THE SLATE
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of Underwater Sciences
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THE SLATE

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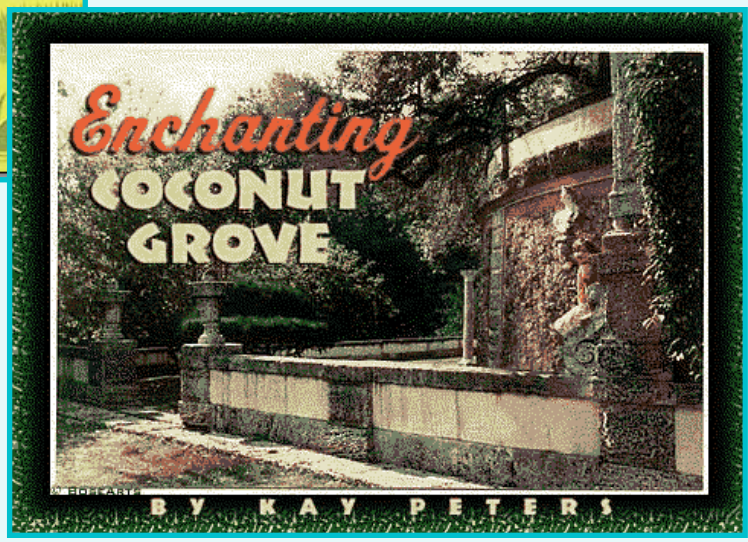
Seminole Ah-Tah-Thi-Ki Museum
at Okalee Village, Hollywood

March 5–10



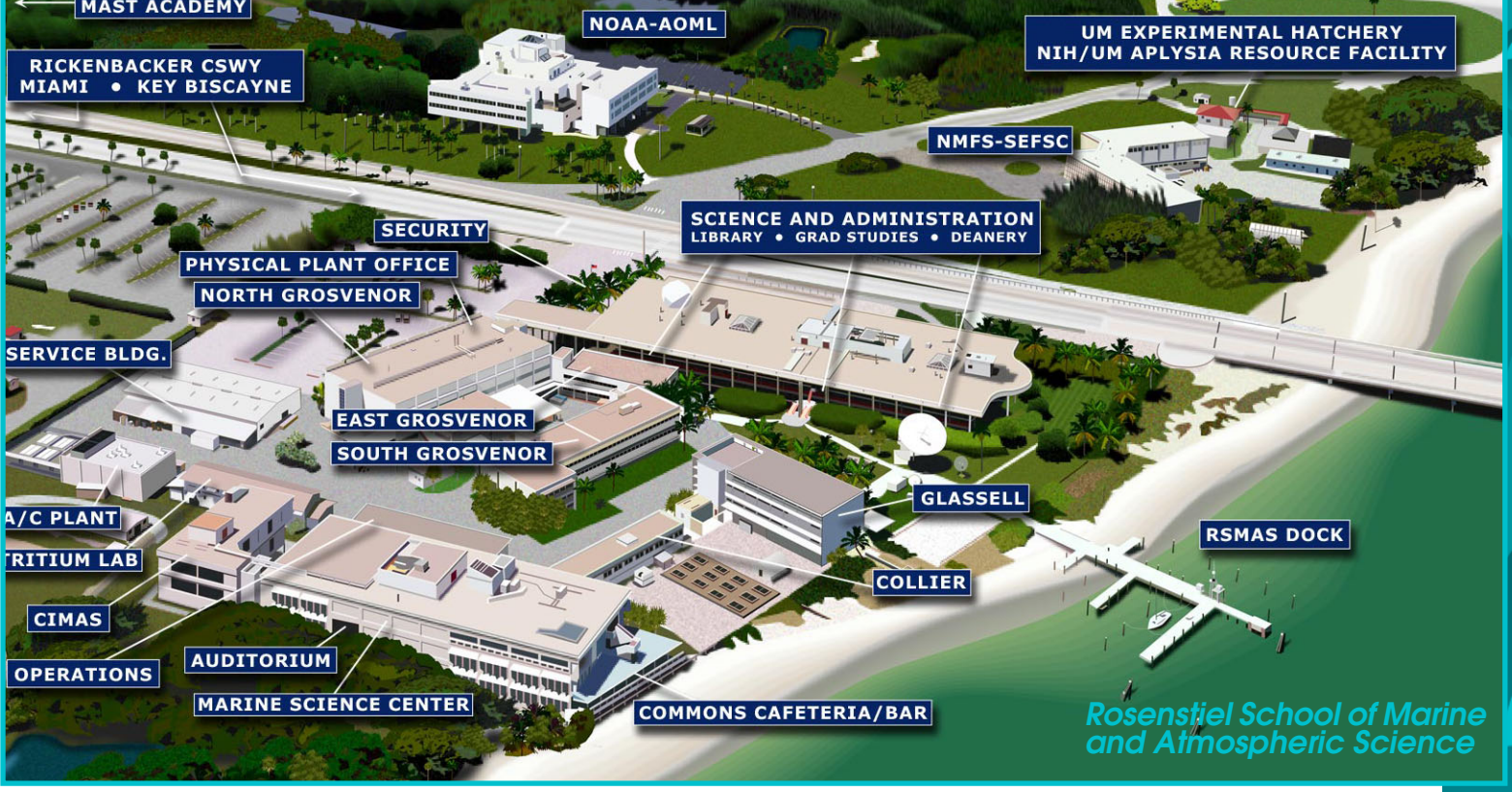
2007 AAUS Diving for Science

NOAA's Atlantic Oceanographic
and Meteorological Laboratory

Sonesta Hotel

Miami Florida

Monty's, a Coconut Grove landmark



Hey, AAUS members!

