



E-SLATE

American Academy of Underwater Sciences (AAUS)

EDITORIAL BOARD NOTE – June 2011

Welcome to the June issue of the *E-Slate*. There are several significant deadlines this month: abstracts for the fall AAUS meeting (June 01) and nominations for the Conrad Limbaugh award, AAUS study scholarship applications and 2010 AAUS statistics (June 30). There are also several job postings. Check them out and share them with your fellow divers.

Please continue to submit news, announcements, job postings, and images of underwater work to aaus@disl.org. Current and past issues of the *E-Slate* are available at www.aaus.org.

NEWS/ANNOUNCEMENTS

Call for Abstracts - AAUS 2011

Abstracts (150-250 words) for the upcoming AAUS symposium can be submitted until **June 01**. As discussed in the February 2011 *E-Slate*, the minimum manuscript obligation has changed from full papers to extended abstracts (800-1200 words). Note: longer manuscripts can be submitted if authors prefer. The deadline for final extended abstract or manuscript is **August 01**. The published proceedings will be available at the fall meeting. Details on the AAUS website (<http://www.aaus.org>).

Call for Nominations - Conrad Limbaugh Award

The Conrad Limbaugh Memorial Award is presented annually to an individual who has made a significant contribution in diving safety and diving leadership on behalf of the scientific diving community. Conrad Limbaugh was an underwater naturalist and Chief Diving Officer at the Scripps Institution of Oceanography, where he directed the diving program. He was killed in a scuba diving accident in the Mediterranean on March 20, 1960. Limbaugh graduated from Whittier College in 1948 and did graduate work at the University of California at Los Angeles before going to Scripps in 1950. He was largely responsible for developing the diver-training program at Scripps, as well as many research techniques used by marine scientists. Please send all nominations with a justifying paragraph by the nominating member, along with the nominee's biosketch and contact information, to the AAUS Awards Committee, c/o John Heine, via e mail to: jheine@ucsd.edu. Nominations close on June 30.

Call for Nominations - AAUS Achievement Award

The AAUS Scientific Diving Lifetime Achievement Award is presented annually to an individual from the scientific diving community who has made a significant contribution in advancing underwater science and technology. Open to anyone in the scientific diving community. Candidates are nominated by AAUS General Membership and voted and approved by the Past Presidents of AAUS and Past Award Recipients. Current BOD Members are not eligible during their term of office. Please send all nominations with a justifying paragraph by the nominating member, along with the nominee's biosketch and contact information, to the AAUS Awards Committee, c/o John Heine, via email to: jheine@ucsd.edu. Nominations close June 30.

AAUS Statistics Due

Important note! The deadline for 2010 statistics is June 30, 2011. AAUS has a new URL (<http://stats.diveaaus.org>) and a new look to the stats entry page. By logging in, you can enter your stats and review, not only your previous OM numbers but all AAUS summary statistics as well. If you have any questions about AAUS data collection criteria, please review the AAUS Statistics Collection Criteria and Definitions available at the site or contact Mike Dardeau (mdardeau@disl.org) directly.

Lodging for the 2011 Symposium

Do not delay in booking lodging for the 2011 Symposium. Space is limited both in the DMC area and in Portland this time of year. Please note that pre-symposium meetings and workshops (October 10-12) will be held at Darling Marine Center (DMC). Driving time from Portland to the DMC is about 90 minutes. Most attendees will likely prefer to arrange housing for DMC-based events through DMC or surrounding Inns. AAUS events do not begin in Portland until October 13. The AAUS group rate at the Portland Regency is only available Wednesday-Sunday (October 12-16). Bookings at Portland Regency outside of these dates will be at the regular price.

FUNDING/SCHOLARSHIPS

AAUS 2010 Student Scholarships

The American Academy of Underwater Sciences awards two scholarships to graduate students engaged in, or planning to begin, a research project in which diving is or

will be used as a principal research tool or studying diving science.

