

# Lab Lines

MARCH 2020

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## DIRECTOR'S VIEW

107-yr old Joe Newman of Sarasota is a survivor of the 1919 flu epidemic that took millions in the year following the end of WW1. Reflecting on his experience, he said "You have to be my crutch. I have to be yours. It's been that way through every crisis we've had. And then we find, when we do look back, that is what got us through it." I have been immensely impressed, but not terribly surprised, by the spirit the CBL community has brought to the severe restrictions in our normal activities. Thank you for all you do to make CBL such a great community. In these unprecedented times, please focus your energy on staying healthy, and on taking care of family and friends.

I wanted to provide some positive news in this difficult time. Two CBL students have recently been awarded competitive fellowships. Chelsea Wegner Koch has been awarded a Wylie Fellowship from the Graduate School at College Park. This award is open to all finishing graduate students at UMCP and seeks to support them writing their dissertations by providing funds to support salary and tuition in their final semesters. Alex Fireman has been awarded the 2020 Boyd Lyon Sea Turtle Fund Scholarship. This international award is open to any student working on sea turtles and represents a significant achievement for Alex. Please congratulate both when you see them in person or virtually.

## TRAVEL & AWARDS

Lora Harris and Jeremy Testa hosted an NSF funded workshop to inform modeling of engineered aeration in estuarine ecosystems. The gathering included engineers, biogeochemists, and physical oceanographers from both the lake and coastal communities. IAN kindly provided space in their Annapolis offices.

Hadley McIntosh successfully defended her dissertation "Year-round determination of methane (CH<sub>4</sub>) sources and sinks in arctic lakes using continuous and autonomous sampling".



At the recent 2020 Ocean Sciences Meeting in San Diego, CA, there were a number of UMCES students that participated in a K-12 mentor day at the meeting and spent a day of the meeting mentoring high school students from across the country that attended the conference. The students involved were Hannah Morissette (HPL), Maddy Lahm (CBL), Nicole Barbour (CBL), Christina Goethel (CBL), and Hadley McIntosh Marcek (CBL).

## FACILITIES UPDATES

Parish House HVAC repairs were placed on hold until we resume full campus operations.

**RECYCLING:** Notice!! We have received a final notice from our recycling hauler, Waste Management that our recycling has been contaminated multiple

times. If this continues, they will discontinue the service. Items in the recycling dumpster have included plastic shopping bags, food containers (pizza boxes), Styrofoam inside corrugated boxes and garbage. The dumpster for recycling located in the BFL parking lot is NOT to be used by employees. If you have recycling please place it in the many containers throughout campus or submit a work order for a pick up. We are REQUIRED by State and County regulations to weigh and report our recycling prior to placing it in the recycling dumpster.



## HUMAN RESOURCES INFORMATION

Thank you to everyone for completing the mandatory Sexual Harassment Awareness training. Stay tuned for ethics training that will be rolling-out in the near future.

The new vendor for our Employee Assistance Program has an abundance of information and services available to employees. They provide counseling services as well as legal and financial guidance, work-life balance solutions, and advice on well-being. The services are available 24/7.

Online: [guidanceresources.com](http://guidanceresources.com)  
(Web ID USMEAP)

APP: GuidanceNow Call: 855-410-7628

## OUTREACH ACTIVITIES

On Friday, March 6th, outreach coordinator Sarah Brzezinski presented a Brown Bag seminar about the Chesapeake Biological Laboratory's Outreach Plan and priorities. A copy of this presentation is available on the p-drive at EVENTS/BrownBag for those who were not able to attend.

## IN CASE YOU MISSED IT

Zoom is now available as an additional web conferencing service to UMD students, faculty, and staff. Zoom is integrated with ELMS-Canvas to support teaching and learning, and it can also be used via the Zoom portal by logging in with your Directory ID and password. Cisco Webex and Google Hangouts Meet also remain available to UMD community members.

Brown bag seminars will continue to take place on Fridays over Zoom at 12 PM. Meeting ID: 700-221-530.

UMCES Virtual All Hands Meetings: This will be a weekly meeting to help keep the UMCES community connected and informed during challenging transitions to new ways of working, learning and connecting. For topics you'd like to see covered in future meetings or other ideas, please email [engage@umces.edu](mailto:engage@umces.edu) and the UMCES COVID-19 Response Team will respond.