The **2007 Diving for Science Symposium** is almost here, and the **University of Miami–Rosenstiel School of Marine and Atmospheric Science Scientific Diving Program** is looking forward to hosting a great meeting. The UM/RSMAS campus is located on Virginia Key in beautiful **Biscayne Bay**. With neighbors such as **NOAA's Atlantic Oceanographic and Meteorological Laboratory**, the **National Marine Fisheries Service**, and the **Miami Seaquarium**, this should a very exciting venue. We hope you will join us—***and don't forget your sunscreen!***

This year will be one of the biggest and most active symposia in recent memory—big enough, in fact, to have presentation submissions for two full days and require a concurrent presentation session on Saturday morning. There are also a variety of workshops to help make your trip to Miami productive and enjoyable.

We have a nice mix of oral presentations covering a wide range of topics. There will be talks on benthic work and fish studies as well as talks on diving techniques and diving technologies. Not only do we have a full slate of oral presentations, but we also have a really great poster session planned that many of you will find informative. For a more detailed look at the symposium presentation schedule, check out the AAUS Web site.

The workshop schedule covers a wide range of topics and issues and should have something for everyone.

For those of you that are interested in, or have scientists interested in, going a little deeper or using helium as a breathing gas alternative to air, Doug Kesling will be doing a **Helium Diving workshop** that covers the basic theory and techniques used in this type of diving. This is a 2-day workshop that includes classroom, pool, and open-water work. This is also a quick reminder to make sure you bring the appropriate paperwork with you for the diving portions of this workshop. This should be a lot of fun and very informative. This workshop takes place March 5–6.

Bob Weisman (FIU DSO) and a very qualified staff will be holding a **Boating Workshop** that covers some of the basic concerns that many of us face with administering small day-boat programs. Along with some class work, Bob has planned for some boat time on the water. If you're tasked with administering a boating program, this workshop is for you. This workshop takes place March 7.

DAN instructor-trainer Eric Douglas and AAUS's very own Bill Dent will be doing **DAN Diving First Aid for Professional Divers** (DFA) instructor crossover courses. The DFA course combines the different AAUS safety requirements (CPR/FA/O_2 Admin) into one course. This format reduces information overlap, class time, cost, and paperwork. If these benefits interest you, you should check out the AAUS Web site for more details on this course. This workshop takes place March 7.

For those of you tasked with working on equipment, including SCUBA cylinders, we have Mark Gresham of Professional Scuba Inspectors (PSI) coming down to do a **PSI Cylinder Inspector class.** This class teaches participants how to properly visually inspect SCUBA cylinders for damage. This is a great course for techs or anyone who will be doing this sort of equipment inspection. For more details, check out the PSI Web site at

http://www.psicylinders.com. This workshop takes place March 7.

If you decide that these workshops aren't for you, we have a **half-day dive excursion** set up. The dive excursion will take divers out to some of the **local wrecks and reefs just off the coast of Miami.** For those of you coming down from the cooler areas, this provides you with an opportunity to shed your heavy winter wetsuits and drysuits and be reminded of what warm-water diving is like. **Water temps at this writing are about 74°F.** The dive excursion is offered on March 7.

I hope this write-up has gotten you excited about coming to Miami! We look forward to having you here and to a fun and productive meeting.

See you in Miami! *—Rick Riera-Gomez*

Symposium Fees

Symposium Fee—$260, includes poster session and awards ceremony
Symposium Presenter Fee—$190, includes poster session and awards ceremony
Symposium Student Fee—$80, Registration Only
Symposium Student Presenter Fee—$65.00, Registration Only
Companion Ticket for Poster Session—$15.00
Companion Ticket for Awards Ceremony—$40.00

Symposium Schedule

Monday, March 5, and Tuesday, March 6—Introduction to Helium Diving Workshop—$250.00
Wednesday, March 7—Diving opportunity for non-workshop participants—45.00
Boating Program Workshop—$25.00
PSI Visual Inspector Workshop—$250.00
New DSO Orientation Workshop—$40.00
First Aid for Professional Divers Instructor Crossover Workshop—$250.00
Fun Dives—$45.00
Thursday, March 8—DSO Meeting and Business Meeting—$80.00
Friday, March 9, and Saturday, March 10—Presentation/Symposium

