

Lab Lines

JUNE - JULY 2016

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This image illustrates the surface boils associated with the aeration system in Rock Creek, MD. Labs study the impact of engineered re-aeration on nutrient cycling in Rock Creek.

RESEARCH & AWARDS

Jerry Frank, Manager of the Analytical Services Lab, received six awards from the Department of Natural Resources (DNR) (07/01/16 – 12/31/17). The awards are all part of the Chesapeake Monitoring Program: Non-Tidal Analysis, Shallow Water Monitoring, Blind Audit, CBNERR DEIL, Tributary Monitoring, and Mainstream. The scope of work is to provide laboratory analyses, quality assurance, data management activities and research vessel service for DNR on sets of water samples.

Jerry Frank's Maryland Environmental Service Contract was extended to 6/30/17. The title of this project is Nutrient Sample Analysis from the Placement Cells and Exterior Monitoring locations at Poplar Island.

Additionally, Jerry also received an award from NOAA (thru DNR) titled Discrete Water Quality Monitoring for the Chesapeake Bay National Estuarine Research in Maryland.

Dr. Mario Tamburri received an award from NOAA (06/01/16-05/31/21). The title for this project is The Alliance for Coastal Technologies: National Scale Efforts toward Evaluation of Observing Technologies. There are seven new sub-awards associated with this project.



RESEARCH & AWARDS CONT...

Several of our faculty were approved for funds from NOAA and for projects that are currently in process:

- Drs. Genevieve Nesslage and Michael Wilberg for: *Development of a Bayesian approach for estimating ecosystem-based reference points for Atlantic menhaden.*
- Drs. Lora Harris and Jeremy Testa for: *Quantifying changes to nutrient cycling and nitrogen removal in an estuary as a consequence of aeration and Natural Engineers in Ecosystem Restoration: Modeling Oyster Reef Impacts on Particle Removal and Nutrient Cycling.*
- Drs. Michael Gonsior, Andrew Heyes, and Lora Harris for: *Tracking septic system performance by using innovative mass spectrometric approaches and traditional nutrient measure.*

Dr. Dave Secor was awarded a new contract from DNR (2016-2017). The title is: *Influence of turbine construction noise on black sea bass displacement and physiological condition in the Maryland Wind Energy Area.*

Drs. Dave Secor and Helen Bailey received a new award from BOEM (2016-2018). The title is: *Movement*

SAFETY

The safety cabinets were ordered the week of July 11 to improve safety concerns at CBL and to store toxic and oxidizing reagents separately. An UMCES-wide chemical inventory online system was discussed and Sherry Pike-Saville at HPL is researching further possibilities.

and habitat selection by migratory fishes within the Maryland Wind Energy Area and adjacent reference sites.

NEW PERSONNEL & STUDENTS

Mindy Forsyth - Faculty Research Assistant II (Lora Harris). Mindy has worked here previously and is returning to CBL.

Dr. Leanne Powers - Assistant Research Scientist (Michael Gonsior).

Ashley Burdette - Faculty Research Assistant I (Jerry Frank).

Please give them a CBL welcome when you pass them on campus.

DEVELOPMENT

On Saturday, September 17, 2016, graduate students at the Chesapeake Biological Laboratory (CBL) will host the 9th annual CBL 5K Run for Research. The course begins and ends at CBL and takes the participants on a morning run through beautiful Solomons, MD.

The students working at CBL conduct cutting edge research on the environment – including tracking the migrations of critically endangered leatherback sea turtle hatchlings, studying the impact of contaminants on the estuarine environment, and assessing the populations of important commercial Chesapeake fisheries, such as blue crabs, oysters, menhaden, and striped bass. Our students work hard to understand complex local and global environmental challenges and, under the guidance of their faculty advisors, they are seeking solutions for today and tomorrow.

