outreach Coordinator, at brzezins@umces.edu to share your ideas!



Thank you to Amber Fandel, Samantha Mais, Laura Lapham, Lauren Rodriguez and Dong Liang, who have already submitted their ideas for outdoor signs or exhibits!

Outreach Cont.

Science for Communities

A FREE public webinar will be presented via Zoom on each of the following Tuesdays from 7:00pm – 8:00pm. Following each presentation, there will be a moderated question and answer session.

REGISTRATION IS REQUIRED: https://www.usmf.org/s4c/

Climate Warming and the Changing Pacific Arctic Marine Ecosystem

Tuesday, October 19, 2021

Presented by Dr. Jackie Grebmeier

The Bering and Chukchi Seas are undergoing dramatic sea ice reduction and warming conditions that are shifting the composition of bottom-dwelling prey for marine mammals, seabirds and commercial fish in the region. Field studies by CBL scientists are tracking ecosystem status and trends within the international Distributed Biological Observatory (DBO) network. In this webinar, internationally recognized Arctic expert Dr. Jackie Grebmeier will share highlights of scientific findings from the rapidly changing Arctic.

The Intergovernmental Panel on Climate Change: Ins, Outs, Demands & Frustrations of Serving as Lead Author of Working Group II

Tuesday, October 26, 2021

Presented by Dr. Libby Jewett, NOAA

As part of a multi-year global climate change assessment process, Working Group II of the Intergovernmental Panel on Climate Change (IPCC) seeks to assess the vulnerability of socio-economic and natural systems to climate change, negative and positive impacts of climate change, and options for adapting to it.... But why should we believe what these scientists tell us? As lead author of Working Group II, Dr. Libby Jewett can shed light on the integrity and hard work, as well as the challenges, that are key to developing this high-profile report. In this seminar, Jewett will discuss the rigorous process and extensive scientific review through which Working Group II's report must pass prior to its expected release in 2022

Risk Assessment in the Face of Climate Change

Tuesday, November 2, 2021

Presented by Dr. Slava Lyubchich

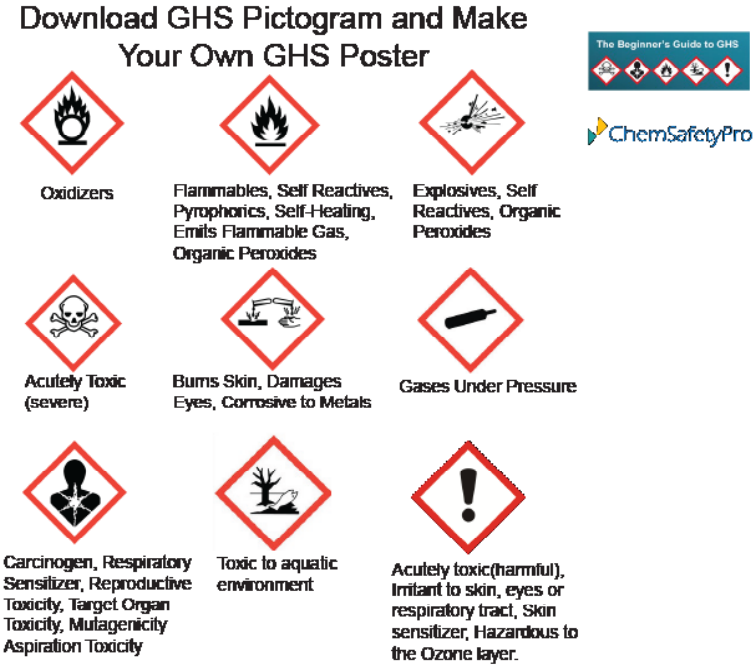
Traditionally, long-term observations have been a key component in assessing the risks of weather-induced losses. However, most recent climate trends require the inclusion of future climate projections into the methods and models used to assess the risks. In this seminar, Dr. Slava Lyubchich will discuss how this step has important implications for building codes, pricing agricultural and home insurance.

Safety Corner: Cheryl Clark

GHS PICTOGRAMS

The Hazard Communication Standard requires GHS pictograms on the labels of primary and secondary chemical containers to warn users of the hazards to which they may be exposed. There are nine of these pictograms that consist of a symbol on a white background framed within a red diamond border. Each of these represents a specific hazard. Four of these pictograms depict physical hazards (oxidizers, flammables, explosives and compressed gas), three are health hazards (toxic, human health hazard and irritant), one is both a physical and a health hazard (corrosive) and one is an environmental hazard (this one is not mandatory).

There should be a poster of these in your laboratory and you should be able to recognize these symbols on sight. If you do not have one of these posters, please contact me – x458.



https://www.chemsafetypro.com/Topics/GHS/GHS_pictogram.html

Hazard Communication. Right to Know. OSHA 29 CFR 1910.1200 COMAR 09.12.33 pg. 15-16

Publications

Weerabaddana, Mudith, K. L. DeLong, A. J. Wagner, D.W.Y. Loke, K. H. Kilbourne, N. Slowey, H-M. Hu, and C-C. Shen, Insights from barium variability in a *Siderastrea siderea* coral in the northwestern Gulf of Mexico,Marine Pollution Bulletin, Volume 173, Part A, December 2021, 112930 https://doi.org/10.1016/j.marpolbul.2021.112930. [UMCES Cont. No. 6047]

Donald M. Anderson, Evangeline Fachon, Robert S. Pickart, Peigen Lin, Alexis D. Fischer, Mindy L. Richlen, Victoria Uva, Michael L. Brosnahan, Leah McRaven, Frank Bahr, Kathi Lefebvre, Jacqueline M. Grebmeier, Seth L. Danielson, Yihua Lyu, Yuri Fukai. Evidence for massive and recurrent toxic blooms of Alexandrium catenella in the Alaskan Arctic. Proceedings of the National Academy of Sciences Oct 2021, 118 (41) e2107387118; DOI: 10.1073/pnas.2107387118. [UMCES Cont. No. 6054]

Franz J. Mueter, Katrin Iken, Lee W. Cooper, Jacqueline M. Grebmeier, Kathy J. Kuletz, Russell R. Hopcroft, Seth L. Danielson, R. Eric Collins, and Dan Cushing. Changes in diversity and species composition across multiple assemblages in the northeast Chukchi Sea during two contrasting years are consistent with borealization. Oceanography 34(2), DOI: 10.5670/oceanog.2021.213. [UMCES Cont. No. 6055]

Johan Schijf and Robert H. Byrne's invited review paper, "Speciation of yttrium and the rare earth elements in seawater: Review of a 20-year analytical journey," was published. Elsevier is providing 50 days of free access via the following Share Link: https://authors.elsevier.com/a/1dth226gac5p4

University of Maryland
Center for Environmental Science
Chesapeake Biological Laboratory
www.umces.edu/cbl | 410-326-4281
P.O. Box 38 | 146 Williams Street | Solomons, MD 20688-0038