UNIVERSITY OF Miami SCIENTIFIC DIVING

Oral Presentation Schedule

Friday March 9: Location: Auditorium

8:15–9:00	Continental Breakfast
9:00–9:30	Welcome and Opening Remarks
9:35–10:00	Interannual Dynamics and Changes from Historical Levels in Reef Fish Assemblages in Biscayne National Park (Todd Kelison)
10:05–10:25	Coral Restoration in the Florida Keys Using Colonies Derived from Aquacultured Fragments (Ilze Berzins)
10:30–10:55	Spatial and Temporal Variability of Groundfish Populations in Proposed Marine (J. Henry Valz)
11:00–11:15	BREAK
11:15–12:00	Exploration of the Woodville Karst Plain (Jarrod Jablonski)
12:00–13:00	LUNCH
13:00–13:25	Baseline Survey Protocol (BSP) (Hannah Markham)
13:30–13:55	AAUS Diving Officer and Scientific Diver Certifications (Michael Lang)
14:00–14:25	Test and Evaluation of Two, Commercial Off-The-Shelf, Multi-Gas Dive Computers for Providing Accurate Depth Measurements and Acceptable Mixed Gas and Air Decompression Schedules (Morgan Wells)
14:30–14:55	Scientific Diving Safety: Integrating Institutional, Team and Individual Responsibility (Neal W. Pollock)

15:00–15:15 BREAK
15:15–15:40 Physical Fitness of Scientific Diving:Standards and Shortcomings (Alison C. Ma)
15:45–16:10 Using SCUBA and Snorkeling Methods to Obtain Model Parameters for an Ecopath Network Model for Calabash Caye, Belize, Central America (Rebecca Deehr)
16:15–16:40 Long Term Monitoring of a Deep-Water Coral Reef: Effects of Bottom Trawling (John Reed)
16:45–17:10 Video IPOD Instructional Design Consideratons for Dive Training and Underwater Subject Matter (Mike Dermody)
17:15 Closing Remarks
17:20–20:00 Reception and Poster Session—UM/RSMAS Dock

Saturday March 10th —Concurrent Session A
Location: Auditorium
8:15–9:00 Continental Breakfast
9:00–9:15 Opening Remarks
9:20–9:45 Closed Circuit Rebreathers in the Forensic Study of the Rouse Simmons Shipwreck (Gregg Stanton)
9:50–10:15 Evolving Strategies for Rebreather Fatality Investigations (Richard D. Vann)
10:20–10:45 Comparing Potential Differences in The Assessment of Fish Populations and Assemblages Using Open-Circuit Versus Closed-Circuit Modes of Diving: A Study in Silence (Derek Smith)
10:45–11:00 BREAK
11:00–11:25 When Things Go Wrong: A Look at Scientific Diving Incident Reports (Michael Dardeau)
11:30–11:55 When Everything Goes Right (Vallorie Hodges)

Saturday March 10th—Concurrent Session B
Location: Seminar Room Science and Administration Building Rm 120
8:15–9:00 Continental Breakfast
9:00–9:15 Opening Remarks in Auditorium
9:20–9:45 Underwater Methods Enhance Study of Shelter Competition Between Native and Invasive Species of Crayfish (Karl Mueller)
9:50–10:15 Behavior and Sound Production by Longspine Squirrelfish During Playback of Predator and Conspecific Sounds (Joseph Luczkovich)
10:20–10:45 Deploying Benthic Chambers to Measure Sediment Oxygen Demand in Long Island Sound (Prentiss Balcom)
10:45–11:00 BREAK
11:00–11:25 The Influence of Sedimentation on Southeast Florida Coral Reef Community Composition (Melissia Phillips)
11:55–13:00 LUNCH

Saturday March 10th—Afternoon Session
Location: Auditorium
13:00–13:25 An Evolution of Scientific Trimix Diving Procedures at the Submerged Resources Center, National Park Service (Jeffery Bozanic)
13:30–13:55 Quantifying the In Situ Survivorship of Recently Settled Coral Spat (Wade Cooper)
14:00–14:25 Coral Disease and Bleaching Relationships in South Florida in 2005 (Marilyn Brandt)
14:30–14:55 Conservation Efforts of Threatened Rockfish Species at the Oregon Coast Aquarium (Kevin Clifford)
15:00–15:15 BREAK
15:15–15:40 The Effects of Size-Selective Fishing Pressure on the Mating System, Population Structure, and Sex-Change Dynamics of the California Sheephead, Semicossyphus Pulcher (Lynne Wetmore)
15:45–16:10 HIgh Altitude Diving Operations (Randall Berthold)
16:15–16:40 Title TBA (David L. Jones)
16:45 Closing Remarks

WORKSHOPS & TRAINING

AAUS Symposium March 2007

Helium-Based Diving Workshop

By Casey Coy, DSO, Florida Aquarium, Tampa, FL

This workshop will introduce the Diving Safety Officer and Scientific Diver to the techniques, skills, equipment, and diving theory needed to safely extend science diving to greater depths using staged decompression and helium-based breathing gases.

The two-day workshop will include classroom, confined-water and open-water training. The first day of the workshop will be conducted at University of Miami's Rosenstiel School of Marine and Atmospheric Science (classroom and pool work). The second day will be at the National Undersea Research Center, Key Largo.

Curriculum

Classroom

Alternate breathing gases used in deeper diving
Decompression and mixed gas dive planning
Hazards and contingency planning for decompression diving
Equipment used in deep diving
Mixed gas filling

Confined Water (Pool)

Balance and fitting of "tek" rig
Buoyancy and trim, propulsion techniques
"S-drill" and valve drills
Surface marker deployment
Gas switching

Open water

Two decompression dives on the wreck of the Spiegel Grove and an alternate site. Maximum depth not to exceed 140 ft.