This is an article that is in the Spring 2020 edition of *Speaking of Safety* issued by the Laboratory Safety Institute. It is a good reminder to be sure that you keep yourself informed (Safety Data Sheets, labels) about the chemicals in your laboratory and to know how to handle a spill. Please remember that if there is a spill you are not required to clean it up, but you are required to report it. If you do not know what has been spilled, please do not attempt to clean it up. Please remember to label all of your containers so everyone who is in the lab will know what its contents are.

### CHEMICAL TOXICITY AND HEALTH HAZARDS

A safety incident happened at a high school in early September. It seemed a chemistry teacher was in the chemical storeroom and noticed a bottle of barium oxide powder (BaO) was cracked. The teacher started to move it to a rubber bottle carrier to contain it in case the crack should fail. Unfortunately, the crack failed when the bottle was picked up—no injuries, but BaO powder went on the floor and a few shelves, making a huge mess. The teacher planned on covering it with kitty litter and sweeping it up and putting it into a container for hazardous waste pickup. The supervisor, seeing the chemical powder on the floor, told the teacher that it should not be touched and a hazmat pickup company was going to immediately be called.

The company came the next day, after school dismissal, and the powder was cleaned up with a HEPA vacuum in 45 minutes. The manifest paperwork was secured and all was back to normal—to the tune of several thousand dollars.

The administration questioned why an outside contractor had to come in and pick up the chemical powder spilled instead of the science teacher. The SDS (Safety Data Sheets) said nitrile gloves, a gown, chemical splash goggles, and a mask were needed. The TLV (threshold limit value) of BaO is 0.5 mg/m<sup>3</sup>. The supervisor was concerned and explained that the teacher cleaning it up would have within a few seconds exceeded TLV level. Plus, there was broken glass all over the floor, etc. Remember that the TLV of a chemical substance is believed to be a level to which a worker can be exposed day after day for a working lifetime without adverse effects. TLVs issued by the ACGIH (American Conference of Governmental Industrial Hygienists) are the most widely accepted occupational exposure limits both in the United States and most other countries. So bottom line, no injuries, the mess was cleaned up, the bill was paid. But it's scary that the teacher figured, "oops, I made a mess, I'll just clean it up."

Laboratories basically have three types of hazards –biological, chemical and physical. Health effects for hazardous chemical exposure are often incomplete. Two terms which are often used interchangeably for health effects are toxicity and hazard. However, these words are quite different. Toxicity is the ability of a chemical substance to cause harm. Hazard is the likelihood that a material will cause harm under the conditions of use. Thus, with proper handling, even highly toxic chemicals can be used safely. Conversely, less toxic chemicals can be extremely hazardous if handled improperly. The actual chemical health risk is dependent on two factors -the toxicity and the actual exposure. No matter how toxic the material may be, there normally is little risk involved unless it enters the body. Assessing a chemical's toxicity and potential routes of entry can help determine protective measures that need to be taken.

## WHERE TO GET THE TOXICITY INFO?

The first source for toxicity information is in the SDS for the chemical which has been spilled: Section 2 –Hazards Identification, Section 8 -Exposure Controls/PPE, and Section 11 –Toxicological Information. If that is not available, there are other internet sites which could be accessed for the toxicological information such as The National Center for Biotechnology Information or NCBI homepage at the U.S. National Library of Medicine (<https://pubchem.ncbi.nlm.nih.gov>). This is a great reference site to quickly find chemical information from authoritative sources. IN THE END! Bottom line is when there is a chemical spill, make sure teachers are trained to know what they are dealing with toxicity-wise BEFORE taking action to have it cleaned up!

Editor's Notes: (1) TLV's come in three sizes, TWA, STEL, and Ceiling. TWA is an average exposure for a working day, STEL is a short term exposure limit for 15 minutes. Ceiling is instantaneous cap. (2) In addition to training teachers to research toxicity, most employers are required to provide HAZWOPER Awareness Training to anyone who may encounter a hazardous chemical spill. See 29CFR1910.120. This training enables teacher to more easily decide whether it is safe to clean up or to evacuated and get the HAZMAT team to respond. (3) LSI (Laboratory Safety Institute) believes that life (including lab) has nine different and important hazards: chemical, biological, physical, mechanical, radiation, noise, high/low pressure, electrical, and stress. (4) LSI believes that hazard is inherent ability to cause harm and that risk is the likelihood that harm will occur due to exposure to the hazard. I should note that these are two commonly held uses of the word "hazard." (5) Please read the SDS before you use the chemical. Be prepared in advance to take appropriate, immediate action. No excuses!