The Kevin Gurr Scholarship awards \$2500 to a Masters Program student. The Kathy Johnston Scholarship awards \$2500 to a Ph.D. candidate.

The AAUS may also award two additional \$1500 scholarships to the next two proposals that are ranked the highest. If the additional scholarships are awarded, they may be split between the Masters program and the Ph.D. program, or they may be both awarded within a single program.

Applicants must fulfill the following requirements: Be a current member of AAUS (student or full member). Be accepted and enrolled in a Masters program (for the Masters Program award) or a Ph.D. program (for the Ph.D. program award). Submit electronically a proposal of 3 to 5 pages describing the research methods, significance of the research, and a budget (if part of a larger budget, specify how AAUS funds will be spent). Agree to write an article for the E-Slate, a news publication of AAUS, describing the proposed research. Present the results of their research at an AAUS symposium or other scientific meeting within one year of the project's completion. A letter of support from a faculty advisor must be submitted electronically.

Proposal deadline is June 30.

Scholarship winners will be announced October 01. E-mail the proposal, budget, and letter of support (all as attachments) to aaus@www.disl.org. The subject of the e-mail should be "Scholarship" For more information, contact the Scholarship Committee Chair at aaus@disl.org.

EQUIPMENT RECALLS/ADVISORIES

Sea Elite BCD Recall

The U.S. Consumer Product Safety Commission and Health Canada, in cooperation with Sea Elite BCD have announced a voluntary recall of Sea Elite Scout and Profile model Buoyancy Control Devices. The Scout is a jacket-style BCD made of lightweight nylon and is foldable. It is black with blue accents on the lower sides. The word "Scout" is printed in white letters on the right front and the words "Sea Elite" are on a flap over the corrugated hose. Scout BCDs within the following serial number ranges are affected by this recall: 001229 to 001244 and 001246 to 001489. The serial number is printed on a tag in the front pocket. The Profile is a jacket-style BCD made of heavyweight nylon. It is black with blue on the lower sides. The word "Profile" is printed in white letters on the right front and the words "Sea Elite" are on a flap over the corrugated hose. A list of serial numbers affected by this recall can be found at www.edge-gear.com. Consumers should immediately stop using the BCDs and return them to an authorized Sea Elite Systems dealer for a free spring replacement at no charge. For additional information,

contact Chris Richardson at 1-888-370-3483 between 0900 and 1700 EST, Monday through Friday.

Worthington Cylinders Advisory

Recently there has developed a situation where Worthington Cylinders scuba cylinders SP-14157 have failed hydrostatic requalification. The following information is provided to you for use in counseling those who may be affected by this situation. When the requalification process has been properly administered (by first conducting the required pretest twice at 89% test pressure followed by the requalification test to test pressure) X-S SCUBA, the distributor of this cylinder, will replace these cylinders when the following information is provided to them:

1. A completed hydrostatic report that shows the requalification process was properly conducted
2. Complete data is recorded from the crown
3. A picture of the cylinder clearly indicating it will not hold gas inclusive of the serial number. X out all markings except serial number and hydro.

Contact 866-977-2822 for more information.

DUI Weight and Trim Systems Warning

DUI recently became aware of a problem with some DUI Weight & Trim Systems shipped after July 2010. If the lanyard and/or cables are not the right length the weight pockets do not easily detach from the harness when the handle is pulled. In the unlikely situation a handle is pulled in an emergency situation, this could prevent the weights from easily dropping as designed. No incidents have been reported. All of the systems affected have GRAY fabric handles. Systems with yellow plastic handles are NOT affected. If you have one of these systems, stop using it immediately and call DUI at 800-325-8439 or e-mail customerservice@dui-online.com to receive instructions.

DUI Weight & Trim System Owners

DUI Weight & Trim Classic

DUI Weight & Trim II

Systems shipped after April 20, 2011 with yellow handles or gray handles and a large silver stripe are not affected.

