



E-SLATE

American Academy of Underwater Sciences (AAUS)

EDITORIAL NOTE –July 2019

Welcome to the July E-Slate. In this edition, we have a message from the President, announce the 2019 Scientific Diving Lifetime Achievement Award, continue registration for the 2019 AAUS/CAUS Diving for Science Symposium, give an update on Diving Safety Manual uploads and much more. We welcome news, announcements, job postings and images of underwater work at aaus@aaus.org. Current and past issues of the E-Slate are available at www.aaus.org. **Be sure to follow us on Instagram, Facebook and Twitter!**

President's Message

This month I want to address a topic that several individuals have brought up since we last met at the Annual Symposium in Lake Tahoe - the status of the Medical Standards Panel. To put this in some context, it has been 8 years since the last medical review panel was seated to provide recommendations relative to AAUS' minimum medical standards. At the Joint Agency Meeting in 2018, and again at the 2018 Annual Symposium, there were significant discussions on the need for another medical review panel given the evolution of scientific diving over the last decade (e.g., increased use of mixed gas dives, etc.). A subcommittee consisting of Doug Schleiger, Liz Kintzing, and myself, have solicited names for an Oversight Committee [OC] and the Medical Review Panel [MRP], and we have identified at least two target dates for the actual meeting. Members selected to the OC can expect to be notified by the subcommittee in the coming weeks. Thanks to those who provided nominations for the OC.

The OC will consist of about 10 Diving Medical Officers. Their job will be to identify and prioritize the medical issues that will be discussed by the MRP during the two-day meeting. The OC will reach out to membership over the coming months, likely via a website poll, so watch for that. The MRP will consist of about 6 internationally-respected diving physicians/physiologists, and their job will be to:

- 1) review the existing medical standards,
- 2) update medical standards using scientifically-defensible rationales, and
- 3) consider additional timely questions raised by the OC.

We anticipate the OC will be active throughout the Summer and hand off their documents to the MRP in early Fall. Ideally, the MRP will meet in Fall 2019 (possibly as a breakout session from the UHMS meeting in San Diego), but it is more likely the MRP will meet in Spring 2020, and the

Proceedings Volume will be published during the Summer of 2020.

On another front, I just want to remind everyone that your new manuals should have been uploaded by June 1st. If you could not meet that deadline, please reach out to AAUS Standards Committee to let them know when we can expect your program to be in compliance. Thanks for your continued support of the AAUS.

Marc Slattery
University of Mississippi

ANNOUNCEMENTS

2019 Scientific Diving Lifetime Achievement Award



The 2019 American Academy of Underwater Sciences recipient of the Scientific Diving Lifetime Achievement award is Stephen C. Jewett. Stephen C. Jewett, Ph.D., is Research Professor Emeritus at the College of Fisheries and Ocean Sciences, University of Alaska Fairbanks. He retired in 2015 after 42 years of service.

Over those years, Stephen conducted research on benthic ecology, trophic interactions, benthic impact assessments, Arctic ecosystems, pollution/contamination monitoring, and scuba techniques for scientific divers. Most of his research has focused on impact assessment issues in marine waters, such as effects from El Niño, the Kasatochi Volcano eruption, commercial trawling, log storage, offshore dredging, mercury and radionuclide contamination, Alyeska Pipeline Terminal operations, the Exxon Valdez oil spill, offshore/onshore mining and the Sitka Airport extension.

Dr. Jewett has published 110 peer/editor-reviewed journal articles/book chapters, many as senior author. He conducted much of his research throughout Alaska using cold-water scuba diving techniques. His work has led to the discoveries of 22 new marine species, including one alga, one sea anemone, two bryozoans and 18 sea stars. He was an invited speaker to seven countries.

Dr. Jewett's honors include: 2018 Wally Noerenberg Award for Fishery Excellence (co-recipient); 2015 Emeritus

Research Professor, UAF; 2015 Commencement Grand Marshall, UAF; 2013 Conrad Limbaugh Memorial Award for Scientific Diving Leadership; 2011 Career Achievement Award, John Brown University Alumni Association; 2006 Fulbright Scholar; Senior Specialist in Environmental Science at Catholic University of the North, CHILE; 2004 Emil Usibelli Distinguished Research Award, UAF; and 2004 The Wildlife Society Wildlife Publications Award for Outstanding Monograph (co-recipient).