An essential part of their education is attending scientific conferences around the country where they present the findings of their work. Attending these conferences is critical to leveraging the research they do in Southern Maryland by gaining insight and feedback from experts in their field. But the students at CBL couldn't travel

to these conferences without the proceeds from the Run for Research which helps to subsidize travel expenses. Your support ensures that students from CBL can continue to further their educations, share their knowledge of the Chesapeake Bay System, and represent Solomons and Southern Maryland on the national stage.

Please consider participating in the Chesapeake Biological Laboratory 2016 Run for Research. Funds raised by the Run for Research are used exclusively to provide travel grants to CBL students.

Register online at <http://www.umces.edu/cbl/5k-run>



Matt Damiano created the 5K logo this year

FELLOWSHIP/STUDENT AWARDS

Aimee Hoover and Gray Redding received John A. Knauss Marine Policy Fellowship Awards.

Gray Redding received a 500 Euro award as an Early Career Scientist to attend the International Council for Exploration of the Sea (ICES) Annual Science Conference in Riga, Latvia.

Brian Gallagher received an award for first place for young scientist platform paper at the 2016 Conference on the Ecological and Evolutionary Ethology of Fishes, held in June in Panama City.

Hadley McIntosh was awarded the Charles A. & June R.P. Ross Research Award from the Geological Society of America and the American Geophysical Union's Horton (Hydrology) Research Grant. These are both supporting 14C analysis of methane in lakes in the Mackenzie River Delta.

LIBRARY

Kathy Heil is coming in on random days and times to cover circulation and interlibrary loan requests, so services will not be as prompt.

Remember the way to access UMCP holdings including e-books and on-line journals is to go to:

<http://umaryland.on.worldcat.org>

Click on the Library Links button

Then click on: off campus access (log in)

Use your ARES (Timesheet) ID and password.

ACT

The Nutrient Sensor Challenge finalists were at CBL in July to begin the next phase of nutrient sensor testing for the challenge. The Challenge was initiated by the Challenging Nutrients Coalition which is made up of key federal agencies including EPA, NOAA, USGS, NIST, and the White House Office of Science and Technology Policy. Lab testing was performed by ACT staff and the sensors were deployed off of the CBL Pier for a three month test on July 18 while being observed by Coalition representatives. For complete story see following link: www.umces.edu/cbl/story/2016/jun/28/open-innovation-challenge-brings-new-approaches-reduce-nutrients-waterways



Preparation for deployment with company representatives and project observers.

OUTREACH

Visitor Center

Check out the exciting new “Making Waves with CBL Students” exhibit in the Visitor Center! This exhibit features a series of short videos about individual CBL students, highlighting the important research they are conducting. The CBL Visitor Center will be open:

- Memorial Day to Labor Day: Wednesday - Sunday from 9:30 am to 4:30 pm
- Free, docent-led Campus Tours are offered to the public on Fridays at 2 pm from June through the end of November. These tours last approximately 1 hour and depart from the Visitor Center.

Learn more about the CBL Visitor Center and Campus Tours here: <http://www.umces.edu/cbl/visitors-center-outreach>

Visitor Center Volunteers Needed

The Chesapeake Biological Laboratory (CBL) Visitor Center provides guests with the opportunity to learn about cutting-edge research being pioneered by CBL’s team of faculty and student scientists. The CBL Visitor Center is entirely run by our dedicated Visitor Center docents, who serve a vital role in explaining our research to the general public and help guests understand the importance of the work we do. New volunteers are currently being recruited, and we would love to have you join the team! If you are interested in volunteering in the Visitor Center, or know someone you think would be interested in volunteering, please contact Sarah Brzezinski at brzezins@umces.edu.

On Campus Event

On the morning of Wednesday, August 3rd, CBL is pleased to be hosting the Solomons Business Association meeting. This meeting will include a presentation by Dr. Walter Boynton, and will conclude with a tour of the CBL campus.

Off Campus Event

Be sure to visit the Chesapeake Biological Laboratory’s outreach display at the St. Clements Island Museum Children’s Day on Saturday, August 20th. Children’s Day, held at the St Clements Island Museum, is a free event that offers activities for kids of all ages, including games, crafts, food, free water taxi rides for kids (weather permitting), and more.

