



E-SLATE

American Academy of Underwater Sciences (AAUS)

EDITORIAL NOTE – November 2011

Welcome to the November issue of the *E-Slate*. Thank you to all AAUS Symposium attendees and organizers, it was a great success! Be sure to read the AAUS Symposium highlights for a recap of the meeting. This issue has new publications and announcements and details on the upcoming changes in the DAN Business Membership. Please continue to submit news, announcements, job postings, and images of underwater work to aaus@disl.org. Current and past issues are available at www.aaus.org.

NEWS/ANNOUNCEMENTS

AAUS Symposium 2011

The 2011 AAUS Symposium, held at the Darling Marine Center and in Portland, ME was a great success! From diving Maine's coastal waters and learning about lobster ecology to workshops on Diving First Aid for Professional Divers and cylinder inspection, there was something for everyone. The new DSO workshop drew 33 participants, the annual DSO and business meeting 80 individuals, and the scientific symposium 110 individuals. Presenters included the 2006 and 2010 Kathy Johnston scholarship winners Jodi Pirtle and Aaron Galloway, respectively. Aaron's travel to the meeting was partially funded by a Maine SeaGrant provided to AAUS. Jenna Walker reported on her experience as an AAUS/Our World Underwater intern based at Shannon Point Marine Center in Washington State. Ross Whippo (University of British Columbia) won the competition for the best student presentation. Honorable mention was received by Phoebe Jekielek (University of Maine) and Thomas Leeuw (University of Maine).

AAUS Service Recognition Awards were presented at the banquet to Dave Pence, Phil Lobel and Liz Kintzing for their service as Directors, to Brenda Babin for help with the statistic reporting website and to Heather Fletcher for everything she does for all of us. Bret Gilliam, the invited speaker, entertained attendees with recollections of his early days in scientific and technical diving.

Our thanks go to the Darling Marine Center, The University of Maine, SeaVentures Charters, workshop coordinators, and all participants for making it a productive and enjoyable week. Special thanks to Ocean Enterprises for hosting the DSO Bubblebreaker reception and to Maine SeaGrant, CIEE, and Bret Gilliam of Ocean Tech, Inc. for additional funding and support.



Photos from the 2011 Symposium: Maine lobster feed; Bret Gilliam of Ocean Tech Inc. and Host DSO Chris Rigaud; Kathy Johnston and KJ scholarship winner, Jodi Pirtle; boat diving in Maine. Photo credit: Heather Fletcher, Lora Pride and Michael Dardeau.

DAN Business Membership Changing

Starting November 01, the Business Membership Program is changing with the launch of a new program with a new name at DEMA. The enhanced program is simplified, yet it offers a great deal more to its participants. It begins with two levels of membership, a \$50 per year basic option that comes with DAN promotional materials, an online presence on the DAN Industry Partner directory and access to all Industry Partner programs. The expanded \$100 per year option includes all the benefits of the basic option but adds two individual DAN Memberships to the package.

Once a DAN Industry Partner, participants then have access to Industry Exclusive Products, a line of DAN products available to Industry Partners at keystone pricing (with an order quantity of five or more). The product line will launch at DEMA with four products, two of which will be available for sale only through Industry Partners; DAN will not sell them directly to the public. Additions to the product line will continue throughout 2012.

The program unveiling at DEMA is just the start. Additional benefits to the program will launch throughout 2012, including a new, simplified discount pricing structure, a revised rewards program that continues to offer the popular DAN points as well as cash incentives, an

improved Student Membership program and new group travel insurance opportunities and incentives.

Those OMs who are Business Members as a 'dependent' location under AAUS will be separate and individual and have their own full benefits on their next renewal. They can remain at the price they're paying now or can upgrade to the \$100/yr option.

Questions and interest in Business Membership should be directed to Samara Merrill, Manager - Business Memberships, Divers Alert Network. Phone: 919-684-2948 ext. 224 or email: smerrill@dan.org.

UMaine Scientific Diving Scholarship Established

The University of Maine Scientific Diving Program has received a \$5000 donation from JF White Contracting. The gift was provided in memory of Dr. John Dearborn and received by Rhian Waller, PhD at the 2011 AAUS Awards Banquet held in Portland, Maine on Saturday evening October 15th. Mr. Jim Clark of JF White noted that, "Dr. John Dearborn was a respected scientist, beloved teacher and perhaps more importantly a man who confronted every adversity with determination and wry humor!" The gift will be used to establish the John Dearborn Scientific Diving Scholarship Fund and be directed towards UMaine marine science students enrolled in the scientific diving training program.

Call for Papers – Maritime Archaeology

Papers are invited for the 23rd Annual Symposium on Maritime Archaeology and History of Hawaii and the Pacific to be held February 17-20, 2012 in Honolulu, HI. The symposium theme is "Diving into History: Technical and Sport Exploration of Shipwrecks." Abstracts should be no more than 300 words (excluding title and author[s]/affiliation[s]). All presenters must register for the conference. Submission deadline is November 01. Visit: http://www.mahhi.org/Call_for_Papers.html for details.