Workshop dates

March 5 and 6, 2007.

Cost of the workshop: $250

Workshop maximum limit: 12 participants.

Each participant needs to provide the following:

1. Mask & Fins
2. Exposure protection for extended dives (Water temperature in the low 70s)
3. Letter of Reciprocity documenting Nitrox training and depth authorization of at least 130 fsw.
4. Letter documenting that the workshop participant is covered under home institution's workers compensation policy.

The workshop will provide the following:

1. SCUBA gear (Double cylinders, back plate, wing, regulators, decompression bottle, deco regulator, gas mixes) any necessary student materials for the classroom phase.

Registration: please visit www.AAUS.org

For specific questions about the workshop please contact

Doug Kesling, Keslingd@uncw.edu, (910) 962-2445
Casey Coy, ccoy@flaquarium.org, (813)367.4019

2nd Annual DSO Orientation

Doug Kesling, Coordinator

This program is designed to provide an orientation for new Diving Safety Officers and for existing DSOs who would like more information and an update on particulars of running a Diving Safety Program at their respective institutions or organizations. This training is essential for anyone considering accepting or assuming the role of the Diving Safety Officer and planning to operate a Diving Safety Program.

One-Day Workshop/Orientation Wednesday, March 7, 2007

Cost: $35.00

University of Miami/RSMAS, Miami, Florida

0830–0900	Introduction/Overview of Scientific Diving —Steve Sellers
0900–0945	AAUS and Organizational Membership —Mike Lang
0945–1000	Break

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1000–1045	DSO, Program Development & Reciprocity —William Dent
1045–1130	Dive Standards and Diving Safety Manual —Jeff Godfrey
1130–1200	AAUS Office —Mike Dardeau
1200–1315	Lunch
1315–1345	Dive Statistic Reporting —Christian McDonald
1345–1430	Program Compliance —Chris Rigaud
1430–1530	Legal Issues, OSHA and Workers Comp —Bob Hicks
1530–1545	Break
1545–1630	Legal Issues, continued
1630–1730	Question and Answer Session —All

New AAUS Symposium Workshop Offering

Eric Douglas, Training Director for the Divers Alert Network, will be hosting a **Diving First Aid for Professional Divers Instructor Crossover workshop** on Wednesday March 7, 2007. This new DAN course brings together the DAN Oxygen Provider, AEDs for Scuba and First Aid for Hazardous Marine Life skills into one course with workplace CPR, blood-borne pathogens and first aid. The cost for this workshop is $250. If you wish to participate, you may register at www.aaus.org by clinking on the Annual Symposium link and completing the online registration.

Photos for Derek

Hello, Fellow DSOs!

I am attempting to put together another installment of the "This is why I do what I do" slideshow for the AAUS DSO meeting in Miami next month.

Past years have proven to show the exciting, comical, and very rewarding reasons why we all labor so hard to provide safe diving operations for our organizations. I would love it if you all could take a moment and look through your electronic photo albums and send me a photo in the spirit of the slideshow. As I keep these photos each year, I would love it if the photo was something that happened in 2006 to remind you why you do this… I'm sure everyone can find a good picture; it can be of just about anything as long as it is tasteful (well, you can send me untasteful ones, they just won't get displayed!). Please send your pictures to me at **dsmith@lbaop.org**

Looking forward to seeing everyone soon!

Derek Smith
Diving Safety Officer
Aquarium of the Pacific
100 Aquarium Wy.
Long Beach, CA 90802

Meetings in March

Jeff Godfrey

Diving Safety Officers: If you have agenda items for the **Diving Safety Officer Meeting**, March 8, 2007, please submit them to Jeff Godfrey via e-mail at jeff.godfrey@uconn.edu.

AAUS Board of Directors will hold their **Annual Meeting** March 11th and 12th at the National Undersea Research Center at the University of North Carolina–Wilmington's Key Largo Facility. The meeting is open to all members of the Academy.

FROM THE PRESIDENT

Steve Sellers

You may recall from the President's column in the previous issue of *The SLATE* that the major focus of the remainder of my term as AAUS President will be devoted to the development of a strategic plan for the Academy. It is intended to be a living document covering AAUS direction and goals for five years.

The official strategic planning process kicked off with a full day being dedicated to the process adjacent to the AAUS Board of Directors meeting after DEMA 2006. This initial meeting laid a solid foundation for our planning efforts and included a review of the AAUS mission statement.

"Review" is a bit of a misnomer in some people's eyes, as we could never really agree on whether we actually had a mission statement. The purposes and goals listed in the AAUS bylaws give some hint of what the mission of the Academy should be, but these are not expressed as a mission statement. Or there is the old one-line slogan "Dedicated to the advancement and practice of scientific diving", which is really more of a value than a mission.

After much deliberation and many iterations generated well after our initial day-long session, we arrived at the following mission statement:

"The mission of the American Academy of Underwater Sciences (AAUS) 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, and operations."

With this established as one of the cornerstones of the strategic planning process, the majority of the AAUS Board participated in a strategic planning retreat at the Dauphin Island Sea Lab from the 19th to 21st of January. This retreat concentrated on completing the SWOT analysis (strength, weaknesses, opportunities, and threats), analyzing environmental trends, conducting a performance audit, and beginning the process of identifying goals for the Academy.

