



E-SLATE

American Academy of Underwater Sciences (AAUS)

EDITORIAL NOTE – May 2012

Welcome to the May E-Slate. The 2012 AAUS Board of Director's election begins this month. Be sure to read about each candidate below before voting. Also, 2011 statistics are due no later than June 30, 2012. This E-Slate contains the last call for the Rebreather Forum, a call for abstracts and registration information for the 2012 AAUS Diving for Science symposium and information regarding the new reactivation policy. We encourage you to submit new publications to share with the membership. It is a great opportunity to highlight research from your home institution. In addition, we welcome news, announcements, job postings, and images of underwater work at aaus@disl.org. Please also note that our new website is live! As you submit information for the E-Slate, they will now also be posted on the new site. Current and past issues of the E-Slate are available at www.aaus.org.

NEWS/ANNOUNCEMENTS

AAUS Website

Our new website (www.aaus.org) will go live May 01! Please check out the new site and begin to take advantage of the many features, including a forum where we have already posted a topic from a DSO for your discussion. Your username and password should be the same as on the old site. Please check your profile information to be sure that all fields transferred properly and update with any changes. As with any new site, we expect a few glitches. You can help us get these resolved quickly if you send an email (aaus@disl.org) detailing the issue if you encounter any problems. Thank you for your patience as we work through this transition to the new format.



Organizational Member Reactivation Policy

All organizational members and their representatives should make sure they understand the policy for regaining membership in good standing following non-compliance (due to non-payment of dues, non-submission of dive statistics, or other reasons). In the past, once an OM fell out of compliance the only official avenue for reactivation was complete re-application. This issue was discussed at the BOD meeting in March, and a motion to formalize the

following process was accepted. We hope that an awareness of this policy may encourage OMs to remain in good standing by paying dues and submitting stats on time. At the same time, we hope these steps will not be so onerous that they prevent organizations from reactivating membership where appropriate. Direct questions to Membership Chair Pema Kitaeff, at pema@uw.edu.

1. Verification that the OM has corrected the non-compliance issue(s).
2. OM submits their profile and has it vetted by the Membership committee.
3. OM fills out application, submits the self-audit checklist and DCB member names and pays any past and present fees due. Re-application fee would be \$250 as of 2012, any outstanding delinquent fees, and one full year's dues for the re-application year. All of this needs to be done within one year. If the application process goes beyond one year they must re-apply as a new OM and pay the current application fee and current annual dues for the application year plus any past delinquent fees.
4. OM is placed in the queue of incoming applicants.
5. Membership lets Standards know that they need to review the manual. Only one reviewer will be needed.
6. Once the manual has been reviewed and accepted by the reviewer, a call for an OM approval vote is done at the next Board meeting.

Rebreather Forum 3.0



AAUS has partnered with DAN and PADI to co-sponsor and convene RF3, May 18-20, 2012 in Orlando, FL (<http://www.rf30.org>). RF3.0 will provide AAUS Diving Officers and scientific divers with an opportunity to thoroughly consider the possibilities of incorporating rebreather technology into the underwater research tool box. AAUS, DAN and PADI are bringing together experts to present and discuss issues relevant to rebreathers, rebreather safety and to help plot a forward path. Don't miss out on the opportunity to be involved in this forum!

AAUS Symposium 2012

The 2012 AAUS Symposium will be held in Monterey, California September 24-29, hosted by the Monterey Bay Aquarium, University of California Santa Cruz and Moss

Landing Marine Laboratories. The Hyatt Regency will serve as the symposium hotel. Events include pre-conference workshops, the Diving Safety Officer meeting, AAUS business meeting and two days of science talks. Planned workshops:

- PSI – VCI certification and refresher courses
- Desert Star Navigation
- Organismal Collection Techniques
- DAN FA Pro Instructor Certification
- Pacific Coast Species ID/Reef Check CA Methodology
- Oceanic Equipment Repair
- Photo Techniques for Scientific Divers
- New DSO Orientation
- Organizational Member Poster Night

There will be boat and shore diving opportunities as well as our annual Bubble Breaker welcome sponsored by Ocean Enterprises and a second social hosted by Backscatter. September is a beautiful time of year in Monterey but also a very busy time for other conferences. **Early travel booking is recommended.** You can visit our website to register directly at <http://www.cvent.com/d/kcqlds>. Contact the AAUS office at aaus@disl.org for more information.

Call for Abstracts – AAUS 2012

Abstracts appropriate for the 2012 AAUS symposium can be submitted electronically to www.aaus.org until June 01. Please put "AAUS symposium abstract -" followed by your name in the message line to facilitate tracking. The minimum manuscript obligation is an extended abstracts (800-1200 words). (Note: longer manuscripts can be submitted if authors prefer - the 2011 proceedings were close to evenly split between extended abstracts and full papers). Notification on the disposition of submitted abstracts will be returned to the first author electronically by July 01. The deadline for final extended abstract or manuscript is August 01 so the published proceedings will be available at the fall meeting. Inclusion in the proceedings is a requirement of presentation. Contact Diana Steller (dsteller@mlml.calstate.edu) for more information.

2011 AAUS Statistics

2011 statistics are now due. Please begin compiling and submitting these numbers! Statistics are submitted at <http://stats.diveaaus.com>. Please review 'AAUS Statistics Collection Criteria and Definitions' (Statistics Collection page) or contact Cheryl Thacker (cthacker@ehs.ufl.edu) or Mike Dardeau (mdardeau@disl.org) with questions.

AAUS 2012 ELECTION - CANDIDATE Q&A

The 2012 AAUS election opens May 01 and closes June 30. This year the academy will elect a Director-at-Large. The term will start on the January 01, 2013. The Director-at-Large will serve a three year term. The election is open to Full Voting Members (individual and OM Reps) in good standing (dues paid, etc.). Ballots are accessed via the

AAUS website, www.aaus.org, by logging into your individual account and selecting 'Voting and Polling.' To write in a candidate for any office send an email with the name of the candidate and position for which you are voting to cmcdonald@ucsd.edu. Candidates were required to submit a biographical sketch and answer the following three questions.

1) *In your vision, in what direction should the AAUS be heading in the next decade?*

2) *Describe your scientific diving experience and indicate its relevance to AAUS governance. (Maximum 300 words)*

3) *What relationships/networks/professional contacts/non-profit board experiences do you have that will benefit AAUS by electing you to the AAUS BOD? (Maximum 300 words)*

The Academy thanks the candidates for their willingness to serve the scientific diving community. Candidate biographies and answers to the election questions follow.

