

Outreach, Recognitions, & Other Notables

- ◆ Paul Hosier (Biology and Marine Biology retired) was featured in the Summer 2018 issue of Coastwatch for his new book on seacoast plants; “Thriving in Sun, Salt and Sand: Excerpts from Seacoast Plants of the Carolinas ...”
- ◆ Devon Eulie’s (Environmental Sciences) collaborative work was featured in the Summer 2018 issue of Coastwatch: “Understanding Shoreline Management” with Rachel Gitman of ECU and Charles Peterson of UNCCH.
- ◆ Alicia Cheripka, recent UNCW MS Marine Biology graduate; was named a Knauss finalist (featured in the Summer 2018 issue of Coastwatch).
- ◆ Members of the Benthic Ecology Lab (Troy Alphin and Martin Posey; BMB and CMS) assisted the Town of St. James with design and implementation of a living shoreline that protects a section of marsh along the ICW from erosion. This large, local outreach program, the second of its type this summer, involved more than 140 citizen scientist and volunteers, the Boys Home of Lake Waccamaw, and Marine Quests’ Ocean 17 program, featured in the Town’s newspaper.
- ◆ Devon Eulie (EVS), Huili Hao (EVS), and Joseph Long (Earth and Ocean Sciences) were invited to participate in one of four NSF-funded scoping sessions to discuss "research needs related to advancing understanding of the impacts of coastal environmental variability and natural hazards on populated coastal regions"
- ◆ The EOS GEOINT program (Geospatial Intelligence Certificate) was accredited by the [United States Geospatial Intelligence Foundation](#). Narcisa Pricope (Earth and Ocean Sciences) will be heading the program.
- ◆ Mike Mallin (CMS) was interviewed by Raleigh News and Observer about water quality conditions in the Black River watershed, and was also interviewed by Wilmington Star-News about the proposed reclassification of the Cape Fear River to swamp waters.
- ◆ Dr. Wagner’s (Physics and Physical Oceanography) work on icebergs and climate impacts was featured in the [UNC system-wide news](#) (July 2).
- ◆ Roger Shew (EOS) provided a WEBINAR for the League of Women Voters (Atlantic States) on the Prospects for and Issues Related to Offshore Energy in the Atlantic OCS (August 15th).



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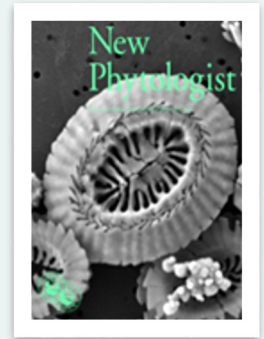
- ◆ Roger Shew (EOS) presented to the Onslow Bight Conservation Collaboration in Ocean, NC (July 19th) on “Sea Level Rise and Nuisance Flooding on the North Carolina Coast: Current and Future Issues for our Coastal Counties”
- ◆ Dylan McNamara (PPO) had a piece on climate change impacts featured in [The Conversation](#) – “Far-sighted adaptation to rising seas is blocked by just fixing eroded beaches.” This item was also featured in the San Francisco Chronicle.
- ◆ The Danner Lab (BMB) led outreach with Marine Quest's Oceans-17 program entitled "Surviving the Heat: Beach Bird Thermoregulatory Biology." In conjunction with Dr. Pricope's Socio-Environmental Analysis Lab (EOS), they led 2 days of outreach with Marine Quest's O.C.E.A.N.S. program entitled "A Birds Eye View of the Thermal Landscape."
- ◆ Audubon North Carolina highlighted Lauren Schaale's MS thesis research in a [blog post](#). This research and related outreach are funded in part by a CMS Pilot Grant.
- ◆ Ralph Mead and other CHM researchers were featured in several stories on GenX. Here is one from the [StarNews](#).
- ◆ Alison Taylor (BMB) provided the UNCW Convocation address in August.
- ◆ The Benthic Ecology Lab (BMB and CMS) is assisting NOAA NMFS on a project titled “Characterizing ecologically and economically important EFH habitats and habitat function in the coastal and estuarine waters of the Southern United States”, being conducted in the Cape Fear River.
- ◆ Fred Bingham (PPO) hosted a meeting of the US CLIVAR POS Panel at CMS. This is a group of 12 top experts on climate and the ocean from around the country. They were here to consider the future of climate research and to forward their advice to federal agencies.
- ◆ John Morrison’s (PPO) cubesat imaging satellite (providing new capabilities to study ocean color) was referenced in an article discussing new launches. [Business Wire](#).
- ◆ Monica Rother (EVS) is helping with K-12 outreach for public schools in Leon County, Florida - they are developing hands-on lesson plans that involve using tree rings to learn about fire history.