BOD members unable to attend the retreat participated by submitting "strategic planning homework" based on the areas we intended to cover during the meeting. Past Presidents of the Academy were also sent these homework materials and asked to submit comments.

The three full days of the retreat were grueling, but very productive. At times, it made DSO Meeting discussions of standards changes pale in comparison. In the end, we all felt it was an excellent exercise and learning experience and helped to get us all pulling in the same direction. We were assisted in our efforts by Dr. Thom Skalko of East Carolina University, who donated his time and efforts as Facilitator for the retreat. I know I can speak for everyone in attendance when I express our thanks for his efforts; we would not have made such significant progress without his help.

The retreat resulted in the writing of sixteen overarching goals for the Academy, but this is not the end of the process. We still need to prioritize these goals and develop sub-goals and action plans to achieve them. This is where we need the help of the membership. We need your help in reviewing and prioritizing the goals list. To that end, a poll will be made available on the AAUS Web site asking Full Voting Members to prioritize their top six goals from the goals list. This poll will close prior to the Symposium in Miami, and the results will be presented the day of the AAUS Business and Diving Officer's Meetings.

Here are the goals generated during the strategic planning retreat (they appear in no particular order):

- Develop the funding necessary to increase the AAUS administrative assistant position to a full-time position.
- Develop the necessary funding to establish and hire a full time Executive Director.
- Expand the AAUS financial base.
- Develop a DSO training and certification program.
- Develop an accreditation and compliance program for AAUS Organizational Members (OM).
- Review and revise core competencies for scientific diver certification.
- Improve functional efficiency of the AAUS office and Web site.
- Establish greater credibility for the Academy.
- Increase advocacy for the concerns of the scientific diving community.

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- Improve/expand our collaborative efforts.
- Expand membership services.
- Development of comprehensive training materials.
- Expand scholarship opportunities available from the Academy.
- Collect, review, and distribute statistics related to scientific diving activities.
- Improve AAUS meetings, workshops, and publications.
- Expand Professional Development for DSOs and Scientific Divers.

E-mail notification of the availability of the Prioritizing Poll will be forthcoming.

2006 AAUS Election
Call for Petitions for Candidates

By Bill Dent

As Nominating Committee Chair, I am soliciting the AAUS membership for candidates for the 2006 AAUS election as required by the AAUS Bylaws. Three elected BOD positions will be vacated at midnight on December 31, 2007. The positions and position prerequisites are as follows:

Policy pertaining to all three AAUS BOD Positions:

- Any AAUS member can nominate a candidate.
- To be considered as a candidate, the individual must have been a FULL voting member in good standing for at least 2 consecutive years prior to the election.
- Each candidate will be required to supply a biographical sketch and answer a few questions supplied by the current AAUS BOD. The answers will be made available to the voting membership. The intent is to reveal the candidates' thoughts on what direction the AAUS should pursue.

Positions up for election

- **President Elect**—this a 2-year position.

The elected President Elect automatically ascends to the position of President at the end of the President's 2-year term, resulting in a 4-year commitment. In order to qualify for this position, the candidate MUST have previously served on the AAUS BOD.

- **Secretary**—this is a 2-year position.
- **Elected Director**—This is a 3-year position.

For a more detailed description of each individual position, please review the current bylaws, which are available on the AAUS Web site or by contacting the current BOD member holding that position: President Elect—Jeff Godfrey; Secretary—Marc Blouin; Elected Directors—Roy Houston, Casey Coy, and Neal Pollock

You can submit a candidate for consideration up until March 31, BUT remember the candidate MUST submit a bio and answers to the questions before being considered, so time can become critical. **The nominating committee will present its list of acceptable candidates to the AAUS BOD on or before March 31. Voting will open May 1st and close on June 30th.**

AAUS BOD Change

AAUS BOD member **Roy Houston** of Loyola Marymount University has resigned from the Board of Directors, citing family health issues and a change in job responsibilities at his home institution. Roy has served on the Board as Scholarship Co-Chair for the past two years and has one year remaining on his elected Director position.

The remainder of his term will be fulfilled by **Elizabeth Kintzing** of the University of New Hampshire. Liz has served on the Standards committee for several years. She assisted in writing the AAUS mixed gas and decompression diving standards and has been active in Academy business, first as an individual member and then as one of UNH's organizational member representatives.

I am grateful to Roy for his service on the Board and his continued support in the transition of a new team to manage the Scholarship Committee. I also thank Liz for her willingness to step in and serve on the Board for the next year and look forward to her assistance in addressing the challenges ahead.

—Steve Sellers

>>>> PRO versus CON <<<<

Formal Mandatory AAUS Diving Officer and Scientific Diver Certifications?

A Position Against and a Counter-Proposal

By Ted Maney

During the AAUS Symposium last March, a position paper was presented proposing that AAUS develop formal mandatory Diving Safety officer and Scientific Diver Certifications. This was presented as an outline with no business plan attached for addressing the financial aspects or logistics for supporting this idea. All that was presented were some bulleted statements for implementation with no details. This was presented again in the last issue of *The SLATE,* again with no business plan or implementation details. The AAUS Board of Directors is considering moving forward towards formal mandatory certifications for all AAUS Diving Safety Officers and Scientific Divers as part of their Strategic Plan.