UPCOMING EVENTS

SML Underwater Research Course

Shoals Marine Laboratory (SML), affiliated with Cornell University and the University of New Hampshire, is offering an *Underwater Research* course July 25-August 08, 2011. This course will be held on Appledore Island, located six miles off the coast of Portsmouth, NH. *Underwater Research* fulfills the requirements to obtain active AAUS scientific diver status and the course credits may be transferable to your home institution. The primary goal is to provide guidance and opportunities for students

to conduct original research underwater. Lectures cover the philosophy of research, hypothesis testing and experimental design, theoretical and practical aspects of sampling, current ecological research in the Gulf of Maine, new techniques for underwater research, advanced aspects of diving physics and physiology, theory and use of diving tables, and hyperbaric medicine, among other important topics. All students have the opportunity to design and conduct original research as a focus of the course. Dive accident management, CPR, first aid, AED and oxygen administration training for divers is also included. Tuition includes room and board, activity fees, and round trip boat transportation between Portsmouth, NH and Appledore Island. Financial aid is available. For more information visit: <http://www.sml.cornell.edu>.

Sci. of Wound Care, Diving, & Hyperbaric Med

The conference will be held at the Ritz Carlton in Palm Beach, FL, August 04-07, 2011. Visit: www.orf2011.com or contact Sharon Phillips at sphillips@orf2011.com.

EUBS Annual Scientific Meeting 2011

The 37th annual scientific meeting of the European Underwater and Baromedical Society (EUBS) will be held August 24-27 at the Medical University of Gdansk, in Gdansk, Poland. Main conference topics will include: diving physiology and medicine; non-dysbaric disorders; research in deep diving and dysbaric diving disorders; basic research and clinical hyperbaric medicine; and hyperbaric safety, technology and organization. Abstract submission deadline is May 01. Several satellite meetings will also be conducted: ECHM workshop 'HBO in Emergency Medicine,' EBAss meeting, EDTCmed meeting and DAN Divers Day. Visit: www.EUBS2011.org.

AAUS Symposium 2011

The 2011 AAUS Symposium will be held in Portland, ME October 10-15. The Portland Regency will serve as the symposium hotel and the University of Maine Darling Marine Center will host the preconference workshops, annual DSO meeting and AAUS Business meeting. Workshops include:

- PSI - VCI certification and recertification courses
- PSI - Eddy Current Testing
- DAN Instructor Certification
- Diver-based suction sampling: a monitoring tool for newly settled lobsters
- Quantitative observation of the adult American lobster (*Homarus americanus*)
- New DSO Orientation
- DUI Demo Day

Make travel and lodging arrangements early to avoid missing out. Look for additional information and registration materials in an email invitation that will go out to all members or on our website (www.aaus.org). You can

register directly at <http://guest.cvent.com/d/ydqqkt/4W>. Contact Chris Rigaud at crigaud@maine.edu or the AAUS office at aaus@disl.org for more information.

DAN Diving and Hyperbaric Medicine Course

The 70th DAN Diving and Hyperbaric Medicine Course will be held October 22-29 at the Mayan Princess Beach Resort in Roatan, Honduras. This six-day course is designed primarily for physicians. Emergency medical personnel, paramedics, nurses and professionals with interest in diving medicine will also find the course valuable. The program is jointly sponsored by DAN and Wilderness Medical Society for continuing education credit. A special dive package supplements the course. Contact DAN Education at 919-684-2948, ext. 555 or 800-496-446-2671, ext. 555 or cme@dan.org. Visit:

<http://www.diversalertnetwork.org/Events/Event.aspx?EventID=880>.

Tenerife Int'l Practical Anesthesiology Conference

The International Congress of Anesthesiology will meet November 07-10 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.

International Marine Forensics Symposium

The Marine Forensics Committee (MFC) of the Society of Naval Architects and Marine Engineers (SNAME) is planning an "International Marine Forensics Symposium" to be held at the Gaylord National Hotel, Washington, DC, on April 02-05, 2012. The Symposium date was selected to 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 Barney's Flagship, the USS Scorpion during the war of 1812, as it tried to defend against the British march on Washington, DC. This 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). For more information visit: <http://www.rina.org.uk/marineforensics>.