Dr. Jewett has demonstrated an outstanding marine research career. He also served as DSO for 27 years, was instrumental in the formation of the UA Scientific Diving Program, and to UA becoming an organizational member of AAUS in 1990. We congratulate Dr. Jewett on his significant achievements. The AAUS Scientific Diving Lifetime Achievement Award is presented biennially to an individual from the scientific diving community who has made a significant contribution in advancing underwater science and technology.

2019 AAUS/CAUS Diving for Science Symposium

The 2019 AAUS Diving for Science Symposium will be held in conjunction with CAUS and co-hosted by Vancouver Aquarium (an Ocean Wise Initiative) and Simon Fraser University, October 08-11, 2019. Registration is now open and workshops are filling up quickly! Please note that there are a few changes to our normal schedule, with all events (except the field trip) being concluded on Friday rather than Saturday. Additionally, we have a new registration site this year. **All AAUS members should login with their IM credentials in order to receive member pricing for all events. CAUS members, who are not also AAUS members, can contact CAUS to receive a discount code to obtain member pricing.**



The week will be filled with technical workshops ranging from Bauer compressor technician certification, PSI and DAN courses to diving workshops covering tethered diving and coastal BC fish identification; we will also have instructional workshops dealing with diving safety management by the Canadian Coast Guard, situational awareness, narcosis and much more! Following opportunities for diving as well as social and networking events, we will wrap up the week with the national DSO meeting, science symposium, poster session and annual awards banquet. Additionally, we are offering a post-meeting field trip to



amazing Port Hardy! Space is very limited so register soon to take advantage of this opportunity. We welcome diving scientists, students, diving safety officers and anyone with an interest in diving science to participate in this event. <https://aaus.org/AnnualSymposium>.

Abstract Submissions

Abstracts for the 2019 AAUS/CAUS Diving for Science Symposium are to be submitted **NO LATER than July 15, 2019**. AAUS will accept short abstracts (maximum of 300 words), extended abstracts (800-1200 words) or full manuscripts. Abstracts should be submitted electronically to aaus@aaus.org with "2019 AAUS symposium" followed by the format (abstract/extended abstract/full paper) and your name in the message line to facilitate tracking. Notification on the disposition of submitted abstracts will be returned to the first author electronically by **August 08th**, with any suggested revisions due by **September 01st**. No presentation will be allowed unless the final abstract or manuscript has been cleared for publication in the Proceedings, and abstracts/manuscripts will only be published if the presentation will be given. All submissions **MUST** use the [templates](#), which include detailed formatting instructions. Intention form and templates can also be found on the [symposium website](#) under the Resources tab.

2019 AAUS Dive Safety Manual Update

As of the deadline of June 01st, only approximately 1/3 of AAUS OMs have uploaded a 2019 version of their DSM and some OMs have severely outdated or missing manuals. This may be due to the transition from the old website, however, please be reminded that the 2019 update is mandatory for all OMs. A template of the new standard is available at www.aaus.org/about/diving_standards and instructions for uploading are attached. The standards committee will continue to review uploads and will contact non-compliant OMs directly.

Challenge Match Courtesy of One of Our Own

Bill Power (IM member since 2004), DSO for the LA County Sanitation Districts (OM member since 2014), recently contacted the Foundation with regard to an inheritance from a relative with an interest in Bill's work as a scientific diver. "I figured I would share some of the wealth with an organization that can further the goals of others with similar interests" Bill explained. At the very end of 2018, Bill donated \$5000 to support the bubble breaker at the upcoming Vancouver symposium and agreed to donate up to another \$5000 this year to match any and all donations to the Foundation (www.aausfoundation.org/donate) between now and the symposium. Please don't let this opportunity to double the impact of your giving pass; it only takes a few minutes to access the website and donate.

STUDENT OPPORTUNITIES

2019 AAUS OWUSS Interns

The 2019 Somers and Mitchell interns are off and diving! Keep up with their adventures this summer through their blogs. We are excited to see what all they get to experience and learn at Moss Landing Marine Laboratories, the University of Alaska and beyond.