Presentations

- ◆ Mike Mallin (CMS), along with co-authors Nick Iraola and Larry Cahoon (BMB), presented “The challenge of Nutrient Loading Reduction to Greenfield Lake, N.C.” at the stream Ecology and Restoration Conference in Asheville, N.C.
- ◆ Delmaine, Avery J., Wade O. Watanabe and Md. Shah Alam (BMB, Finfish Aquaculture Facility) presented the paper “Can invasive tunicates be useful for fish aquaculture? The replacement of menhaden fish meal by the tunicate *Styela plicata* in the diet of juvenile black sea bass *Centropristis striata*” at the 2018 International Invasive Sea Squirt Conference, Woods Hole Oceanographic Institution. Delmaine (BS Marine Biology 2017) presented results of his undergraduate honors thesis.
- ◆ Susanne Brander, C. Stienbarger, J. Joseph, S. Athey, A. Andrady, Pam Seaton, Wade Watanabe, Bonnie Monteleone, and Alyson Taylor (BMB, CHM, Finfish Aquaculture Facility) presented “An assessment of microplastic impacts on the health of the *Centropristis striata* fishery.” At the American Fisheries Society Annual Meeting, Atlantic City, (invited presentation)
- ◆ Fred Bingham (PPO) gave the following two talks at the Ocean Salinity Science Team Meeting in Santa Rosa, CA.:
 - ◇ “SSS Subfootprint variability in the SPURS-1 and SPURS-2 regions”
 - ◇ “Model Derived Sea Surface Salinity Subfootprint Variability in the North Arabian Sea and Western Pacific (Bingham was co-author with first author J. D’Addezio)”
- ◆ Roger Shew (EOS) gave the presentation, "Venus flytrap (*Dionaea muscipula*): Importance of controlled burns and impacts of poaching on plant numbers, distribution, and viability" with published abstract at the Ecological Society of America meeting in New Orleans.
- ◆ Roger Shew (EOS) gave the presentation “Water Sources and Water Quality Issues in Southeastern North Carolina” at the Professional Engineers of North Carolina Meeting in Wilmington.