JOB OPPORTUNITIES

Assistant DSO California Academy of Sciences

The Assistant Dive Safety Officer will work with a diverse team of divers in the implementation of dive safety procedures and guidelines to ensure the safety of all employees at the facility and offshore. The Assistant Dive Safety Officer will possess a broad knowledge base in all aspects of diving and diving technology. S/he should also

possess a broad technical and scientific expertise in aquarium and research related diving. In short, the Assistant Dive Safety Officer's level of knowledge and diving skills should span the reach of the California Academy of Sciences' dive program, qualifying them to perform any aspect of program operation. Visit http://calacademy.snaphire.com/jobseeker/safelink=JSJD&O_p=FvqJ7& for the complete job listing.

Ocean Observatory Tech. at MBARI

This position is responsible for the operation, integration, maintenance, and calibration of oceanographic equipment and instruments deployed on MBARI's moorings. Duties include, but are not limited to: perform maintenance of oceanographic instrumentation and ensure reliable operation prior to deployment, assist with the integration and testing of scientific sensors, assist with the development, deployment, and maintenance of MBARI's moorings. May be required to go to sea for specified periods.

Qualifications: Minimum associate's degree or equivalent and five years related experience required. Previous experience in the maintenance, operation, and integration of standard oceanographic instrumentation is required. Demonstrated experience in the deployment and recovery of oceanographic moorings is preferred. Experience with basic electronic test equipment is required. Working knowledge and operation of PC-based computer applications is required. Experience with UNIX/Linux is required and familiarity with C is a plus. Scuba diving experience is desirable and Scientific Diver certification is a plus. Excellent communication skills and the ability to work with diverse groups of people are required. For more information visit: www.mbari.org/oed/jobs/OOT.html.

Laboratory Assistant III – UCSB

Job Duration: Full-time, limited (~6 months); immediate
Compensation: \$2794/month

Summary of Job Duties: 50% Daily

Under direct supervision, conduct biological surveys of artificial and natural reefs off southern California using scuba. Scuba surveys include monitoring the abundance of common kelp forest algae, invertebrates and fish. Process field samples in the laboratory and analyzes them using dissecting and compound microscopes. Prepare diving and sampling gear for use in the field.

40% Daily

Under general supervision: 1) process, sort and classify samples collected from the field; 2) perform data entry; 3) perform quality assurance/control procedures.

10% Daily

Assorted errand and data related tasks as needed.

Requirements:

-Current AAUS Research Diving Certification

-Nitrox certification from accredited certifying agency
-Familiarity with taxonomy and classification of Pacific coast marine invertebrates, algae and fish.

Send cover letter, resume, and reference contact information to David Huang (david.huang@lifesci.ucsb.edu).

Dive Tech. - University of Alaska

Researchers at the University of Alaska Fairbanks are seeking an AAUS-certified diver to assist with a field experiment in Juneau, AK. The job will involve assisting a PhD student in Dr. Ginny Eckert's lab conducting predation experiments using juvenile red king crabs. This supports a king crab stock enhancement feasibility study: <https://www.uakjobs.com/applicants/jsp/shared/frameset/frameset.jsp?time=1298299888679>.

Georgia Aquarium Assistant DSO

The Assistant Dive Safety Officer (ADSO)/Volunteer Coordinator will work with a diverse team of divers in the implementation of dive safety procedures to ensure the safety of all employees at the facility and offshore. The ADSO will possess a broad knowledge base in all aspects of diving and diving technology. S/he should also possess broad technical and scientific expertise in research and research-related diving. The ADSO's level of knowledge and diving skills should span the reach of the Georgia Aquarium's dive program, particularly the volunteer diving program. Contact Jeff Reid, DSO/Manager (404-581-4310; jreid@georgiaaquarium.org) for more information and application.

