E-SLATE

American Academy of Underwater Sciences (AAUS)

EDITORIAL BOARD NOTE – August 2010

Welcome to the August issue of the E-Slate. There are several new job listings and a range of international opportunities. It is gratifying to see the E-Slate used for such a variety of professional communications. Do not miss the August 01 deadline to submit nominations for the 2010 AAUS Conrad Limbaugh Memorial Award.

The E-Slate is a newsletter from and for the scientific dive community. We welcome news, announcements, job postings, new publications, and images of underwater work. Please email submissions to aaus@disl.org. Current and past issues of the E-Slate are available at www.aaus.org.

NEWS/ANNOUNCEMENTS

BOD Election Results

The results of the 2010 AAUS Board of Directors (BOD) election have been tallied and the Nominating Committee congratulates the newly elected Director at Large, Pema Kitaeff. Pema will start her three-year term on January 01, 2011. On behalf of the academy, we thank Pema Kitaeff, Christopher S. Moses and Tim White for participating in the election. The academy is doing well when it can attract volunteers as qualified as these candidates.

AAUS Products

Members now have a new way to purchase AAUS products and Kathy Johnston AAUS prints. Sign in to your profile at www.aaus.org and select 'AAUS products and KJ prints' from the blue banner on the left. Follow the links and you will be able to purchase AAUS polos, hats, visors, stickers and dry bags. Also available are Kathy Johnston's AAUS prints that she creates each year in honor of the host of the AAUS annual symposium.

Final Call for Nominations for 2010 AAUS Award

The AAUS Conrad Limbaugh Memorial Award competition closes August 01. Details can be found in recent issues of the E-Slate at aaus@disl.org.

AAUS OMs Prepare for Contaminated Diving

Dive Safety Officers (DSOs), researchers and scientific divers from Louisiana Universities Marine Consortium (LUMCON), Dauphin Island Sea Lab (DISL), and the University of South Florida (USF) met in June to participate in a contaminated water dive course at the Environmental Protection Agency's Sabine Island facility. The training by Scientific Diving International prepared divers and DSOs for dive operations in contaminated water as a result of the Deepwater Horizon oil spill in the Gulf of Mexico. The three-day course included dry suit training, full facemask use, an introduction to full helmet diving, and decontamination.

DISL diver in contaminated water dive gear. Photo credit: K. Weis.

USCG Calling for Innovative Solutions to Oil Spill

The US Coast Guard Research and Development Center is calling for assistance in finding solutions to the oil spill clean-up. Submissions should focus on the underlying technology that supports the solution and describe how the solution will benefit the identified gap area. Focus content on the operational and logistical requirements that are needed to obtain and deploy this particular solution including quantity, availability and scalability of the solution. White papers will be reviewed by an interdisciplinary group including representatives from NOAA, the USCG and the EPA. Promising ideas will be forwarded to Rear Admiral James Watson and considered for implementation by BP or federal agencies. Visit: http://www.govexec.com/dailyfed/0610/060710rb1.htm.

Call for Papers – Maritime Archaeology

Administrators are seeking papers for presentation at the 22nd Annual Symposium on Maritime Archaeology and History of Hawaii and the Pacific to be held on February 18-21, 2011 in Hilo, HI. The symposium's theme is "Reading Coastal Footprints: Ecology and Maritime Archaeology in the Pacific." Papers pertaining to the following topics are preferred: applications of ecological models to archaeology,

recent maritime archaeology fieldwork and general topics in maritime archaeology and maritime history. Abstracts should be no more that 300 words, include a title, name(s) of presenter and affiliation. Deadline for submission: November 01, 2010. Additionally, two scholarships are available for students to attend the conference. Visit: http://www.mahhi.org.

EQUIPMENT RECALLS

Recall of OMS Buoyancy Compensators

Ocean Management Systems (OMS) has issued a voluntary recall of 20,000 buoyancy compensators (BCs) due to faulty seal rings. Seal rings have been found to crack under pressure, compromising bladder integrity and placing divers at increased risk of drowning. BCs impacted by the recall were made in America, sold between May 2006 and August 2008. A list of model numbers and pictures of the BCs affected by the recall may be found at the OMS website. Owners of defective BCs should contact OMS for information regarding how to receive a free repair. Visit: http://www.cdnn.info/recall/oms_100428/0ms_100428.html.