Mauritius Bell

University of Hawaii at Hilo

Scientific Lead Diver/Unit Diving Coordinator

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I have been involved in aquatic safety since 1994 and actively diving since my initial YMCA Open Water certification in 1997. I became a PDIC Open Water Instructor in 2001 and crossed over to NAUI in 2002.

I taught instructional technology to teachers within the Atlanta Public School System and later worked for the YMCA of Metropolitan Atlanta as an Aquatic Director at two branches. I also served on the Association's Aquatic and Risk and Safety Boards. It was here that my interest in aquatic and diving risk management developed.

I began as a volunteer diver at the Georgia Aquarium in 2005. A few months later I was hired in the Dive Operations Department as a Maintenance Diver and Volunteer Diving Program Coordinator; I was ultimately promoted to Assistant Diving Safety Officer. I learned to manage a large and diverse dive program and to conduct and supervise scientific and commercial diving operations, ranging from animal collection and benthic ecology, underwater structural repair and heavy lifting operations. I also served on the aquarium's DCB. During my tenure at the aquarium, I acquired certification as a Paramedic, Diver Medical Technician, technical and cave instructor through NAUI, and an instructor trainer for DAN.

In December 2009, I assumed my present position as the Unit Diving Coordinator for the University of Hawaii at Hilo. I accepted the position in Hilo to obtain experience in a university program with a research focus. During my

tenure, I have created and implemented an equipment maintenance program, a science diver qualification program, as well as DPV and other training programs to meet the needs of the school's researchers. I also completed a saturation mission in the Aquarius Habitat, and became an instructor for Performance Freediving, PSI-PCI, and Unified Team Diving. I also began mixed-gas rebreather diving.

I have amassed a great variety of diving experiences and expertise over the past 14.5 years, ranging from risk management and training curricula formulation to dive operational performance, supervision and equipment maintenance. Such experience will prove to be beneficial should I be elected to the AAUS Board of Directors.

In your vision, in what direction should the AAUS be heading in the next decade?

The number of organizational members has grown significantly in recent years. While such growth has served to increase AAUS revenue through dues and the overall reach of the organization through inclusion, it does present a potential challenge to quality control. Many dive officers, including myself, have participated in dive ops where reciprocity diver performance has caused inquiry into the quality of diver training. Such events call to question the value of reciprocity if the OM is not meeting the AAUS training standard. As such, I strongly support the proposed implementation of the OM program audit and the DSO certification components as parts of a comprehensive OM accreditation model.

I would also support the exchange of ideas across the AAUS via an electronic group forum. This has served similar organizations well as dive officers can survey the organization's membership to ascertain protocols, practices, and procedures utilized as they seek to augment their own. Such a forum could also serve to provide an avenue for dive officers seeking additional instruction/certification as AAUS possesses within its ranks the capacity to conduct all dive and dive-related training. This provides dive officers the option to obtain quality training from like-minded dive program officers versus the recreationally-oriented dive shop/instructor. This forum could also contain an OM review/comment section when applicable to solicit opinions on standards revisions proposed by the BOD.

Lastly, I would like to see the AAUS continue to explore additional OM benefits through the leverage of the size of the organization to secure industry discounts especially for those OMs that do not have the program size to garner the attention of equipment manufacturers or applicable training agencies.

Describe your scientific diving experience and indicate its relevance to AAUS governance.

Over the past six years, I have been actively engaged in scientific diving operations spanning aquarium collection, geology, ecology, and archeology; the operations also involved no-stop, decompression, and saturation exposures, conducted in lakes, caves, and oceans, utilizing surface supply, open and closed-circuit, and breath-hold diving modes. I have performed approximately 200 scientific dives during this time. This experience serves the AAUS through my understanding and application of standards especially with regard to diver training.

What relationships/networks/professional contacts/non-profit board experiences do you have that will benefit AAUS by electing you to the AAUS BOD?

As a former aquarium dive officer and present university dive officer, I understand the needs of and maintain close relationships with two of the most integral and diverse groups of AAUS OMs. I have working relationships the NOAA, the NPS, and the EPA dive programs as well as various training agencies and manufacturers within the diving industry to include NAUI, DAN, PSI-PCI, Unified Team Diving, Performance Freediving, Aqua Lung, Oceanic/Hollis, OTS, and SCUBAPRO.

I previously served on the board of directors for Aviation Career Enrichment, a non-profit aviation program in Atlanta, GA.

Alex Brylske

Florida Keys Community College
Professor/Director of dive program
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Dr. Alex Brylske has had long and varied career as a marine educator. For more than half his life he has taught marine science and underwater technology to both formal and non-formal audiences. His career has taken him to destinations all over the world including the Caribbean, Hawaii, Red Sea, Southeast Asia, Fiji, Papua New Guinea and Micronesia, where he has worked for companies in the private sector, governmental agencies and non-governmental organizations.

Currently, Dr. Brylske is a Professor of Marine Science and Technology at Florida Keys Community College in Key West, and directs the College's AAUS-sanctioned scientific diving research program. Alex is also an adjunct professor at Edison State College, where he teaches online courses in oceanography; and he has held an appointment at Florida Gulf Coast University as a member of their External Associate Graduate Faculty.

In 1998-99 Alex served on the Florida Governor's Ocean Committee, where he helped make recommendations to the Governor's Cabinet on the State's ocean resource management policy. He is presently Florida's Regional Coordinator for Reef Check, an international coral reef monitoring organization; and is a member of the Sanctuary Advisory Council (SAC) for the Florida Keys National Marine Sanctuary.

In addition to coral reef issues, Dr. Brylske's interests include environmental education, recreation ecology and marine ecotourism. For his contribution to the field of sustainable marine tourism, Alex was a 2001 recipient of NOAA's prestigious Walter B. Jones Memorial Excellence Award for Ocean and Coastal Resource Management. He has published several papers and has made numerous presentations on sustainable marine tourism at conferences around the world. In 2009 Alex was also honored with a Distinguished Alumni Award from his alma mater, Nova Southeastern University.

Alex experience in the realm of non-governmental organizations includes tenure on the Board of Directors for both the Society for Ethical Ecotourism and the Coral Reef Alliance (CORAL). He has been actively involved with the Florida Keys National Marine Sanctuary since its inception, and has worked closely with the Southeast Florida Coral Reef Initiative. He has also served as Training Manager for CORAL, and Marine Conservation and Education Specialist for the PADI Project AWARE Foundation.