NEW PUBLICATIONS

Dickens LC, Goatley CHR, Tanner JK, Bellwood DR. Quantifying Relative Diver Effects in Underwater Visual Censuses. PLoS ONE 2011; 6(4): e18965. doi:10.1371/journal.pone.0018965

Diver-based underwater visual censuses (UVCs), particularly transect-based surveys, are key tools in the study of coral reef fish ecology. These techniques, however, have inherent problems that make it difficult to collect accurate numerical data. One of these problems is the diver effect (defined as the reaction of fish to a diver). Although widely recognised, its effects have yet to be quantified and the extent of taxonomic variation remains to be determined. We therefore examined relative diver effects on a reef fish assemblage on the Great Barrier Reef. Using common UVC methods, the recorded abundance of seven reef fish groups were significantly affected by the ongoing presence of scuba divers. Overall, the diver effect resulted in a 52% decrease in the mean number of individuals recorded, with declines of up to 70% in individual families. Although the diver effect appears to be a significant problem, UVCs remain a useful approach for quantifying spatial and temporal variation in relative fish abundances, especially if using

methods that minimise the exposure of fishes to divers. Fixed distance transects using tapes or lines deployed by a second diver (or GPS-calibrated timed swims) would appear to maximise fish counts and minimise diver effects.

Gempp E, Louge P, Blatteau JE, Hugon M. Descriptive epidemiology of 153 diving injuries with rebreathers among French military divers from 1979 to 2009. *Mil Med.* 2011; 176(4):446-50.

INTRODUCTION: Rebreathers are routinely used by military divers, which lead to specific diving injuries. At present, there are no published epidemiologic data in this field of study. **METHODS:** Diving disorders with rebreathers used in the French army were retrospectively analyzed since 1979 using military and medical reports. **RESULTS:** One hundred and fifty-three accidents have been reported, with an estimated incidence rate of 1 event per 3,500 to 4,000 dives. Gas toxicities were the main disorders (68%). Loss of consciousness was present in 54 cases, but only 3 lethal drowning were recorded. Decompression sicknesses (13%) were exclusively observed using 30 and 40% nitrox mixtures for depth greater than 35 msw. Eleven cases of immersion pulmonary edema were also noted. **CONCLUSION:** Gas toxicities are frequently encountered by French military divers using rebreathers, but the very low incidence of fatalities over 30 years can be explained by the strict application of safety diving procedures.

Goodwin C, Jones J, Neely K, Brickle P. Sponge biodiversity of the Jason Islands and Stanley, Falkland Islands with descriptions of twelve new species. *J Mar Biol Assoc UK.* 2011; 91(4): 275-301.

Sponge samples were taken by scuba diving from four sites around Stanley and nine sites at the Jason Islands in the Falkland Islands. Twelve new species are described: *Iophon pictoni* sp. nov., *Lissodendoryx (Ectyodoryx) jasonensis* sp. nov., *Phorbas ferrugineus* sp. nov., *Phorbas shackletoni* sp. nov., *Myxilla (Styloptilon) acanthotornota* sp. nov., *Amphilectus fleecei* sp. nov., *Amphilectus dactylus* sp. nov., *Mycale (Aegogropila) nodulosa* sp. nov., *Scopalina erubescens* sp. nov., *Scopalina bunkerii* sp. nov., *Amphimedon calyx* sp. nov. and *Pachychalina erinacea* sp. nov. Information is also provided on the distribution and external appearance of other sponge species: *Iophon proximum* Ridley, 1881, *Clathria (Dendrocia) tuberculata* Burton, 1934, *Tedania (Tedania) mucosa* Thiele, 1905, *Tedania (Tedania) murdochi* Topsent, 1915, *Halichondria (Eumastia) attenuata* Topsent, 1915, *Siphonochalina fortis* Ridley, 1881 and *Haliclona (Soestella) chilensis* Thiele, 1905. The biogeography of the Falklands' sponge fauna is discussed.