Manned and Unmanned Marine Research Study

The ability to collect data in-situ is vital to marine research. While many scientists recognize the symbiotic nature of manned (diving and submersible) and unmanned (remote and autonomous) techniques for marine data collection, the value of investment in a balanced suite of methods can be lost in times of technological advances and tight budgets. Karen Kohanowich is conducting doctoral research at George Mason University, VA, to address the requirement for this balanced investment. Her effort will include a review of available information and a survey of scientific divers designed to expand understanding. If you are aware of published/unpublished studies that compare manned and unmanned marine science data collection techniques, contact Karen (kkohanow@gmu.edu). Updates on the survey development will appear in the E-Slate.

FROM THE PRESIDENT

Building upon overarching goals identified by leadership in 2004, 2005, and 2006, the Board of Directors in 2007 outlined to membership a 5-year strategic plan to guide our efforts through 2011. In the years since, the Board has worked diligently to further these goals and strategies. We have seen greater efficiencies and central management of membership services and the conduct of symposia and collaborative workshops, greater support for student scholarships and internships, and the more effective conduct of management functions of the Board and our various committees. All the while managing an organizational membership growing by nearly 25% during this time.

We have invested in and are preparing to launch an entirely new web presence promising to better represent the goals and mission of the Academy. Its intent is to foster better communication within membership and access to the Academy's archives as well as to improve the management of the organization by centralizing Board functions and responsibilities in a common virtual workspace.

Outlined in our strategic plan and at the forefront of discussion amongst the Board has been an increase in Organizational Member dues and OM Applicant fee necessary to fund better central administrative support. The change was approved by the board in 2008 but implementation delayed to address concerns over the economic climate. Despite a continued soft economy, the Board has confirmed that the increase must be implemented to support the services delivered to the Academy. Effective January 01, 2012, Organizational Member annual dues will increase to \$500 and Organizational Member Applicant fees will increase to \$750.

The additional revenue will be used to increase the office manager position from 0.5 full-time equivalent (FTE) to 0.75 FTE. The AAUS Office Manager will continue to manage membership services, develop and maintain our website and virtual office, and plan and coordinate our symposia. We intend to grow the office's role in processing OM applications, including coordination of OM mentoring and standards review, and in the production of our monthly E-Slate newsletter.

UPCOMING EVENTS

DEMA 2011

The Diving Equipment and Marketing Association will hold its annual show in Orlando, FL November 02-05. For more information, visit: <http://www.demashow.com/>.

Tenerife Int'l Practical Anesthesiology Conference

The International Congress of Anesthesiology will meet November 7-10 at the Abama Golf & Spa Resort on Tenerife, Canary Islands. The topic of the conference is 'Hyperbaric medicine and its applications in daily practice.' The event is accredited by INAMI/RIZIV. Visit: www.tipactenerife.org for more information.

92nd Annual Meet - Western Society of Naturalists

The 92nd Annual Meeting of the Western Society of Naturalists (WSN) will be held November 10-13, at the Vancouver Hilton in Vancouver, WA. Visit: <http://www.wsn-online.org/meeting.shtml>.

41st Annual Benthic Ecology Meeting

The 41st Annual Benthic Ecology Meeting (BEM) will be held March 21-24, 2012 in Norfolk, Virginia at the Norfolk Marriott Waterside Hotel. The meeting will be hosted by Old Dominion University, an AAUS OM. Visit: <http://dl.dropbox.com/u/13470552/BEM%202012%20First%20Flyer.pdf>.

International Marine Forensics Symposium

The Marine Forensics Committee (MFC) of the Society of Naval Architects and Marine Engineers (SNAME) is holding the International Marine Forensics Symposium at the Gaylord National Hotel, Washington, DC, April 2-5, 2012. The symposium will honor the 100th anniversary of the sinking of RMS Titanic (April 12, 1912); the 150th anniversary of the sinking of USS Monitor (December 31, 1862); and approximately the 200th anniversary of the destruction of Commodore Joshua Barneys Flagship, the USS Scorpion during the War of 1812. The event is co-sponsored by: Marine Technology Society (MTS), Royal Institute of Naval Architecture (RINA), American Society of Naval Engineers (ASNE), and Institute of Marine Engineers, Science and Technology (IMARest). Visit: <http://www.rina.org.uk/marineforensics> for details.

Rebreather Forum 3.0

Rebreather Forum 3.0 (www.RF30.org) will be convened May 18-20, 2012 at the Caribe Royale Hotel in Orlando, FL. The meeting is co-sponsored by AAUS, DAN and PADI. This program will be of particular interest to the scientific diving community as there are now evolving rebreather concepts and technologies that are simplified from the technical diving approach with more potential of becoming mainstream scientific diving methodology.