Aside from his interest in marine science and conservation, Dr. Brylske is one of the most influential voices in the recreational scuba diving community. Throughout the 1980s, as Educational Program Development Manager for the Professional Association of Diving Instructors (PADI), he designed and wrote many of the programs and materials used today around the world to train divers of all levels. In fact, if you're a PADI-certified diver you almost certainly where trained using curriculum and materials that he designed.

Alex has been recognized as the most widely published author in the field of recreational scuba diving. Since 1992 he has served as Senior Editor of *Dive Training* magazine—America's oldest scuba diving publication (www.dtmag.com). There he hosts a monthly column, "No Dumb Questions," and has penned more than 250 feature articles on subjects ranging from environmental issues, marine science, hyperbaric physiology and diving safety. He has also written or co-authored nearly a dozen books and manuals, including the acclaimed reference on decompression theory and practice, *Beating the Bends* as well as the award winning, *Encyclopedia of Recreational Diving*. His latest book, *The Complete Diver*, is scheduled for release in the fall of 2012.

Alex also serves as a training consultant to the Divers Alert Network (DAN). His diving awards include the 2011 Beneath the Sea Diver of the Year for education, and the 2012 DAN Rolex Diver of the Year—one of the most prestigious honors in diving.

Dr. Brylske holds a Masters of Arts degree in instructional systems design from Vermont's Norwich University. His area of specialty was developing valid instructional systems and materials for paraprofessional educators. In addition, he holds a dual Masters of Science degree in marine biology and coastal zone management from the Oceanographic Center at Nova Southeastern University. His area of specialty was tropical marine ecology and resource management. Alex also holds both an Ed.S. and Ph.D. in science education with a technical specialty in oceanography from the Florida Institute of Technology. His dissertation explored how education can be used to promote responsible tourism and marine resource management.

Alex and his wife Deborah have been together for over 30 years. Like Alex, Deborah is an avid diver and former Master Scuba Instructor. They have no children, as they find it challenging enough raising their two cats. They live on Summerland Key, FL. Almost everything they do for leisure involves the ocean, although they do like escaping to colder waters when they can for a change of scenery. Alex makes very little distinction between his personal and professional life having followed the sage advice that if you do what you love you'll never have to work a day in your life.

In your vision, in what direction should the AAUS be heading in the next decade?

In believe that the Organization should continue its core mission to support underwater research by expanding training resources and materials. I'd like to see special effort given to training novice/undergraduate researchers by placing more emphasis on the "science" part of scientific diving. Furthermore, I feel the Organization should explore whether it is feasible—and if so, how—it can foster and support "citizen science" initiatives that would expand awareness of scientific diving into the broader diving community. This is not altruism, but self-interest. Advocacy for continued funding of marine research is possible only if the public appreciates and supports such efforts; and there is no better way to garner support for underwater research than by creating more underwater researchers, both professionals and laymen.

Describe your scientific diving experience and indicate its relevance to AAUS governance.

My initial exposure to scientific diving was in taking several field-based courses in graduate school that had underwater research components. Since 2009, one of my primary duties at Florida Keys Community College is teaching ISC 2132: Basic Research Diving, and

coordinating the College's research diving program (along with DSO Tracy Brenner). This course is a requirement in our Marine Environmental Technology degree program; and in that capacity I train between 35 and 50 novice research divers per year. My classes work extensively in real-world conditions often in conjunction with other scientific divers from the Florida Keys National Marine Sanctuary, Florida Department of Environmental Protection, and the Coral Restoration Foundation. It's my hope to use my platform here at FKCC as a "laboratory school" to create and improve the resources and guidelines of the Organization.

What relationships/networks/professional contacts/non-profit board experiences do you have that will benefit AAUS by electing you to the AAUS BOD?

Having worked full-time in the recreational diving industry since 1976, my professional network is quite extensive. I have a very good working relationship with most recreational diver training organizations, DEMA, DAN and other regional groups. My tenure as Senior Editor of Dive Training magazine has given me excellent access to the publishing and manufacturing sectors of diving. As a former consultant and Board member of both Project AWARE Foundation and the Coral Reef Alliance, I also have experience in the NGO world. As former member of the Florida Governor's Ocean Committee and current member of the Florida Keys National Marine Sanctuary Advisory Council, my experience in dealing with government entities would also be an asset.

Stephen Jewett

University of Alaska
Research Professor/Diving Safety Officer
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Education:

Ph.D. University of Alaska, 1997
M.S. University of Alaska, 1977
B.A. John Brown University, 1971

Experience:

Univ. of Alaska Fairbanks (UAF), Research Professor,
1998-present
UAF, Research Associate, 1974-98
UA, Scientific Diving Safety Officer, 1988-present
Editorial Board, Journal of Marine Science: R & D, 2010-12
North Pacific Biological Research (NPBR), President, 1982-present
Alaska Department of Fish & Game, Fishery Biologist,
1973-74
UAF, Research Assistant, 1972-73
US Navy, 1970-71

Member:

American Academy of Underwater Sciences; American Fisheries Society; National Shellfish Association; Society of Phi Kappa Phi; Society of Sigma Xi; Western Society of Naturalists; Golden Key International Honor Society; The Explorers Club, FN'11

Certifications:

Fishery Scientist - American Fisheries Society
Scuba Educators International – Instructor #321
Divers Alert Network – Emergency O₂ Instructor #7471
Professional Scuba Inspector – VCI #3214

Honors:

2011 Fellow National, The Explorer Club
2011 Career Achievement Award, John Brown University Alumni Association
2006 Fulbright Scholar: Senior Specialist in Environmental Science at Catholic University of the North, Coquimbo, Chile
2004 Emil Usibelli Distinguished Research Award (\$10,000)
2004 The Wildlife Society Wildlife Publications Award for Outstanding Monograph (co-recipient)

In your vision, in what direction should the AAUS be heading in the next decade?

Last year at the AAUS symposium in Maine, the concept of conducting site reviews of organizational member diving programs was introduced. Many DSOs I spoke with were in favor of such an inspection, citing the impending visits would necessitate tightening their programs regarding AAUS compliance. I heard no negative comments about this concept, aside from the financial concerns. I would like the inspection concept to move forward in the next decade to where two or three or more reviews are conducted annually.

Describe your scientific diving experience and indicate its relevance to AAUS governance.