UPCOMING EVENTS

Underwater Cultural Heritage in Mexico Course

UNESCO and the Mexican Instituto Nacional de Antropologia e Historia (INAH) are cosponsoring a course on the protection of underwater cultural heritage in Mexico. The course will run from September 27 to October 08, 2010 and will include a discussion of methods of underwater archaeology and site preservation. Lectures will be provided in Spanish language only. Participants must have a basic diving certification. A regional meeting on the same topic but aimed at site managers and national authorities will be held in December, 2010 in Cozumel, Mexico. Visit: http://www.unesco.org/en/underwater-cultural-heritage/.

Maritime Heritage Awareness Workshops

The Alaska Office of History and Archaeology and NOAA's Office of National Marine Sanctuaries will co-present workshops on maritime heritage in Anchorage (September 9-11) and Juneau (September 14-16). The first two days will address shipwreck significance, survey and mapping techniques, and conservation and preservation laws. The optional third day will include field method training at intertidal sites. The workshop is aimed at recreational divers, enforcement officers, archaeologists, historians and land managers. No diving required. Visit: http://dnr.alaska.gov/parks/oha/maritimewrkshop/maritinewrekshp.htm or contact Dave McMahan: 907-269-8723, dave.mcmahan@alaska.gov.

UW Spatial Ecology of Salish Sea Benthos Course

The University of Washington Friday Harbor Laboratories is offering a course in Spatial Ecology of Salish Sea Benthos September 29 to December 10, 2010. The course will investigate the application of marine ecological and geophysical techniques, seabed sampling and underwater video and still photographic sampling in marine benthic habitat characterization. Contact Dr. Kenneth Sebens (sebens@u.washington.edu) or visit: http://depts.washington.edu/fhl/student-Autumn2010.html.

Red Sea Research

Red Sea Research is offering a series of modular scientific diving courses aimed at marine science students and environmentally active recreational divers. Modules will focus on data gathering techniques and research methodology. During the course students will participate in ongoing research efforts in Dahab and South Sinai, Egypt while honing their scuba diving technique. Completion of course requirements will result in receipt of an internationally recognized scientific diver qualification. Visit: http://www.redsearesearch.org/courses.

JOB OPPORTUNITIES

National Dive Training and Safety Officer – NPS

The Washington Office has initiated a search for a national dive training and safety officer. Although the person selected will report to the deputy chief of emergency services, he/she will be duty-stationed with the National Parks Service (NPS) Submerged Resources Center in Lakewood, CO. The selectee is the Dive Safety Officer for the National Park Service scuba diving program. Under the direction of the Dive Program Manager, in conjunction with the NPS National Dive Control Board (NDCB), the incumbent plans and implements multiple aspects of the dive safety program. The primary purpose of this position is to assist with the safety and training needs of scuba divers throughout the National Park System. The National Park Service has the oldest non-military diving program in the federal government and NPS divers work in a wide range of conditions and environments to accomplish the NPS preservation mission. The closing date is August 09. View the full posting at:

http://jobview.usajobs.gov/GetJob.aspx?JobID=89304215&JobTitle=Program+Specialist+.

Maintenance Diver, Part-Time Georgia Aquarium

The Georgia Aquarium is seeking a part-time maintenance diver to work in their Atlanta, GA facility. Major duties are split into two categories: commercial and scientific diving work. Commercial duties include daily aquarium husbandry, inspection and preventative maintenance of aquarium exhibits and equipment ordering and inventory. Scientific duties include participation in and assistance with advanced

dive personnel training, monitoring of aquarium species and sample collection, and implementation of dive safety measures. The diver may also serve as a liaison between the Georgia Aquarium and guests, media and the general public. Candidates must hold an Advanced Open Water (or higher) diving certification and have a minimum of two years experience in aquarium or scientific diving. Additional requirements relate to first aid certifications, equipment service/technician certifications and proficiency in Microsoft Office Products. For more information visit: http://partners.georgiaaquarium.org/all/Lists/Join%20Our%20Team/DispForm.aspx?ID=71.