Publications

- ◆ Halls, J.N.; Randall, A.L. (EOS) Nesting Patterns of Loggerhead Sea Turtles (*Caretta caretta*): Development of a Multiple Regression Model Tested in North Carolina, USA. ISPRS Int. J. Geo-Inf. 2018, 7, 348. [Link](#).
- ◆ Halls, J.N.; Frishman, M.A.; Hawkes, A.D. (EOS) An Automated Model to Classify Barrier Island Geomorphology Using Lidar Data and Change Analysis (1998–2014). Remote Sens. 2018, 10, 1109. [Link](#).
- ◆ Halls, J.N.; Hill, J.M.; Urbanek, R.E.; Sutton, H. (EOS) Distribution Pattern of Red Fox (*Vulpes vulpes*) Dens and Spatial Relationships with Sea Turtle Nests, Recreation, and Environmental Characteristics. ISPRS Int. J. Geo-Inf. 2018, 7, 247. [Link](#).
- ◆ Alison Taylor (BMB) and colleagues published a paper in New Phytologist describing the interaction between calcification and cell division in coccolithophores. Lead author Charlotte Walker was a PhD student at Southampton University and the Marine Biological Association U.K. (now a Post-Doc at York University). A significant part of the study was conducted at UNCW during her Gillings-supported exchange visit in summer 2016. The paper was also highlighted in a commentary with Journal Cover!
- ◆ Walker C., Taylor A.R. (BMB), Langer G., Sarah Heath, Probert I, Tyrrell T., Brownlee C. & Wheeler G. (2018). The requirement for calcification differs between ecologically important coccolithophore species. New Phytologist 220: 147–162. [Link](#).
- ◆ Watanabe, Wade O. and Robert D. Farnell. (Finfish Aquaculture Facility) 2018. Experimental evaluation of the halophyte *Salicornia virginica* for biomitigation of dissolved nutrients in effluent from a recirculating aquaculture system for marine finfish. Journal World Aquaculture Society 49 (4): 735-754.
- ◆ Hardesty DM, Freshwater DW (CMS, BMB) (2018) Studies of North Carolina marine algae XIV. Increased diversity of flattened Gracilaria (Gracilariales, Rhodophyta) species revealed by DNA sequences of contemporary specimens and the *G. mammillaris* type. Botanica Marina 61:407-413. [Link](#).
 - ◇ This publication was based largely upon UNCW undergraduate Deana Hardesty's honors thesis and would not have been possible without the assistance of CMS Marine Operations and the CORMP program.



Publications

- ◆ Undergraduate research student Karen Woodworth participated in the University of Washington Friday Harbor Lab Marine Botany course and conducted research on Northeast Pacific Polysiphonia algae during June and July. As part of this she co-authored a Barcode of Life Database (BOLD) dataset with citation: Aizen, V.V., B.M. Armos, J.L. Hahn, R.P. Kittle, V.M.E. Owen, F.P. Perez, E. Poulin, M.A. Rocha, M. Rojas-Angulo, J. Rouske, D.P. Spencer, K.J. Tonra, K.A. Woodworth, A.N. Zuelow, C. Wells, D.W. Freshwater & T.F. Mumford. 2018. DS-MASJI-5: A.L.G.A.E. (Always Looking Good And Enthusiastic), publicly available DNA sequence and specimen data for marine algae of the Salish Sea area. Barcode of Life Data Systems, <http://doi.org/10.5883/DS-MASJI05>.
- ◆ Till JW Wagner (PPO), Fiamma Straneo, Clark G. Richards, Donald A. Slater, Laura A. Stevens, Sarah B. Das, and Hanumant Singh. 2018. Large spatial variations in the frontal mass budget of a Greenland tidewater glacier. [The Cryosphere](#).
- ◆ White, Dalon P., Baumgarner, Bradley L., Watanabe, Wade O., Alam, Md. Shah, and Stephen T. Kinsey. (Finfish Aquaculture Facility; BMB) 2018. The effects of dietary beta-guanidinopropionic acid on growth and muscle fiber development in juvenile red porgy, *Pagrus pagrus*. *Comparative Biochemistry and Physiology, Part B* 216: 48-58. White (MS Marine Biology, 2013) was interviewed for the article “Turning tilapia into tuna: feed additive may boost muscle quality in farmed fish” published in *Feed Navigator* July 6, 2018.
- ◆ Masahito Tsuboi, Wouter van der Bijl, Bjørn Tore Kopperud, Johannes Erritzøe, Kjetil L. Voje, Alexander Kotrschal, Kara E. Yopak, Shaun P. Collin, Andrew N. Iwaniuk and Niclas Kolm (BMB) Breakdown of brain–body allometry and the encephalization of birds and mammals. *Nature Ecology & Evolution*; volume 2, pages1492–1500 (2018). [Link](#).
- ◆ Esposito, G., Teta, R., Della Sala, G., Pawlik, J.R., Mangoni, A., Costantino, V. (BMB) 2018. Isolation of smenopyrone, a bis- β -pyrone polypropionate from the Caribbean sponge *Smenospongia aurea*. *Marine Drugs*, 16: 285 DOI:10.3390/md160285.
- ◆ Deignan, L.K (UNCW PhD student). Pawlik, J.R., Erwin, P.M. (BMB) 2018. Agelas wasting syndrome alters prokaryotic symbiont communities of the Caribbean brown tube sponge, *Agelas tubulata*. *Microbial Ecology*, 76: 459-466.
- ◆ Scott, A.R. (UNCW MS student), Pawlik, J.R. (BMB) 2018. A review of the sponge increase hypothesis for Caribbean mesophotic reefs. *Marine Biodiversity*, DOI: 10.1007/s12526-018-0904-7