Since 1972 I have been conducting research on benthic impact assessments, benthic ecology, trophic interactions, Arctic ecosystems, shipwreck archaeology and pollution/contamination monitoring, and much of this research utilized cold-water science diving techniques. Most of my research has focused on impact assessment issues in marine waters, such as effects from El Niño, Kasatochi Volcano eruption, commercial trawling, log storage, mercury and radionuclide contamination, Alyeska Pipeline Terminal operations, Exxon Valdez oil spill and offshore mining. My recent work using diving has led to the discoveries of 19 new species, with several more descriptions underway. Half of my published work was accomplished using science diving techniques, i.e., 45 of 90 peer-reviewed publications. My past 45 years of diving have been mainly carried out in dry suits. I was

instrumental in the formation of the UA Scientific Diving Program in 1988 and for UA becoming an organizational member of AAUS in 1990. My dedication to advancing the UA science diving program is demonstrated through my service as UA's "full-time" DSO over the past 23 years with ≤0.25% funding. My support of AAUS includes individual member since 1985, UA Diving Safety Officer since 1990, coauthored seven articles in AAUS symposia proceedings, holding committee appointments (2004-05), as well as the Co-Chairman of the 2001 AAUS Diving for Science Symposium, a meeting that focused on cold-water diving. Honors include: the UAF Emil Usibelli Distinguished Research Award (\$10,000; 2004); the Wildlife Society Wildlife Publications Award for Outstanding Monograph (co-recipient; 2004); a Fulbright Scholar in Chile (2006), the John Brown University Alumni Career Achievement Award (2011), and an Explorer Club Fellow National (2011).

What relationships/networks/professional contacts/non-profit board experiences do you have that will benefit AAUS by electing you to the AAUS BOD?

My only board experiences include the UA Diving Control Board for 23 years and the Editorial Board, Journal of Marine Science: Research & Development (2010-present). However, other non-board involvements over the past 30 years, i.e., Co-Chairman of the 2001 AAUS Diving for Science Symposium, the International Scientific Steering Committee on the 50th Anniversary of the Island of Surtsey (ICELAND) (2012-13), and active memberships in several professional organizations (AAUS, American Fisheries Society, National Shellfish Association, Society of Phi Kappa Phi, Society of Sigma Xi, Western Society of Naturalists, Golden Key International Honor Society, and The Explorers Club) have given me tremendous insight into procedural operations necessary to serve on the AAUS BOD.

Mark Keusenkothen

East Carolina University
Director of Diving and Water Safety
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I grew up in southern Missouri and joined the Navy in 1987 following high school graduation. After serving aboard a guided missile destroyer for three years, I left the navy and entered Southwest Missouri State University, where I earned a bachelor's degree in biology. After graduation I spent the next two years as a Peace Corps volunteer in the Kingdom of Tonga teaching science and learning to scuba dive. Following the Peace Corps I went to East Carolina University where I earned a master's degree in biology. I worked during this time as a graduate assistant in the diving safety office. After graduation in 2002 I worked as a divemaster on a charter boat in North Carolina for a few

months before being hired as the ECU diving safety officer. I became the ECU Director of Diving and Water Safety in 2010 - a position which entails overseeing both scientific diving and boating.

In your vision, in what direction should the AAUS be heading in the next decade?

I believe the AAUS should continue moving forward to meet the goals of the current Strategic Plan. In particular, I would like to see those parts of the Plan move forward that go directly to helping the DSO on the ground... that is, issues of standards and training. For instance, I'd like to see the self-audit process formalized so that each OM can insure that they are meeting standards in all aspects of their respective programs. Along those same lines, I would like the development of comprehensive training materials to continue – particularly in the area of confined and open water training. DSOs contain a vast amount of knowledge pertaining to underwater techniques (i.e., working with lift bags, diving drysuits and full face masks, using line reels, performing rescues, etc.) as well as a vast amount of knowledge in how to teach these particular techniques. However, we aren't always aware of how and why others do what they do, and this information might be useful to individual DSOs in their own particular programs. This was brought home to me during the Georgia Aquarium Symposium, where I had the opportunity to watch DSOs from around the world conduct rescues of "unconscious" divers. There were many variations in how folks performed these rescues... in getting people to the surface, in giving rescue breaths, in stripping gear. Generally people could give good reasons for making the technique choices they made. Similarly, I had the pleasure of working with Kevin Flanagan here at ECU... and he did certain techniques differently than I did. And again, I found that he had good reasons for making the choices he made. So, ultimately what I would like to see is a reference full of ideas for what techniques to teach, how to teach those techniques, and even *why* – why would you choose to do a particular thing a particular way. In addition to these points, I think a standardized scientific diver examination, which can be supplemented, should be developed as suggested in the Plan. To conclude, I think a degree of standardization among all programs in how and what we teach, and in how we run our respective programs, will strengthen the academy and will help us produce better, safer scientific divers.

Describe your scientific diving experience and indicate its relevance to AAUS governance.

I became a scientific diver in 2000 while earning my master's degree in biology at East Carolina University. I then worked as a graduate assistant in the ECU Diving Safety Office until 2002 and obtained my divemaster and instructor qualifications. I was hired as the ECU DSO in 2003 and became the university's Director of Diving and

Water Safety in 2010. During my association with ECU scientific diving, I've participated in a wide variety of research underwater in such areas as archaeology, biology, and geology. I've overseen diving operations in a number of maritime archaeology field schools in locations such as the North Carolina, South Carolina, the Great Lakes, Bermuda, and Belize. I've participated in many interagency projects involving NOAA, the National Park Service, and BOEM. These experiences have given me a fairly broad base for understanding how scientific diving standards and procedures work in the field, and I believe this understanding will translate into being an effective AAUS board member.

What relationships/networks/professional contacts/non-profit board experiences do you have that will benefit AAUS by electing you to the AAUS BOD?

Through attending AAUS symposia, participating in projects with other universities, federal agencies, and other institutions that conduct scientific diving, and working with a past AAUS president, my scientific diving career has brought me into contact with many members of the larger scientific diving community. I believe the relationships I have formed through these interactions will be helpful should I be elected to serve on the AAUS Board of Directors.

Christopher Rigaud

The University of Maine

Diving Safety Officer

207-563-3146 ext232; crigaud@maine.edu

Christopher Rigaud has served as Diving Safety Officer at The University of Maine since 2003. Based at the Darling Marine Center (DMC), he supervises scientific diving operations, trains scientific divers, and serves as the primary instructor of the growing academic diving program he instituted in 2008. In addition to his diving responsibilities, Chris serves as the DMC Hazardous Waste Manager, Facility Emergency Coordinator, and safety liaison, overseeing and managing a variety of occupational and environmental safety programs.