Lee H. Somers Scientific diving intern – Kyra

Cipolla: <http://blog.owuscholarship.org/2019/06/diving-into-my-first-week-at-moss-landing/>

Mitchell Scientific Diving Research intern –

Liza Hasan: <http://blog.owuscholarship.org/2019/06/the-beginning/>

2019 Dr. Nancy Foster Scholarship Recipients

NOAA's Office of National Marine Sanctuaries has selected three graduate students as recipients of the Dr. Nancy Foster Scholarship, representing graduate-level areas of study such as marine biology, oceanography and maritime archaeology. The scholarship recognizes outstanding graduate students and encourages independent research, particularly by female and minority students. "This highly competitive scholarship program allows the next generation of NOAA scientists to grow intellectually while promoting the work and mission of the National Marine Sanctuary System," said John Armor, Office of National Marine Sanctuaries director.

The scholarship recipients for 2019 are; Elise Keister (University of Alabama at Birmingham), Erin Arneson (Georgia Southern University), Jenna Hartley (North Carolina State University), Nury Molina (University of California Santa Barbara) and Venessa ZoBell (Scripps Institute of Oceanography). Find out more about the class of 2019 at <https://fosterscholars.noaa.gov/>

JOB ANNOUNCEMENTS

Full information and application instructions for the following jobs can be found at the AAUS job board (requires member login).

Florida Keys Community College

Faculty in Marine Science

SPOTLIGHT

To see your research or organization featured, please send articles and photos to aaus@aaus.org. Please be sure that all photos/articles have credits if required.

Scientists create largest collection of coral reef maps ever made

A study from scientists at the Khaled bin Sultan Living Oceans Foundation and the University of Miami (UM) Rosenstiel School of Marine and Atmospheric Science offers a new way to accurately map coral reefs using a combination of Earth-orbiting satellites and field observations. This first-ever global coral reef atlas contains maps of over 65,000 square kilometers (25,097 square miles) of coral reefs and surrounding habitats.



Viewing coral reefs from above reveals much about their health and structure. Repeated observations through time can be used to track change. Regional-scale reef mapping is a key precursor for conservation of this imperiled ecosystem. Credit: Khaled bin Sultan Living Oceans Foundation

The maps, published April 18 online in the journal *Coral Reefs*, are the result of a 10-year Global Reef Expedition by scientists for the Khaled bin Sultan Living Oceans Foundation. The expedition traveled to over 1,000 remote coral reefs in 15 countries, mapping and surveying the reefs down to a one-square meter scale to better understand their health and resiliency. Many of the reefs visited on the expedition had never been studied before.

The high-resolution coral reef maps contain information on shallow water marine habitat such as fore and back reefs as well as information on the size of seagrass beds and mangrove forests for key locations visited on the expedition. All of these coastal habitats are key components of tropical coastal ecosystems and help to filter water, protect the coast from storms, and provide key nursery habitat for commercial and subsistence fisheries. They also face increasing threats from coastal development, overfishing, and climate change.

To develop the new model to accurately map coral reef and other tropical shallow-water marine habitats, scientists took data collected from extensive SCUBA surveys conducted on the Global Reef Expedition and extrapolate that information across the entire reef using ultra-high-resolution satellite imagery. By comparing the maps with video footage from cameras dropped at precise coordinates along the reef, the

scientists were able to verify the accuracy of their new mapping method.

"In order to conserve something, it's imperative to know where it is located and how much of it you have," said Sam Purkis, professor and chair of the UM Rosenstiel School Department of Marine Geosciences. "Developing such an understanding for coral reefs is especially challenging because they are submerged underwater and therefore obscured from casual view. With this study, we demonstrate the potential to use satellite images to make coral reef maps at global scale."

Scientists now have a way to peer beneath the waves to accurately map large areas of coral reefs at greatly reduced cost. Traditional coral reef surveys are expensive to conduct and limited in scope, requiring hours of underwater surveys conducted by highly-trained scientific divers. Using this new model, scientists can create detailed coral reef habitat maps at a regional scale without having to survey the entire reef in person.

"Satellite, aircraft, and drone imaging will become an increasingly important tool for addressing the coral reef crisis at the global scale at which it's occurring," said Purkis, also the interim chief scientist for the Living Oceans Foundation.