Author: Dr. Ken Roy, director of environmental health and safety at Glastonbury (CT) Public Schools, NSTA & NSELA safety compliance consultant.

For more information, the OSHA 29 CFR 1910.1200 (Right to Know) document is located in the safety folder under "plans and policies" on the p drive.

## Publications

Garvin M.C., J. Schijf, S.R. Kaufman, C. Konow, D. Liang, A.E. Nigra, N.H. Stracker, R.J. Whelan, and G.C. Wiles (2020) [A survey of trace metal burdens in increment cores from eastern cottonwood \(\*Populus deltoides\*\) across a childhood cancer cluster, Sandusky County, OH, USA](#). Chemosphere 238, 124528 (UMCES #5651)

Schijf J., C. Jeandel, K.H. Johannesson, and A.H. Osborne (2020) [Editorial: REE marine geochemistry in the 21st century: A tribute to the pioneering research of Henry Elderfield \(1943-2016\)](#). Front. Mar. Sci. 7:114. doi: 10.3389/fmars.2020.00114 (UMCES #5754)

Appice A, Gel YR, Iliev I, Lyubchich V, Malerba D (2020) A multi-stage machine learning approach to predict dengue incidence: a case study in Mexico. IEEE Access. -In press. (UMCES # 5809)

Lovvorn JR, Rocha AR, Danielson SL, Cooper LW, Grebmeier JM, Hedstrom KS (2020) [Predicting sediment organic carbon and related food web types from a physical oceanographic model on a subarctic shelf](#). Mar Ecol Prog Ser 633:37-54. (UMCES #5808)

S Wang, J Ge, KH Kilbourne, Z Wang, (2020) [Numerical simulation of mid-Holocene tidal regime and storm-tide inundation in the south Yangtze coastal plain, East China](#). Marine Geology, 423, 106134, 10.1016/j.margeo.2020.106134 (UMCES # 5781)

**REMINDER:** Please send an email to Renee Arnold at [rarnold@umces.edu](mailto:rarnold@umces.edu) when requesting an UMCES Publication Number or CBL Reference Number for a publication/manuscript. Please include in your email: Authors and published year or in press, title, name of journal, type of publication, one or more of the following: attachment of letter of acceptance, copy of first page, final copy or PDF of paper, Cover sheet for Technical Report Series or Special Series, and contract or grant number.

There are four publications that are recognized: Scientific Publication Series, Technical Report Series, Editorial Series, and Special Publication Series.

# Development Activity

In 2019 CBL had two \$20,000 gifts from donors. Dr. Tom Miller and Jeane Wharton designed a print as a thank you for these donors. It features a 1953 photograph of the old wooden pier. The reverse side has a message thanking the donor for supporting CBL students and programs.



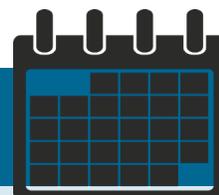
Besides the two major gifts, there was \$16,000 in gifts-in-kind. Donors funded equipment for terrapin research, Chesapeake DolphinWatch, and new work vests onboard the R/V Carson.

Several donors increased their support from years past. One woman gave \$50 in 2017, and increased her support to \$1,500 in 2019. Someone else gave \$750 in 2018, but donated \$3,000 in 2019. The average gift in 2019 was \$1,292, up from \$732 in 2019.

Wharton works with individual philanthropists and foundations for funding to support students and projects. She also works with the University System of Maryland Foundation (database entry and maintenance and prospect research.) She helps faculty seeking charitable foundation support.

Corporate supporters for the past three years of Science for Citizens seminars were Toyota of Southern Maryland, Team Hyundai and PNC Banks. In 2019, Wharton applied to PNC Foundation, separated from PNC Banks. CBL was given funds to support the intern program, a partnership with the College of Southern Maryland. This is the first time PNC Foundation has funded activity at CBL.

## UPCOMING EVENTS



Due to the Covid-19 Outbreak: All campus events, including sponsored on-campus and off-campus events, are cancelled through June 1, 2020, and no new events will be scheduled until further notice.



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