Chris earned a M.S. from Texas A&M University Corpus Christi (2002), and a B.S. from Southampton College (1997) on his native Long Island, NY. He has been teaching scuba for over 15 years and holds diving instructor certificates with PADI and SDI, as well as emergency care instructor certificates with the Diver's Alert Network and American Red Cross. Chris served as an appointed Director on the AAUS Board from 2006-2011, and continues to work on various projects and committees. When not working in his chosen career, Chris serves his local community as volunteer Firefighter, Emergency Medical Technician (EMT), and Public Safety Rescue Swimmer.

In your vision, in what direction should the AAUS be heading in the next decade?

In the next 10 years, AAUS should maintain focus on the goals set forth in the 2008-2011 strategic plan. We should press forward on projects already in progress, setting measurable benchmarks with reasonable, but efficient, timelines. We should incorporate new goals and initiatives that reflect the needs of our community, but work within the framework of a defined plan to ensure the continued growth and success of the Academy amid changes in administration, membership, and an ever fluctuating financial and political climate. As Director, my priorities for the AAUS will be:

Standards for DSOs/DSO Trainers- finalizing, adopting, and implementing these requirements will refine our proven community standard and provide an alternative to recreational instructor certification.

Accreditation/Compliance Program- we should embrace our role as community gatekeeper and honor the AAUS 'seal of approval' by developing a more formal application, approval, mentoring, and review process. This is especially important as we grow to incorporate 'non-traditional' and international programs.

Underwriting/ Insurance- independent review and underwriting of our community standards will firmly establish our role as the leading organization in scientific diving, and provide options for insurance/liability protections.

Training Materials- further develop and produce comprehensive operational training materials and tools rivaling those of other agencies.

Administration- revision of our bylaws and strategic plan, expansion to a full-time office manager, and exploration of an Executive Director position to improve operational efficiency.

The role of AAUS as hands-off standard setting organization has served us well in the past, and I appreciate concerns about deviating from this traditional function; but our community has grown, and our members expect more from us than ever before. As we look to the future, providing our membership with an increasing array of opportunities, tools, and services is essential to ensuring the continued relevance and success of our Academy.

Describe your scientific diving experience and indicate its relevance to AAUS governance.

I began my scientific diving career over 15 years ago with undergraduate internships at the Darling Marine Center and Moss Landing Marine Labs. Those experiences engrained in me the value of scientific diver training and standards, and I carried those principles to my first career position as a research assistant and diving supervisor at a small marine lab in New York. In 1997 I discovered the importance of interacting with the AAUS community and met my future graduate advisor while attending my first AAUS symposium. I later earned a graduate degree from Texas A&M Corpus Christi working as a scientific diver and diving supervisor on various projects in the Gulf of Mexico and also served as interim DSO for The University of Texas Marine Science Institute. After completing my graduate degree, I returned to UMaine in 2003 where I currently serve as Diving Safety Officer.

My experiences as a science diving student and technician helped to shape my belief that Scientific Diving/Diving Safety programs should exist to facilitate and promote underwater scientific pursuits. At UMaine I have endeavored to foster a customer-service approach to our diving program, offering ever increasing opportunities, tools, and support for diving scientists and students, and I believe AAUS can and should do the same for our community. As a representative of a relatively small, academic institution, I recognize the challenges faced by financially limited programs and I will maintain that perspective as a member of the AAUS Board.

What relationships/networks/professional contacts/non-profit board experiences do you have that will benefit AAUS by electing you to the AAUS BOD?

I have personal and professional contacts on all three coasts; however, the majority of my career has been spent at a relatively small University in a somewhat remote area of the country. As such, I do not pretend to be a politically influential figure or exceptionally well known outside the AAUS community. I do however, have well-established contacts with the representatives from International Training and I am currently working with them on an underwriting, insurance, and training initiative.

While I value the need to interact and collaborate outside our community, I believe my greatest strengths are the professional contacts, working relationships, and personal connections I have established within the AAUS community. These relationships have come from serving as an Appointed Member of the Board under three AAUS presidents, and as the host of the 2011 symposium. As a member of the Board, I will utilize those relationships, contacts, and institutional knowledge to continue pressing forward to meet our goals in a measured and consistent fashion.

Michael Terrell

The Florida Aquarium
Diving Safety Officer
813-367-4019; mterrell@flaquarium.org

Mike Terrell is the Dive Safety Officer (DSO) at The Florida Aquarium. Originally from Indiana, Mike has been diving since 1995 and has over 2000 lifetime dives. Mike received his PADI Instructor certification in 1998 and was subsequently certified as a PADI Staff Instructor, DAN Instructor and NAUI Instructor. He has spent his professional career teaching diving in Indiana, Colorado and Florida. Mike started at the aquarium in 2002 as a Guest Diving Experiences divemaster and worked in many facets of the aquarium including Husbandry, Animal Programs, Water Quality Animal Health and on the Bay Spirit. Since joining the aquarium, Mike has gained experience in mixed gas and decompression diving, CCRs, underwater photography and videography, underwater communications, FFM use and surface supply diving. In addition to all FLAQ scientific diving projects, he has supported underwater archaeology projects in the Florida Keys, the Dominican Republic and Little Salt Spring UM RSMAS 2005 through present. Mike has served as President and President Elect on the BOD of the ADPA for four years and is an active member of the AAUS, ADPA and the AZA. Mike also holds a MOCC Captain's certification. As Dive Safety Officer (DSO) he is responsible for the development, creation, execution and administration of all dive training programs

In your vision, in what direction should the AAUS be heading in the next decade?

Originally established as a way to standardize training and reciprocity within a small group of scientific diving organizations, the AAUS has grown considerably in scope and influence in subsequent years and thus finds itself at its next stage of evolution. When the organization was smaller and less complex, the scientific diving standards were in some respects easier to interpret, implement and maintain, but with the explosion in the past few decades of the diversity of environments in which scientific diving is now taking place, those standards (the basis for which the associated OSHA exemption was granted) are more prone to misapplication. To maintain and enhance the integrity of the Academy, in the next decade the AAUS should have a comprehensive education system for institutional members which should contain three major components. First – easily digestible training materials which set the overall direction of scientific diver training and allow OMs to customize the details for their particular tasks. Second – an enhanced DSO education program, built off of the current DSO orientation now offered at AAUS symposia. The enhanced program would connect new DSOs with experienced DSO running similar programs. It would also provide for non-diving continuing education opportunities,

such as personnel management and best business practices. Third – an orientation for an institution's senior management to diving risk management and the role of the AAUS/scientific exemption in organizational risk exposure. This would allow institutions to better understand what the AAUS is, what it is not and whether or not the scientific occupational diving model is the best for them.