The high-resolution coral reef maps made for this study can be found on the World Reef Map, an interactive coral reef atlas where users can explore all of the coral reefs and shallow water marine habitats mapped on the Global Reef Expedition.

Although they by no means cover every reef worldwide, this new atlas covers a meaningful portion of key reef provinces around the world. It also provides much-needed baseline data of coral reef health prior to the 2017 mass bleaching event. This digital resource has been made available to the public so that governments and conservation organizations can use these maps to protect and restore their coral reefs for generations to come.

Scientists estimate that over 50 percent of coral reefs worldwide have been lost in the past 40 years due to climate change and other human pressures. These new detailed habitat maps can help local resource managers identify areas that may be in greatest need of conservation action.

"Benthic habitat maps are an essential tool in coral reef conservation as they provide a snapshot of where reefs are located and the status of their health," said Alexandra Dempsey, the director of science management for the Khaled bin Sultan Living Oceans Foundation and a co-author of the paper. "Scientists will use these habitat maps as baseline data

to help track changes in reef composition and structure over time."

The study, titled "High-resolution habitat and bathymetry maps for 65,000 sq. km of Earth's remotest coral reefs," was published online on April 18, 2019 in the journal *Coral Reefs*.

By University of Miami

Full article found [here](#)

RECENT PUBLICATIONS

- Beca-Carretero, P., Stanschewski, C.S., Julia-Miralles, M., Sanchez-Gallego, A., & Stengel, D.B. (2019). Temporal and depth-associated changes in the structure, morphometry and production of near-pristine *Zostera marina* meadows in western Ireland. *Aquatic Botany*, 155: 5-17.
- Benevides, L.J., Cardozo-Ferreira, G.C., Ferreira, C.E.L., Pereira, P.H.C., Pinto, T.K., & Sampaio, C.L.S. (2019). Fear-induced behavioural modifications in damselfishes can be diver-triggered. *Journal of Experimental Marine Biology and Ecology*, 514: 34-40.
- Casadesus, J.M., Aguirre, F., Carrera, A., Boadas-Vaello, P., Serrando, M.T., & Reina, F. (2019). Diving-related fatalities: multidisciplinary, experienced-based investigation. *Forensic Science Medicine and Pathology*, 15 (2): 224-232.
- Gunes, A.E., Celile, H., Yilmaz, O., Erbas, C., & Gumus, E. (2019). Acute and chronic effects of pressure on dynamic thiol-disulphide homeostasis in divers. *Fresenius Environmental Bulletin*, 28 (4): 2949-2956.
- Hermoso, M.I., Martin, V.Y., Stotz, W., Gelcich, S., & Thiel, M. (2019). How does the diversity of divers affect the design of citizen science projects? *Frontiers in Marine Science*, 6.
- Kerin, T. (2019). Human factors in real life applications: A scuba example. *Process Safety Progress*, 38 (2).
- Mitchell, S.J., Bennett, M.H., Bryson, P., Butler, F.K., Doolette, D.J., Holm, J.R., Kot, J. & Lafere, P. (2019). Consensus guideline: Pre-hospital management of decompression illness: expert review of key principles and controversies. *Undersea and Hyperbaric Medicine*, 45 (3): 273-282.
- Pasternak, G., Ribic, C.A., Spanier, E., Ariel, A., Mayzel, B., Ohayon, S., & Zviely, D. (2019). Nearshore survey and cleanup of benthic marine debris using citizen science divers along the Mediterranean coast of Israel. *Ocean & Coastal Management*, 175: 17-32.
- Sadler, C., Latham, E., Hollidge, M., Boni, B., & Brett, K. (2019). Delayed hyperbaric oxygen therapy for severe arterial gas embolism following scuba diving: A case report. *Undersea and Hyperbaric Medicine*, 46 (2): 197-202.
- Widmer, L., Heule, E., Colombo, M., Rueegg, A., Indermaur, A., Ronco, F., & Salzburger, W. (2019).

Point-Combination Transect (PCT): Incorporation of small underwater cameras to study fish communities. *Methods in Ecology and Evolution*, 10 (6): 891-901.

The mission of the American Academy of Underwater Sciences is to facilitate the development of safe and productive scientific divers through education, research, advocacy and the advancement of standards for scientific diving practices, certifications, & operations.

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