Schories D, Niedzwiedz G. Precision, accuracy, and application of diver-towed underwater GPS receivers. *Environ Monit Assess.* 2011 May 26. [Epub ahead of print]

Diver-towed global positioning systems (GPS) handhelds have been used for a few years in underwater monitoring studies. We modeled the accuracy of this method using the software KABKURR originally developed by the University of Rostock for fishing and marine engineering. Additionally, three field experiments were conducted to estimate the precision of the method and apply it in the field: (1) an experiment of underwater transects from 5 to 35 m in the Southern Chile fjord region, (2) a transect from 5 to 30 m under extreme climatic conditions in the Antarctic, and (3) an underwater tracking experiment at Lake Ranco, Southern Chile. The coiled cable length in relation to water depth is the main error source besides the signal quality of the GPS under calm weather conditions. The forces used in the model resulted in a displacement of 2.3 m in a depth of 5 m, 3.2 m at a 10-m depth, 4.6 m in a 20-m depth, 5.5 m at a 30-m depth, and 6.8 m in a 40-m depth, when only an additional 0.5 m cable extension was used compared to the water depth. The GPS buoy requires good buoyancy in order to keep its position at the water surface when the diver is trying to minimize any additional cable extension error. The diver has to apply a tensile force for shortening the cable length at the lower cable end. Repeated diving along transect lines from 5 to 35 m resulted only in small deviations independent of water depth indicating the precision of the method for monitoring studies. Routing of given reference points with a Garmin 76CSx handheld placed in an underwater housing resulted in mean deviances less than 6 m at a water depth of 10 m. Thus, we can confirm that diver-towed GPS handhelds give promising results when used for underwater research in shallow water and open a wide field of applicability, but no submeter accuracy is possible due to the different error sources.

Simmons CM, Szedlmayer ST. Recruitment of Age-0 Gray Triggerfish to Benthic Structured Habitat in the Northern Gulf of Mexico. *Trans Am Fish Soc.* 2011; 140(1):14-20.

Recruitment of age-0 gray triggerfish *Balistes capriscus* to benthic artificial reefs was documented by diver surveys from 2003 to 2007. Divers counted and estimated the sizes of all gray triggerfish that recruited to three types of artificial reefs (all in 20-m depths) ranging from 1.2 to 4.0 m² in area. Reefs were located in the Gulf of Mexico 28 km south of Dauphin Island, Alabama. Forty artificial reefs built in June 2003 were surveyed in October–December 2003 and May 2004; 20 artificial reefs built in October 2005 were surveyed in October and December 2005 and May, August, and December 2006; 40 artificial reefs built in July 2006 were surveyed in June 2007; and 30 artificial reefs built

in August 2007 were surveyed in September, October, and December 2007. Recruitment patterns were similar in the fall and winter of 2003 and 2007. In 2005 significantly lower numbers of recruits were detected than in other years, which may have been caused by a major hurricane. Peak recruitment of age-0 gray triggerfish occurred from September to December. Based on known spawning seasonality and the first appearance of recruits in September in this study, gray triggerfish spend 4-7 months in the pelagic environment before recruiting to benthic habitat.

Sundal E, Grønning M, Troland K, Irgens A, Aanderud L, Thorsen E. Risk of misclassification of decompression sickness. *Int Marit Health*. 2011; 63(1):17-9.

Decompression sickness (DCS) is classified on the basis of which organ system is affected, and neurological DCS is considered more severe than DCS in joints and skin with respect to response to recompression treatment and risk of long-term sequelae. Gas bubble formation interstitially in the tissues or in the circulation is considered to be the mechanism for all types of DCS. Ten patients diagnosed as having DCS in joints or skin, by doctors experienced in diving medicine, underwent clinical examination by a neurologist and had an electroencephalogram. Eight of the ten subjects had findings suggesting central nervous system deficits. The findings indicate that DCS of the central nervous system often accompanies DCS of the joints and skin, and that local skin and joint symptoms may draw attention away from cerebral symptoms. We recommend that all cases with DCS should initially be treated as neurological DCS.

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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