Publications

- ◆ Deignan, L.K, (UNCW PhD student) Pawlik, J.R., López-Legentil, S. (BMB) 2018. Evidence for shifting genetic structure among Caribbean giant barrel sponges in the Florida Keys. *Marine Biology* 165:106 DOI: 10.1007/s00227-018-3355-6.
- ◆ Paul Hosier (BMB retired) has published a [book](#) on seacoast plants of the Carolinas.
- ◆ Rother, M.T. (EVS), Huffman, J.M., Harley, G.H., Platt, W.J., Jones, N., Robertson, K.M., and Orzell, S.L. 2018. Cambial phenology informs tree-ring analysis of fire seasonality in Coastal Plain Pine Savannas. *Fire Ecology* 14, 164–185.
- ◆ Dumas, Christopher F. (EVS), and Brendan Manley (UNCW grad student EVS). "The Economic Impacts of Carolina Beach Inlet Navigability on Waterfront Property Values." For: Carolina Beach Inlet Association. UNCW Community Engagement Grant project. UNC-Wilmington, Department of Environmental Science. Wilmington, NC. June 2018. pp. 41.
- ◆ Dumas, Christopher F. (EVS), and Mary Jaskowiak (UNCW undergrad). "The Economic Impact of Water Quality on Coastal North Carolina Waterfront Property Value." NC Sea Grant. Raleigh, NC. NC Sea Grant Project Number 2017-R/MG-1705. July 2018. pp. 67.
- ◆ Accepted for publication in *Biological Bulletin* (to come out in the October issue): Simmons, S.L. and R. A. Satterlie (BMB) 2018. Tentacle musculature in the cubozoan jellyfish *Carybdea marsupialis*. (Stephanie Simmons is a former graduate student)

Grants

- ◆ Alison Taylor, (PI, BMB), Catharina Alvez-DeSouza (MARBIONC), Susanna Lopez-Legentil (BMB), Ann Pabst (BMB) and Steve Emslie (BMB) were awarded \$611,000 from the NSF Major Research Instrumentation Panel for acquisition of a replacement scanning electron microscope with X-ray microanalysis which will be housed in the Richard M. Dillaman Biological Imaging Facility in Dobo Hall. Named investigators and auxiliary users included: Andrea Hawkes, Todd LaMaskin, Tiffany Keenan-Bateman, Bill McLellan, Patrick Erwin, Wilson Freshwater, Craig Bailey, Jesse Jarvis, Darrin Pennys, Pam Seaton, Ying Wang, Larry Cahoon.
- ◆ Alcami and UNCW (Dan Baden; MARBIONC) were awarded a [Biopharmaceutical Workforce Development Grant](#) (\$400,000 in NIIMBL funding). The 18 month pilot program includes good manufacturing practices and good laboratory practices course work followed by summer internship opportunities in University translational science laboratories at UNCW and at Alcami and other participating local industries.