Raytheon Polar Services - Antarctic Diver

Raytheon is seeking an individual to join their Antarctic dive teams at McMurdo and Palmer research stations. The contract begins October 2010 and would last either six or 12 months. The position entails assisting with Raytheon Polar Services (RPSC) diving projects and may include underwater construction and limited salvage work. Scientific studies may also require the diver to collect samples, document dive conditions and act as a tender for research divers. Candidates must possess a high school diploma or GED, a nationally recognized scuba certification, CPR/first aid certification, a minimum four years of commercial and/or scientific diving experience and American or New Zealand citizenship. Visit: http://jobview.monster.com/Diver-10-11-Job-Centennial-CO-US-88776141.aspx or register with the Raytheon career website: http://www.rayjobs.com.

Archaeological Studies Advisor

Brunel Energy Australia is seeking an Archaeological Studies Advisor to manage its Oversee European Heritage field archaeological marine and terrestrial investigation based out of Perth, Australia. The position will include managing dive tenders, overseeing technical and contractual aspects of work scopes, coordinating activity of third party field surveys, ensuring integrity of European Heritage investigations, submitting progress reports and providing cross-functional support to the project's environmental division. Applicants must be able to command multiple projects in a high pressure environment, foster cooperation among internal and external stakeholders, and ensure an incident- and injury-free culture. Applications due by August 06, 2010. Visit: http://www.brunelenergy.net/job-details/?iVacancyID=28147.

Director of UW Archaeology Survey/Excavation

The Ecomuseum of the Cape of Cavalleria, Menorca, Spain is seeking a director for their underwater archaeology program in the Balearic Islands. The director is responsible for overseeing survey and excavation activities and submitting an annual report of Ecomuseum's archaeological activities. Candidates must be fluent in English and Spanish, practiced in teaching and archaeological techniques and have two years experience as a director of underwater archaeology surveys and excavations. Interested individuals should send a CV and cover letter to sanisera@arrakis.es. Closing date: October 01, 2010. Visit: http://www.bajr.org/Employment/UKEmploymentDetails.asp?ID=8326.

Smithsonian CUSP Program Internships

The Smithsonian's Cities Under the Sea Program (CUSP) is seeking interns to assist with geoarchaeological studies of submerged Greek and Roman sites in the Mediterranean. Applicants can be upper level undergraduate students, graduate students or post-doctoral level candidates, preferably with dual training in science and archaeology. Internships will start in the Fall, Winter-Spring or Summer periods, lasting from 3-12 months. The next deadline for applications is October 01, 2010. Visit: http://www.nmnh.si.edu/rtp/other_opps/internship_projects.html.

Maritime Archaeology Assistants

Academic and fieldwork assistant position open for current or potential East Carolina University students. Candidates will be responsible for compiling maps and literature, planning lessons, conducting public education programs and preparing fieldwork experiments for ongoing projects in Africa and South Carolina. Interested students must qualify for Federal Work Study positions. Visit: https://ecu.peopleadmin.com/applicants/jsp/shared/frameset/Frameset.jsp?time=1279291470872.

NEW PUBLICATIONS

Azzopardi E, Sayer MDJ. A review of the technical specifications of 47 models of diving decompression computer. Underwater Technol. 2010; 29: 63-72.

Many modern diving decompression computers have the ability to record and display information of, and related to, the dive profile. In the UK, there are currently approximately 50 models of diving decompression computer being sold with a capability for recording and downloading dive information. Based on the technical information either supplied with each computer or made available on the internet this present study presents examples of 47 of these downloadable computers to review some of the parameters that are commonly measured, recorded and/or displayed such as: depth recording and/or measurement frequency, and/or measurement resolution, method of recording/display (e.g., maxima, minima, average, thresholds), methods of downloading information, and what data are stored and storage limitations. Although there is a wide range in the technical capabilities of the computers reviewed they all record and store similar basic dive profile information. However, the present review highlights the variation in many of the recording/measuring formats and download methodologies.

Sieber A, Pyle R. A review of the use of closed-circuit rebreathers for scientific diving. Underwater Technol. 2010; 29: 73-8.

Rebreather diving systems have many advantages to standard open-circuit systems (or scuba). Rebreathers offer higher gas efficiency together with silent and bubble-free diving. Moreover, instead of cold and dry gas found in open-circuit systems the diver takes advantage of a warm and humid breathing gas. Stealth (through silent, bubble-free diving) can be beneficial for scientists exploring a range of natural ecological research areas. The high gas efficiency of rebreathers, combined with their lower operational costs, can provide longer autonomy and shortened decompression obligations that may assist the scientist with deeper diving explorations. The present paper gives an overview of today's rebreather technology and focuses especially on the needs of scientific divers. Moreover, it includes a short report about achievements in the field of deep coral explorations, where advanced electronically-controlled closed-loop rebreather systems were the key for efficient and successful missions.