When this paper was presented, I asked the Board of Directors some basic, fundamental questions and have never received any answers to my questions that addressed details on the proposed implementation of this proposal.

Although I agree that there are problems with our training standards and DSO requirements, I do not believe we need to compete with other training agencies and create our own special training program for DSOs and scientific divers. I have been vocal on this issue for many years and in 2003 proposed the removal of Section 4 altogether because no one is conducting training to these standards. AAUS simply cannot produce the same quality materials for such a limited number of divers. Another issue with trying to develop a standard scientific diver training certification program is that all of our member organizations conduct different types of scientific diving and therefore need some latitude in how they train their divers. The last AAUS Standards revision addressed this issue and allows for this flexibility.

The Counter-Proposal

I would propose that we eliminate AAUS Section 4, Entry Level Standards, and increase the prerequisites for a Diver-in-Training to the following additional requirements:

- Recreational certification to the Advanced Diver level or equivalent
- Rescue Diver certification or equivalent

These additional requirements would bring in divers with more experience and already trained in the emergency-care training and rescue techniques.

I agree that we need stronger requirements for DSOs, but I am opposed to a formal mandatory training program based solely on costs and logistics. Again as a counterproposal, or addressing the implementation issue on this idea, we should increase the requirements for DSOs to include the following:

- Have served 3–5 years in the capacity of Lead Diver as defined in AAUS Sec 1.20.
- Be certified as an instructor for Emergency Care Training as defined in AAUS Sec 5.30.

These simple additional requirements reasonably build upon the current requirements and promote a progression to DSO from within the ranks of scientific divers while keeping the flexibility required for our membership.

AAUS SCHOLARSHIP RECIPIENT

2006 AAUS Kevin Gurr Scholarship

Underwater methods enhance study of shelter competition between native and invasive species of crayfish

Karl W. Mueller, Certified Fisheries Professional, AFS, Chimaera Endeavors
112 Acacia Place, Bellingham, Washington 98225; karlwmueller@msn.com

Figure 1 *Red swamp crayfish,* Procambarus clarkii, *guarding the opening to its burrow.*

Crayfishes (Arthropoda, Crustacea, Decapoda) represent some of the most thoroughly studied organisms of freshwater ecosystems throughout the world (*Figure 1*). Freshwater crayfishes have been used as models to investigate behavior (Figler *et al.,* 1995), physiology and anatomy (Celada *et al.,* 1987; Wheatly *et al.,* 1991), predation and competition (Covich *et al.,* 1981; Carpenter, 2005), ecosystem function (Lodge *et al.,* 1994), and the plight of native species facing invasive ones (Butler IV and Stein, 1985). Wherever they are present, crayfishes function as keystone species (Momot, 1995). For example, their highly adaptive, omnivorous foraging habits can alter food webs at multiple levels; this includes changes to aquatic plant communities and plankton dynamics (Nyström *et al.,* 2001; Dorn and Wojdak, 2004). They can also be an important food source for fishes, mammals, and birds (Hobbs, III, 1993). Furthermore, crayfishes can profoundly affect water quality through their burrowing activities, which re-suspend sediments in a process called bioturbation (Angeler *et al.,* 2001). In short, in the freshwater realm, crayfishes rule! Above water, the aquaculture and live seafood industries, the commercial pet and aquarium trades, and life science curricula from K–12 to college all contribute to our perennial interest in crayfishes. As an MS candidate in Environmental Science at Western Washington University, I had the pleasure of using underwater methods to study these fascinating creatures in a natural setting.

Sheltering is an integral part of crayfish life history (*Figure 1*). Previous research has shown that competitive interaction over shelter influences susceptibility to predation and is one way non-indigenous crayfishes displace native crayfishes (Garvey *et al.,* 1994; Söderbäck, 1994; Usio *et al.,* 2001). Most of these studies, however, were conducted under controlled laboratory conditions and field trials were lacking. To rectify this, I used scuba and snorkeling to conduct two field experiments designed to shed light on shelter competition dynamics between the native signal crayfish *Pacifastacus leniusculus* and the invasive red swamp crayfish *Procambarus clarkii* at Pine Lake, King County, Washington. Last summer, I logged 92 dives in 7 weeks, spending 3–6 hours underwater every day except Sundays (c'mon, I had to dry out and spend some time with family!). It was a great field season; one made all the better by receiving the AAUS Kevin Gurr Scholarship in the fall of 2006.

My study was conducted over an 8-week period from June 19 to August 11, 2006. The experiments took place on a small, gradually sloping shoal at

We extend a special "Thank you!" to all AAUS members who contribute to the graduate research scholarship program. This research would not have been possible without your generosity.