Grants

- ◆ UNCW will be participating in a [statewide study](#) on Per- and Polyfluoroalkyl substances (PFAS); including researchers from the Department of Chemistry and Biochemistry and CAS Dean Volety.
- ◆ Steven Emslie (BMB) and Steve Skrabal (CHM) received a \$138,600 [grant](#) from the National Fish and Wildlife Foundation to investigate the bioaccumulation of mercury, arsenic and selenium in the Lower Cape Fear River estuarine system.
- ◆ Narcissa Pricope (PI, EOS) and Co-PI Akella (UNCC) received funding from the University of North Carolina General Assembly, Stage 2 Inter-Institutional Planning Grant program for: Synchronous Mapping of Coastal Habitat Change Using Multiple Unmanned Aerial Vehicles. Amount awarded \$75,000 (to UNCW \$30,000).
- ◆ The Benthic Ecology Lab (Troy Alphin and Martin Posey; CMS, BMB) and Fred Scharf (BMB) received a year 3 renewal for “A partnership for sustained fisheries management...” From NC Division of Marine Fisheries. \$172,464 total over 3 years. This grant is funding undergraduate interns as they gain hands-on experience in practical fisheries management.
- ◆ The Benthic Ecology lab (CMS, BMB) also received funding from NOAA NMFS for a 4 year project, “Assessment of Nekton Utilization of Recently Established Marsh Sub-Habitats in Poplar Island; Development of a Conceptual Model for Testing Success” . \$282,158. (2018-2022).
- ◆ Fred Bingham (PPO) received \$38K from NASA to do SPURS-2 data synthesis.
- ◆ Gagne, S., N. Kaza, R. E. Urbanek, and C. Dumas. (EVS) received funding from the UNC Inter-Institutional Planning Grant Program for “Creating an interdisciplinary network to investigate the drivers of urban biodiversity”. \$22,000.
- ◆ NOAA FY2018 Marine Debris Prevention grant competition has awarded MarineQuest \$131,000 for its Turtle Trash Collectors (2TC) project. The grant will leverage students’ fondness for sea turtles to cultivate their concern for the impacts of marine debris on these species. Staff will visit schools in nine different coastal counties and provide students with the opportunity to conduct a simulated sea turtle necropsy and join a digital badging program to combat marine debris.

CMS & Partners

- ◆ The Undersea Vehicles Program (UVP) completed 7 operational days south of Ponce, Puerto Rico in late June and early July aboard the NOAA Ship Nancy Foster. The team was conducting multi-beam ground truthing for NOAA's Tim Battista from the National Centers for Coastal Ocean Science. UVP spent 36 hours on the seafloor during these 7 days and took 1,599 digital stills.
 - ◇ In late July UVP spent 6.5 operational days in the Flower Garden Banks National Marine Sanctuary offshore Galveston, Texas. This included 2 legs on the R/V Manta; first was sponsored by NOAA's Deep Sea Coral Program and concentrated on transects/sample collection, second was for the sanctuary and was the Stetson Bank long term monitoring cruise. The team spent 36 hours on the seafloor with the ROV during this time and took more than 1300 digital stills photos. During this cruise the team also identified a very special fish, the Maori Basslet (*Lipogramma schrieri*), this identification at Geyer Bank in 140m of water extended the range of this fish by more than 1500 miles!
- ◆ From MarineQuest:
 - ◇ We have officially hired a new AmeriCorps member who will be starting at CMS September 10. MarineQuest is very excited to be hosting an AmeriCorps member this upcoming year. Jade Woll will be joining us as the Coastal Citizen Science Ambassador, and we know she's going to fit in very well with the CMS community! Jade comes to us with previous experience as an AmeriCorps member with the Coastal Land Trust, and has also held positions in conservation and education throughout her career. Jade worked for MarineQuest during the 2017 summer season, and we are thrilled she is joining us again! Her main role as the Coastal Citizen Science Ambassador will be to educate the community on coastal resilience, through the organization of events, trainings, and opportunities for community members to become more involved in coastal conservation. If you see her around the hallways, please say hi and help her feel welcome!
- ◆ **The Coastal & Marine Science newsletter online format has been delayed due to Hurricane Florence. Stay tuned for future details on this format and an online form for item submissions.**