Describe your scientific diving experience and indicate its relevance to AAUS governance.

I have worked on scientific diving projects since 1996, participating in projects such as performing coral recruitment assessments, documenting archaeological sites in the Florida Keys, Dominican Republic and around central Florida and performing fish survey and collection projects. My experience as DSO of the Florida Aquarium requires me to make daily evaluations of diving tasks and their relevance (or irrelevance) to scientific diving. With the wide variety of occupational tasks performed in our program (scientific, commercial, instructional), I have a broad knowledge laws and standards affecting scientific diving and how the interpretation of diving tasks influences the structure of a dive program and the scientific diving community as a whole.

What relationships/networks/professional contacts/non-profit board experiences do you have that will benefit AAUS by electing you to the AAUS BOD?

As past President of the Association of Dive Program Administrators, I have worked with many members of the AAUS board of directors, program administrators from large non-scientific diving institutions and nationally recognized dive training agencies. I believe my benefit to the AAUS will not be in one specific relationship I may have, but in the breadth of my experience across a wide variety of occupational diving fields. I have also served on the Standards Committee of AAUS, worked with various aspects of the AZA and founded two local community non-profit groups.

FUNDING/SCHOLARSHIPS

AAUS Student Scholarships 2012

The AAUS Foundation awards two scholarships to graduate students engaged in, or planning to begin, a research project in which diving is used as an important research tool or studying diving science. The Kevin Gurr Scholarship awards \$3000 to a Master program student. The Kathy Johnston Scholarship awards \$3000 to a Doctoral student. AAUS may also award two additional \$1500 scholarships to the next top-ranked proposals. If the additional scholarships are awarded, they may be split between Master and Doctoral programs or 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 Master or Doctoral program; agree to write an article for the E-Slate describing the proposed research; and present the results of their research at an AAUS symposium or other scientific meeting within one year of the project's completion. Applications are submitted electronically; including a 3-5 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). A letter of support from a faculty advisor must be submitted electronically. **Proposal deadline is June 30.** Scholarship winners will be announced October 01 For more information and an online application, visit www.aausfoundation.org, or contact the Scholarship Committee Chair at aaus@disl.org.

STUDENT OPPORTUNITIES

Scientific Dive Course at Friday Harbor

The University of Washington (UW) Friday Harbor Laboratories (FHL) will conduct a scientific dive course from August 28 through September 09, 2012. This is a short intensive course designed to provide the basic requirements for becoming certified as a scientific diver according to AAUS standards. The course is open to scientists and students at any level of study who meet the requirements for AAUS certification: a minimum of 20 logged dives and medical clearance. The deadline for applications is May 01. For more information, please visit the FHL website: <http://depts.washington.edu/fhl/studentSummer2012.html#SumB-xx> or contact the FHL DO, Pema Kitaeff, at pema@uw.edu.

Maritime Archaeology Field School in Bermuda

Saint Mary's College of California and the University of Rhode Island will be offering a joint Field School in Maritime Archaeology in Bermuda July 16 to August 08, 2012. Training leading to AAUS qualification as a Scientific Diver-in-Training will be provided in advance of departure for Bermuda. Direct questions to jallan@stmarys-ca.edu or rodmath@mail.uri.edu.

UPCOMING EVENTS

Workshop on Analysis of Multivariate Data PRIMER v6

This five day workshop will cover the statistical analysis of assemblage data (species by samples matrices of abundance, area cover, etc.) and/or multi-variable environmental data which arise in a wide range of applications in environmental science and ecology, from environmental impact assessments, through basic studies in community ecology and biodiversity monitoring, to analysis of biomarkers, water quality indices,

physico-chemical variables, etc. The workshop will be given by Dr P J Somerfield (Plymouth Marine Lab, UK). Paul Somerfield is a senior researcher in community ecology and quantitative methods at the PML, spearheading the laboratory's biodiversity research.

'Hands-on' lab sessions will use real literature case studies, analysed with PRIMER. Participants are also encouraged to bring some of their own data to the course. The emphasis throughout is on practical application and interpretation, the theoretical aspects (e.g., the multivariate statistical methods which are the core of the course) being carefully selected to be those that are simple to describe and understand. No prior statistical knowledge is assumed.

The workshop will be held in the Weedon Island Preserve Visitor's Center, 1800 Weedon Island Drive NE, Saint Petersburg, FL 33702 (www.weedonislandpreserve.org), October 08-12, 2012. Contact the local organizer, Walt Jaap (wjaap@tampabay.rr.com; 727-896-0521) for a detailed schedule and a registration form, or for queries on lodging.

Diving Emergency Symposium

Training Beyond Borders Diving Emergency Symposium will take place July 25-31, 2012 in Cancun, Cozumel & Riviera Maya Mexico. This training extravaganza unites divers from across the globe with one common mission – to reach beyond borders to promote dive safety through education. The goal of this symposium is to help increase worldwide understanding and improve management of a dive emergency. A community outreach program is built into this event.

Each day begins with training in the morning followed by an optional unique theme dive adventure in the afternoon.

Training is based on programs developed by Divers Alert Network. At the core is DAN's revised Diving Emergency Management Provider program. This new DEMP lineup is more robust and includes CPR BLS, Emergency Oxygen, First Aid for Hazardous Marine Life Injuries and Neurological Assessments. Additional training opportunities include BLS HCP, Dive Medicine for Divers Parts 1, 2 & 3 and Diving First Aid for Professional Divers. Provider, Instructor and Instructor Trainer tracks are being offered for all DAN courses. Additional information and an itinerary can be found at www.trainingbeyondborders.info.

EPA Dive Training Course

EPA's scientific diver and divemaster training will take place at the Office of Research and Development Lab, Gulf Ecology Division facility near Pensacola, Florida the week of May 21, 2012. As space allows, other government divers with an official need for the training may take the course at no cost. Please contact Jed Campbell, EPA training director at campbell.jed@epa.gov for a full set of course application documents.