Caramanna G, Espa S, Bouché V. Study of the environmental effects of submarine CO_2-rich emissions by means of scientific diving techniques (Panarea Island – Italy). Underwater Technol. 2010; 29: 79-85.

To study the effects of anomalous concentrations of CO_2 in the sea a volcanic area was identified in the southern Tyrrhenian Sea, where submarine CO_2-rich discharges occur in shallow water producing under-water gas plumes. Specific fluid sampling and water-chemistry measuring techniques were developed to be used by scientific divers in order to identify the chemical composition of the gas emissions and their effect on the marine surroundings. Laboratory experiments were conducted to identify the main features of the physical interaction of a gas plume with the surrounding liquid environment.

Palozzi R, Vacchi M, Bono R, Catalano F, Rovere A. Italian underwater exploration in Antarctica: scientific diving and ROV operations. Underwater Technol. 2010; 29: 87-93.

Italy established its first base in Antarctica in 1986 at Terra Nova Bay (Ross Sea) and since 1987 underwater activities have been undertaken, both in ice-free waters and under the ice, mainly in support of scientific research. Scuba diving and robotic underwater explorations were undertaken following the regulations and the guidelines settled by Programma Nazionale Ricerche in Antartide (PNRA). This present account gives a brief history of the most important underwater activities led by the Italian Programme highlighting studies of macro benthic assemblages as well as the work needed to collect information on biology, geology, glaciology, geodesy, geophysics, oceanography. A brief overview of the PNRA diving guidelines is given.

Caramanna G, Giordani M. Geomorphologic survey and hydrological measures of a karst spring by means of cave diving techniques (Amaseno, Italy). Underwater Technol. 2010; 29: 95-9.

Scientific cave diving techniques were employed to explore and study the cave Capo d'Acqua d'Amaseno, which is located in the southern Latium Region (Central Italy) about 80 km southeast of Rome. The cave is fed by a karst system and its dimensions permit exploration through use of diving. Inside the cave a small underground lake was discovered and its level was monitored by deploying a water-level data-logger and comparing it with the rainfall measured in the area. First results highlight the fast response of the lake level to the rainfall; this is in agreement with the characteristics of a system fed by large karst conduits.

Gempp E, Blatteau JE. Preconditioning methods and mechanisms for preventing the risk of decompression sickness in scuba divers: a review. Res Sports Med. 2010; 18(3): 205-18.

Scuba divers are at risk of decompression sickness due to the excessive formation of gas bubbles in blood and tissues following ascent, with potentially subsequent neurological injuries. Since nonprovocative dive profiles are no guarantor of protection against this disease, novel means are required for its prevention including predive procedures that could induce more resistance to decompression stress. In this article, we review the recent studies describing the promising preconditioning methods that might operate on the attenuation of bubble formation believed to reduce the occurrence of decompression sickness. The main practical applications are simple and feasible predive measures such as endurance exercise in a warm environment, oral hydration, and normobaric oxygen breathing. Rheological changes affecting tissue perfusion, endothelial adaptation with nitric oxide pathway, up-regulation of cytoprotective proteins, and reduction of preexisting gas nuclei from which bubbles grow could be involved in this protective effect.

van Hulst RA, van der Kamp W. Decompression sickness in a vegetarian diver: are vegetarian divers at risk? A case report. Undersea Hyperb Med. 2010; 37(3): 181-4.

We present a case of a diver who suffered decompression sickness (DCS), but who also was a strict vegetarian for more than 10 years. He presented with symptoms of tingling of both feet and left hand, weakness in both legs and sensory deficits for vibration and propriocepsis after two deep dives with decompression. The initial clinical features of this case were most consistent with DCS, possibly because of a vulnerable spinal cord due to

cobalamin deficiency neuropathy. This case illustrates the similarities between DCS and a clinically defined vitamin B12 deficiency. The pathophysiology of vitamin B12 deficiency and common pathology and symptoms of DCS are reviewed.

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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