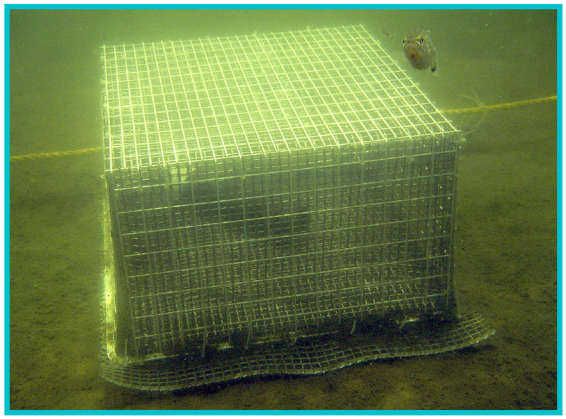

Figure 2 *One of 16 replicate enclosures used during crayfish shelter competition experiments. Note the single PVC shelter within the enclosure. A juvenile smallmouth bass,* Micropterus dolomieu, *is swimming toward the camera.*

the west end of Pine Lake. The shoal was comprised of a clay-like, hardpan substrate and was relatively free of aquatic vegetation. The depth ranged from <3 ft to >12 ft, and considerable crayfish burrowing activity was evident at the site to a depth of about 12 ft. Below 12 ft, the substrate changed to soft fines and gave way to a band of dense aquatic vegetation that extended to a depth of about 18 ft. The maximum depth of most of my dives was 10 ft.

I collected signal crayfish and red swamp crayfish using baited, funnel traps and by hand while diving. The experimental animals were held individually in porous, plastic containers in two flow-through water tables until ready for use. During the study, mixed-species pairs of crayfish were offered one shelter for refuge. The crayfish pairs were placed in enclosures (*Figure 2*) or tethered on the bottom of the lake (*Figure 3*). In one set of field trials, the mixed-species pairs were comprised of same-sex or mixed-sex dyads with individuals of equal size to test the null hypotheses of no differences in shelter occupation between species and sex. In another set of field trials, the mixed-species pairs were comprised of same-sex dyads with individuals of different size to test the null hypotheses of no differences in shelter occupation between species and size. The tether experiments also were used to evaluate differences in predation on signal crayfish and red swamp crayfish (*Figure 4*). Each contest was replicated 16 times. Using scuba, I completed 9–12 observation bouts (1 bout ≤5 min) of each contest during its run, which lasted 3–5 days. The data are not analyzed yet, but I will have some preliminary results to report at the 2007 AAUS Symposium in Miami, Florida.

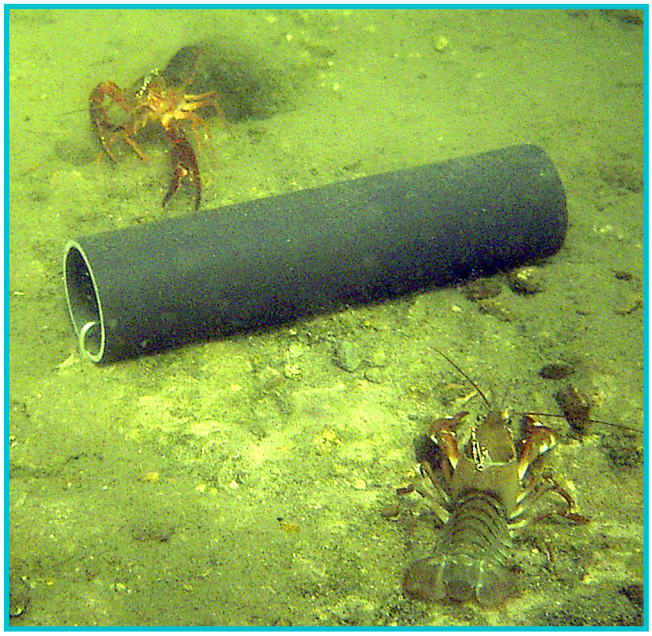

Figure 3 *Red swamp crayfish,* Procambarus clarkii *(background), and signal crayfish,* Pacifastacus leniusculus *(foreground), tethered on either side of a PVC shelter staked into the substrate at the study site.*

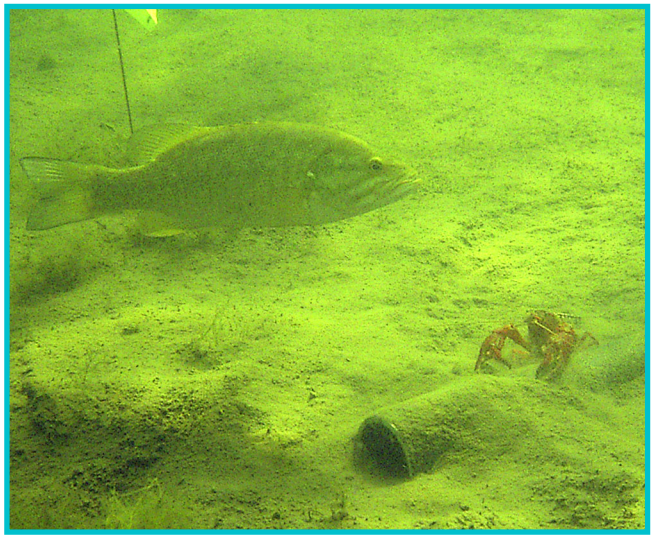

Figure 4 *Smallmouth bass,* Micropterus dolomieu, *stalking a tethered red swamp crayfish,* Procambarus clarkii, *outside of PVC shelter.*