PUBLICATIONS

Bailey, H. and Secor, D.H. (in press) *Coastal evacuations by fish during extreme weather events*. Scientific Reports. 2016.

Siskey, M.R., Wilberg, W.J., Allman, R.J., Barnett, B.K. and **Secor, D.H.** 2016. *Forty years of fishing: Changes in age structure and stock mixing in Northwestern Atlantic bluefin tuna (*Thunnus thynnus*) associated with size-selective and long-term exploitation*. ICES Journal of Marine Science.

Limburg, K., Brown, R. Johnson, R., Pine, B., Rulifson, R. **Secor, D. H.**, Timchak, T., Walther, B., and Wilson, K. 2016. *Round-the-coast: Snapshots of estuarine climate change*. Fisheries 41: 392-394.

Schijf, J. and Burns, S.M. 2016. *Determination of the side-reaction coefficient of Desferrioxamine B in Trace-Metal-Free Seawater*. Frontiers in Marine Science.

Shillinger, G.L. and **Bailey, H.** 2015 *Movements and behavior of adult and juvenile leatherback turtles*. Pages 162-172 in J. R. Spotila and P. Santidrián Tomillo, editors. *The Leatherback Turtle: Biology and Conservation*, John Hopkins University Press, Baltimore, MD.

Gonsior, M. et al. 2016. *Chemodiversity of dissolved organic matter in the Amazon Basin*. Biogeosciences.

Hodgkins, C., Day, M., Humphrey, J., Shahresani, S., Harris, L.A., Testa, J.M., and Boynton, W. R. 2016. *2015 Water quality monitoring program for tidal creeks in Calvert County, MD*. Prepared for the Calvert County

Board of County Commissioners.

Abram, N., and **Kilbourne, K.H.** 2016. *Early onset of industrial-era warming across the oceans and continents*. Nature.



Gel, Y.R., **Lyumchich, V.**, and Ramirez, L. L. 2016. *Fast patchwork bootstrap for quantifying estimation uncertainties in sparse random networks*.

Türel, C., **Miller, T.J.**, Gündoğdu, S. and İrem Nur Yesilyurt. 2016. *Growth and mortality of Blue Crab (*Callinectes sapidus*) in the North-Eastern Mediterranean Sea*. Journal of FisheriesSciences.com.

Staehr, P.A., **Testa, J.M.**, and Carstensen, J. 2016. *Decadal changes in water quality and net productivity of a shallow Danish estuary following significant nutrient reductions*. Estuaries and Coasts Journal. doi: 10.1007/s10021-016-0004-0.

Testa, J.M., Younjoo, Y.L., Li, M., Brady, D.C., DiToro, D.M., and Kemp, W.M. 2016. *Modeling physical and biogeochemical controls on dissolved oxygen in Chesapeake Bay: Lessons learned from simple and complex approaches*. Journal

or Geophysical Research - Oceans.

Testa, J. M., Adams, E.E., North, E.W., and He, R. 2016. *Modeling the influence of deep water application of dispersants on the surface expression of oil: a sensitivity study*. Journal of Geophysical Research: Oceans. doi: 10.1002/2015JC011571.

Simpson, C. and **Wilberg, M.** 2016. *Trends in relative abundance and early life survival of Atlantic Menhaden during 1977-2013 from long-term Ichthyoplankton Programs*. Transactions of the American Fisheries Society.

Gaichas, S., Seagraves, R., Coakley, J., DePiper, G., Guida, V., Hare, J., Rago, P., **Wilberg, M. J.** 2016. *A Framework for incorporating species, fleet, habitat, and climate interactions into Fishery Management*. Frontiers in Marine Science.

Rains, S.A., **Wilberg, M.J.**, and **Miller, T.J.** 2016. *Sex ratios and average sperm per female Blue Crab in six tributaries of Chesapeake Bay*. Marine and Coastal Fisheries.