Chamber Day 2012

The 24th annual Chamber Day and 14th annual Chamber Evening Fund Raiser for the USC Catalina Hyperbaric Chamber will be held on Wednesday May 02. The USC Catalina Hyperbaric Chamber has been dedicated to the treatment of diving accidents on a 24/7/365 basis for the last 38 years. Having the chamber available gives divers in Southern California waters a vital safety net in the event of a diving accident. There are many ways you can participate in Chamber Day 2012:

- Go diving and tour the chamber
- Attend the evening dinner at the Aquarium of the Pacific
- Enter the raffle and have a chance to win valuable prizes
- Donate to the 2012 Catalina Chamber Challenge
- Get your own print of our limited edition original Chamber Day painting (matted or matted & framed)
- Join the Ghostly Crew and "dive" The Flying Dutchman
- Order Chamber Day & Chamber Evening Shirts and Posters On-Line

For more information on how you can be involved in Chamber Day 2012 visit the Chamber Day web site at www.ChamberDay.org or call [310-652-4990](tel:310-652-4990).

NEW PUBLICATIONS

Bayha KM, Graham WM, Higgins JE III, Fletcher HA, Predation potential of the jellyfish *Drymonema larsoni* Bayha & Dawson (Scyphozoa: Drymonematidae) on the moon jellyfish *Aurelia* sp. in the northern Gulf of Mexico. *Hydrobiologia*. 15 March 2012; doi 10.1007/s10750-012-1038-8

The jellyfish *Drymonema larsoni* bloomed in the northern Gulf of Mexico in the Fall of 2000 and fed voraciously on the moon jellyfish *Aurelia* sp., especially where they were concentrated in frontal convergence. We evaluated the predation potential of *D. larsoni* on *Aurelia* sp. medusa using laboratory and field data. Our data set represents the most complete study to date on the new scyphozoan family Drymonematidae and indicates that *D. larsoni* may be one of the most effective predators on other jellyfish recorded to date. On average, each *D. larsoni* medusa contained 2.7 *Aurelia* sp. prey, but as many as 34. In addition, 94% of moon jellyfish unassociated with *D. larsoni* showed scarring from previous contact with *D. larsoni* tentacles. Digestion times for *D. larsoni* feeding on individual *Aurelia* sp. ranged from 2 to 3 h and averaged 2.7 h. Potential clearance rates for predation on *Aurelia* sp. were extremely high (320–1043.5 m³ d⁻¹) and indicate that *D. larsoni* is potentially an important predator on *Aurelia* sp. blooms where the species co-occur. When the two species co-occur in numbers, predation by *D. larsoni* medusae could reduce moon jellyfish blooms, possibly alleviating predation pressure on lower trophic

levels utilized by *Aurelia* sp., such as copepods and the early life history stages of ecologically and economically important fish and invertebrate species.

Bergsma GS. Coral mutualists enhance fish abundance and diversity through a morphology-mediated facilitation cascade. MEPS. 2012; 451:151-61.

Taxa that alter the morphology of foundation species have the potential to indirectly affect organisms that use the foundation species for habitat. On tropical reefs, coral morphology can be altered by epibiotic symbionts, potentially affecting fish populations that use coral as refuge. In the lagoons of Moorea, French Polynesia, mutualistic gammarid amphipods and chaetopterid polychaetes induce the growth of branch-like 'fingers' on corals of the genus *Montipora*. I tested whether these fingers create habitat for reef fish, and found that juvenile and adult fish sheltered and larvae settled among fingers on both natural and experimental reefs. While the habitat structure induced by the mutualists appears to be of lower quality than that provided by branching corals such as *Pocillopora* sp., the presence of these structures in areas of the reef devoid of branching corals likely means that mutualist-induced structures increase the abundance and diversity of reef fish at the landscape scale.

Dzwonkowski B, Park K. Subtidal circulation on the Alabama shelf during the Deepwater Horizon oil spill, J Geophys Res. 2012, 117, C03027, doi:10.1029/2011JC007664.

Water column velocity and hydrographic measurements on the inner Alabama shelf are used to examine the flow field and its forcing dynamics during the Deepwater Horizon oil spill disaster in the spring and summer of 2010. Comparison between two sites provides insight into the flow variability and dynamics of a shallow, highly stratified shelf in the presence of complicating geographic and bathymetric features. Seasonal currents reveal a convergent flow with strong, highly sheared offshore flow near a submarine bank just outside of Mobile Bay. At synoptic time scales, the flow is relatively consistent with typical characteristics of wind-driven Ekman coastal circulation. Analysis of the depth-averaged along-shelf momentum balance indicates that both bottom stress and along-shelf pressure gradient act to counter wind stress. As a consequence of the along-shelf pressure gradient and thermal wind shear, flow reversals in the bottom currents can occur during periods of transitional winds. Despite the relatively short distance between the two sites (14 km), significant spatial variability is observed. This spatial variability is argued to be a result of local variations in the bathymetry and density field as the study region encompasses a submarine bank near the mouth of a major freshwater source. Given the physical parameters of the system, along-shelf flow in this region would be expected to separate from the local isobaths, generating a mean

offshore flow. The local, highly variable density field is expected to be, in part, responsible for the differences in the vertical variability in the current profiles.

Edmonds C, Lippmann J, Lockley S, Wolfers D. Scuba divers' pulmonary oedema: recurrences and fatalities. Diving Hyperb Med. 2012 Mar;42(1):40-4.

Scuba divers' pulmonary oedema (SDPE) is an increasingly recognised disorder in divers. We report three fatal cases of SDPE, demonstrating its potential serious nature even in the absence of underlying cardiac disease demonstrable clinically or at autopsy. This, together with the frequency of recurrences, has implications on assessing fitness for subsequent diving, snorkelling and swimming. The differential diagnosis of this disorder is also considered, as is its possible inducement by salt water aspiration and its relationship to drowning.

Hughes TP, Baird AH, Dinsdale EA, Moltschaniwskyj NA, Pratchett MS, Tanner JE, and Willis, BE. Assembly rules of reef corals Are flexible along a steep climatic gradient. 2012. Curr Biol <http://dx.doi.org/10.1016/j.cub.2012.02.068>.

Coral reefs, one of the world's most complex and vulnerable ecosystems, face an uncertain future in coming decades as they continue to respond to anthropogenic climate change, overfishing, pollution, and other human impacts. Traditionally, marine macroecology is based on presence/absence data from taxonomic checklists or geographic ranges, providing a qualitative overview of spatial shifts in species richness that treats rare and common species equally. As a consequence, regional and long-term shifts in relative abundances of individual taxa are poorly understood. Here we apply a more rigorous quantitative approach to examine large-scale spatial variation in the species composition and abundance of corals on midshelf reefs along the length of Australia's Great Barrier Reef, a biogeographic region where species richness is high and relatively homogeneous. We demonstrate that important functional components of coral assemblages "sample" space differently at 132 sites separated by up to 1740 km, leading to complex latitudinal shifts in patterns of absolute and relative abundance. The flexibility in community composition that we document along latitudinal environmental gradients indicates that climate change is likely to result in a reassortment of coral reef taxa rather than wholesale loss of entire reef ecosystems.