JOB OPPORTUNITIES

Marshall Islands Coastal Environmental Advisor

The Marshall Islands Environmental Protection Authority is seeking a Coastal Environmental Advisor to serve with the RMI EPA for a minimum of two years. The successful candidate will be experienced in environmental management in coastal areas, be a certified scuba diver, have an MS or PhD, and a scientific understanding of tropical marine ecosystems. Contact Deborah Barker-Manase for more information at manase@gmail.com or 692-625-3035/5203.

NEW PUBLICATIONS

Goffredo S, Vergni P, Reggi M, Caroselli E, Sparla F, Levy O, Dubinsky, Falini G. The skeletal organic matrix from Mediterranean coral *Balanophyllia europaea* influences calcium carbonate precipitation. PLoS ONE 6(7): e22338.

Scleractinian coral skeletons are made mainly of calcium carbonate in the form of aragonite. The mineral deposition occurs in a biological confined environment, but it is still a theme of discussion to what extent the calcification occurs under biological or environmental control. Hence, the shape, size and organization of skeletal crystals from the cellular level through the colony architecture, were attributed to factors as diverse as mineral supersaturation levels and organic mediation of crystal growth. The skeleton contains an intra-skeletal organic matrix (OM) of which only the water soluble component was chemically and physically characterized. In this work that OM from the skeleton of the *Balanophyllia europaea*, a solitary scleractinian coral endemic to the Mediterranean Sea, is studied in vitro with the aim of understanding its role in the mineralization of calcium carbonate. Mineralization of calcium carbonate was conducted by overgrowth experiments on coral skeleton and in calcium chloride solutions containing different ratios of water soluble and/or insoluble OM and of magnesium ions. The precipitates were characterized by diffractometric, spectroscopic and microscopic techniques. The results showed that both soluble and insoluble OM components influence calcium carbonate precipitation and that the effect is enhanced by their co-presence. The role of magnesium ions is also affected by the presence of the OM components. Thus, in vitro, OM influences calcium carbonate crystal morphology, aggregation and polymorphism as a function of its composition and of the content of magnesium ions in the precipitation media. This research, although does not resolve the controversy between environmental or biological control on the deposition of calcium carbonate in corals, sheds a light

on the role of OM, which appears mediated by the presence of magnesium ions.

Rasher BD, Stout EP, Engel S, Kubanek J, Hay ME. Macroalgal terpenes function as allelopathic agents against reef corals. PNAS 2011 doi:10.1073/pnas.1108628108.

During recent decades, many tropical reefs have transitioned from coral to macroalgal dominance. These community shifts increase the frequency of algal–coral interactions and may suppress coral recovery following both anthropogenic and natural disturbance. However, the extent to which macroalgae damage corals directly, the mechanisms involved, and the species specificity of algal–coral interactions remain uncertain. Here, we conducted field experiments demonstrating that numerous macroalgae directly damage corals by transfer of hydrophobic allelochemicals present on algal surfaces. These hydrophobic compounds caused bleaching, decreased photosynthesis, and occasionally death of corals in 79% of the 24 interactions assayed (three corals and eight algae). Coral damage generally was limited to sites of algal contact, but algae were unaffected by contact with corals. Artificial mimics for shading and abrasion produced no impact on corals, and effects of hydrophobic surface extracts from macroalgae paralleled effects of whole algae; both findings suggest that local effects are generated by allelochemical rather than physical mechanisms. Rankings of macroalgae from most to least allelopathic were similar across the three coral genera tested. However, corals varied markedly in susceptibility to allelopathic algae, with globally declining corals such as *Acropora* more strongly affected. Bioassay-guided fractionation of extracts from two allelopathic algae led to identification of two loliolide derivatives from the red alga *Galaxaura filamentosa* and two acetylated diterpenes from the green alga *Chlorodesmis fastigiata* as potent allelochemicals. Our results highlight a newly demonstrated but potentially widespread competitive mechanism to help explain the lack of coral recovery on many present-day reefs.

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.

American Academy of Underwater Sciences
101 Bienville Boulevard, Dauphin Island, AL 36528
Tel 251 591 3775 Fax 251-861-7540
aas@disl.org www.aas.org

Editor: Roxanne Robertson - aas@disl.org
Editorial Board: Neal Pollock, Michael Dardeau, Heather Fletcher, Christian McDonald, Michael Lang

AAUS BOARD OF DIRECTORS

Christian McDonald	President
Michael Lang	President-Elect
George Peterson	Secretary
Mike Dardeau	Treasurer
Kevin Flanagan	Director-at-Large, Standards Chair
Pema Kitaeff	Director-at-Large (DAL)
Neal Pollock	DAL, Meetings & Publications Chair
Marc Slattery	Appointed Director (AD), Standards
Jenn Caselle	AD, Scholarship Chair
Amy Moran	AD, Statistics Chair
Chris Rigaud	AD, Membership Chair