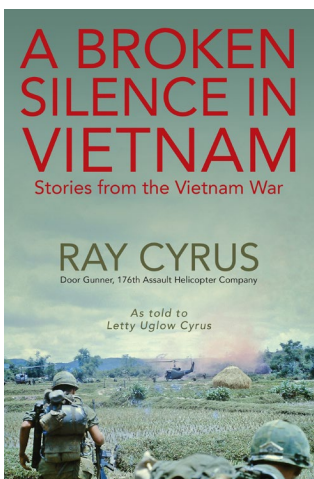
Testa, J.M., Kemp, W.M., **Harris, L.A.**, **Woodland, R.J.**, and **Boynton, W. R.** 2016. *Challenges and directions for the advancement of estuarine ecosystem science*. Ecosystems. doi: 10.1007/s10021-016-0004-0.

DID YOU KNOW?

Mike O'Brien was recently promoted to the USA Rugby Referee Panel, ranking him among the top 16 referees in the nation. Look for Mike on TV as he refs national and international rugby tournaments.

Letty Cyrus and her husband, Ray Cyrus, recently published a book this year that has received excellent reviews. It is titled, "A Broken Silence in Vietnam" and is about her husband's experiences as a Door Gunner in Vietnam - 1968. Also included in their book are stories from other veterans whom they have met when Ray was wearing his Vietnam Veteran hat out in public places.

http://www.amazon.com/Broken-Silence-Vietnam-Stories-War-ebook/dp/B01BXCHGGY/ref=sr_1_1?ie=UTF8&qid=1469122479&sr=8-1&keywords=A+Broken+Silence+in+Vietnam#nav-subnav



Lora Harris' new student Zachary Gotthardt was recently featured by MD Sea Grant. Check out the link below for details.

<http://www.mdsg.umd.edu/fellows/2016/zachary-gotthardt>

WHO'S ON TRAVEL?



Dave Secor participated in the ASMFC Atlantic sturgeon stock assessment, Baltimore, 11-15 July. The following week he is an invited speaker at the 2016 Gordon Research Conference on Global Change Biology in New Hampshire. Then off to Madrid to participate in an ICCAT bluefin tuna assessment meeting.

Jackie Grebmeier traveled to Copenhagen, Denmark to a working group on Integrated Ecosystem Assessment for the Central Arctic Ocean at ICES Headquarters. Jackie also attended the Oceans Network Canada Board Meeting.

Lora Harris traveled to Washington, DC to attend the Phase II National Academies Committee Meeting.

Chris Rowe presented a talk at the Joint meeting of Ichthyologists and Herpetologists in New Orleans.

Hali Kilbourne traveled to Portland, ME to present and attend the 4th International Sclerochronology Conference.

Hongsheng Bi traveled to China to visit the Institute of Oceanology, Chinese Academy of Sciences for collaborative work.

Gray Redding will be traveling to Riga, Latvia in September to attend the International Council for Exploration of the Sea Conference.

Dr. Miller traveled to California to attend the National Academies Meeting.



PRESENTATIONS AND SEMINARS

Dave Secor spoke at the 2016 Gordon Research Conference on Global Change Biology in New Hampshire.

Chris Rowe spoke at the Joint Meeting of Ichthyologists and Herpetologists on “Assessing Sea Level Rise and Future Habitat Availability for Diamondback Terrapins in Maryland.”

Hali Kilbourne presented at the 4th International Sclerochronology Conference. The title: Assisting the Extent and Causes of Fluctuations in the Seawater Sr/Ca Ratio to Improve Coral Paleothermometry Calibrations. Authors: Hali Kilbourne, Agraj Khare, and Johan Schijf.

UPCOMING EVENTS



- July 29 Faculty Retreat at the Calvert Marine Museum
- August 15 Dockside Chats Solomons Sailing Association
- August 29 Fall 2016 classes begin
- September 1 Dockside Chats Calvert Marine Museum Board Members
- September 10 Open House
- September 17 Run for Research
- October 11 Health and Benefits Fair - BFL 1101
- November 14–17 NSF Arctic Research Meeting @ CBL