Johnson V, Adkinson C, Bowen M, Ortega H. Should children be scuba diving?: cerebral arterial gas embolism in a swimming pool. Pediatr Emerg Care. 2012 Apr;28(4):361-2.

Cerebral arterial gas embolism (CAGE) is a well-known serious complication of self-contained breathing apparatus (scuba) diving. Most serious complications of scuba diving

occur in adults because most of scuba divers are adults. However, young age is an independent risk factor for injury in scuba diving and shallow-water scuba diving is the riskiest environment for CAGE. We present a case of a 10-year-old boy who developed CAGE while taking scuba diving lessons in a university swimming pool. This case illustrates the potential danger of scuba diving for children who lack understanding of the physics of diving as well as the often unappreciated risk of shallow-water scuba diving. Our intent is to educate providers of primary care to children, so that they may appropriately advise parents about scuba diving, and to educate providers of emergency care to children, so that they will recognize this uncommon but serious emergency condition.

Kelly JR, Krumhansl KA, Scheibling RE. Drift algal subsidies to sea urchins in low-productivity habitats. MEPS. 2012; 452:145-57.

Highly productive kelp beds off the coast of Nova Scotia, Canada, export a large quantity of detrital material to adjacent low-productivity habitats. We used a combination of dietary tracers (fatty acids, stable isotopes, and gut contents) and gonad index to evaluate the importance and spatial extent of this energy subsidy to green sea urchins *Strongylocentrotus droebachiensis* offshore from kelp beds along 240 m transects perpendicular to the shore at 4 sites. Gut contents and $\delta^{13}\text{C}$ values indicated the presence of kelp in the diets of sea urchins collected up to 240 m offshore from kelp beds. We observed a corresponding decrease in gonad index with distance from the kelp at all sites but one, where patches of live kelp offshore from the main kelp bed provided an additional food source. Sea urchins that fed on a large pool of detrital kelp at another site had ~15% larger gonads than sea urchins at other locations. $\delta^{15}\text{N}$ values were more enriched for sea urchins at 160 and 240 m from the kelp bed, suggesting that these sea urchins consume more animal matter, which was also evident in their gut contents. Our findings suggest that drift kelp represents an important energy source for sea urchins in subtidal habitats on the scale of tens to hundreds of meters offshore from kelp beds and that this resource is increasingly patchy in space and time with distance from the kelp bed.

Montefalcone M, Parravicini V, and Bianchi CN. Quantification of coastal ecosystem resilience. In: Wolanski E and McLusky DS (eds.) Treatise on Estuarine and Coastal Science; 2012, Vol 10, pp. 49-70.

Humans play a profound role in shaping the structure of ecosystems producing heavy impact, sometimes capable of amplifying the effects of natural changes. Marine ecosystems, in particular, are adversely affected by human influences from the local to the global scale. As a consequence, unprecedented widespread changes in the factors controlling the properties of ecosystems are today evident. Coastal zones had a pivotal role in the

development of human societies and many coastal ecosystems are declining around the world across a broad range of spatial and temporal scales. Gradual, recent human-induced changes in environmental conditions (e.g., eutrophication, global warming, and ocean acidification) may have no evident short-term effects on ecosystems, but progressively alter their state, thus increasing the likelihood of the occurrence of abrupt shifts. Marine ecosystems respond sensitively and rapidly to climatic changes, for example, through changes in food webs and species composition that are difficult to predict. In many regions, marine ecosystems have already been significantly weakened by overfishing, contamination, spread of invasive species, and many other anthropogenic influences.

Stewart NL, Konar B. Kelp forests versus urchin barrens: alternate stable states and their effect on sea otter prey quality in the Aleutian Islands. J Mar Biol. 2012; Article ID 492308, doi:10.1155/2012/492308.

Macroalgal and urchin barren communities are alternately stable and persist in the Aleutians due to sea otter presence and absence. In the early 1990s a rapid otter population decline released urchins from predation and caused a shift to the urchin-dominated state. Despite increases in urchin abundance, otter numbers continued to decline. Although debated, prey quality changes have been implicated in current otter population status. This study examined otter prey abundance, size, biomass, and potential energy density in remnant kelp forest and urchin-dominated communities to determine if alternate stable states affect prey quality. Findings suggest that although urchin barrens provide more abundant urchin prey, individual urchins are smaller and provide lower biomass and potential energy density compared to kelp forests. Shifts to urchin barrens do affect prey quality but changes are likely compensated by increased prey densities and are insufficient in explaining current otter population status in the Aleutians.

Van Meter K. Hyperbaric Oxygen therapy as an adjunct to pre-hospital advanced trauma life support. Surg Technol Int. 2012 Dec 1;XXI:61-73. [Epub ahead of print].

Most commercial diving operations and naval operations have 24/7, on-site availability of hyperbaric oxygen therapy to perform routine surface decompression or immediate treatment of arterial gas embolism or decompression sickness. Availability and prompt use of hyperbaric oxygen therapy in the field for treatment of divers with dysbaric conditions has demonstrated its efficacy in acute, co-morbid conditions such as acute exsanguination, blast injury, crush injury, and cardiopulmonary arrest affecting those same divers. Hyperbaric oxygen therapy applied in these cases has demonstrated its utility to augment the efficacy of conventional, pre-hospital advanced cardiac life support and advanced trauma life support. Case studies gleaned from

actual experience with the diving industry illustrate the use of hyperbaric oxygen therapy in these conditions. The unexpectedly favorable results have been replicated by controlled laboratory animal studies. The deck decompression or saturation multiplace chambers used by offshore diving operations can easily and quickly be converted for use as medical field resuscitative units. Lightweight and mobile hyperbaric chambers can be outfitted for use in ambulances or helicopters to address civilian street injury or military "far-forward" injury. These transport chambers are compact in design to be efficient transport stretchers designed to hold both the patient and the medical support clinician. It is hoped that hyperbaric oxygen therapy will gain an increasing role as an adjunct to pre-hospital advanced cardiac life support and advanced trauma life support resuscitative efforts as a low-cost, high-yield intervention. In this regard HBO as applied to ATLS/ACLS in civilian and military medical systems may be a productive, disruptive new application of technology.

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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