My use of underwater methods was a novel way to investigate shelter competition dynamics in crayfish. The beauty of conducting this type of study in the field rather than a laboratory was that the crayfishes were exposed to all the "sites and smells" of their natural surroundings (*Figure 4*). By using wild crayfishes, as opposed to using "domesticated" experimental animals from some biological supply house, my chances of observing natural interactions between crayfishes with their instincts and behaviors intact were much improved. Not to mention the fact that a passing school of predatory yellow perch *Perca flavescens* or a trophy-sized largemouth bass *Micropterus salmoides* honing in on its prey cannot be replicated in a laboratory (yes, I know it has been attempted, but it just isn't the same as the real deal). Will my underwater observations of shel-

ter competition and aggressive behavior within a natural setting validate the findings of those laboratory studies? More will be revealed after I complete my analysis. One thing is for certain, though: by awarding me the Kevin Gurr Scholarship, AAUS reaffirmed its commitment to fostering the use of scientific diving practices by graduate students immersed in every conceivable aquatic habitat, be it marine lagoon, lowland stream, coral reef, reservoir, temperate rocky reef, or even a little ol' lake in the Pacific Northwest. Thank you, AAUS!

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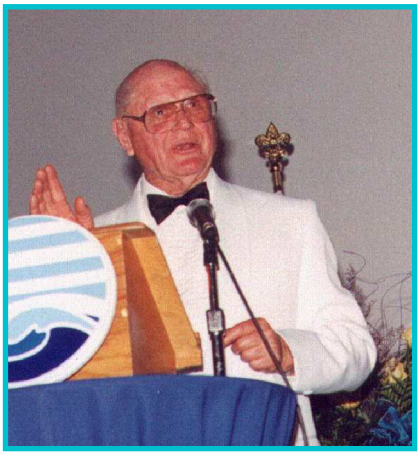
AAUS AWARD



Dr. Andreas B. (Andy) Rechnitzer

AAUS Lifetime Achievement Award 2006

By Doug Kesling

Dr. Andreas B. (Andy) Rechnitzer, 1924–2005, has posthumously received the Scientific Diving Lifetime Achievement Award from the American Academy of Underwater Sciences (AAUS) for his contribution of advancing underwater science and diving technology. Andy passed away on August 22, 2005, at age 81 after a sudden illness. His accomplishments are described in detail in Issue No. 4 of *The SLATE,* December 2006.

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The following link will give you access to the Ocean Research Priorities Plan and Implementation Strategy, "Charting the Course for Ocean Science in the United States for the Next Decade."

http://ocean.ceq.gov/about/docs/orpp12607.pdf

This document was released by the NSTC Joint Subcommittee on Ocean Science and Technology, January 26, 2007.

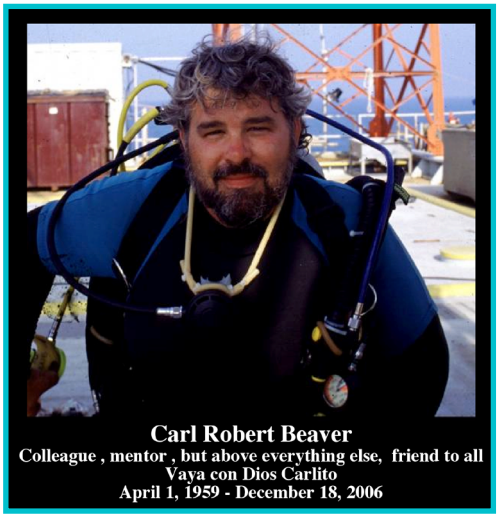
New Arrival

Congratulations to Casey and Susan Coy on the birth February 7, 2007, of their daughter Shelby Ann, 7 lbs and 19.5 inches. This was a little ahead of schedule, but mother and daughter are doing fine. The proud Poppa indicates that his sleep depravation has already begun.... *—Steve Sellers*

CROSSING THE BAR

Dr. Carl R. Beaver 1959–2006

By Walt Jaap



Dr. Carl Beaver was killed 12/18/2006 when his motorcycle collided with a 225-lb. wild hog. Carl was on his way to work at the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute in St. Petersburg when the hog suddenly emerged from a ditch and onto the narrow roadway. He was FWRI's Diving Safety Officer.

Carl was a coral reef researcher and teacher first and foremost. For the greater part of his career, he was a mentor and instructor to many who crossed his path both on the reefs and in the lecture halls of Texas A&M University. He touched many and was very well thought of by his horned-toad colleagues. He took great pride and enjoyment in setting up field trips to the Mexican reefs. Often they drove a vehicle or sailed down the Gulf of Mexico to Vera Cruz and other venues. He was rich in friendships from these days on the Mexican reefs.

Carl made a major change in his career when he took a job with the State of Florida as the manager of the coral reef monitoring group at the Fish and Wildlife Research Institute in St. Petersburg. Here, it was not teaching so much as coordinating a complex and multi-faceted research and monitoring project in the Florida Keys. I had the pleasure and privilege of working with Carl until I retired in December 2005. It had been a good run of integrating a great group of younger scientists with a couple of seasoned veterans. The challenge of laboring under the constraints of a state agency was always an irritant; however, Carl was able to put these aside to focus on the goal of great science. Sometimes it was the weather, sometimes it was gear, and sometimes it was a combination of these as well as the FOJO factor.

We enjoyed Carl's friendship, company, optimism, and desire and passion to help the coral reefs. We have made it a commitment to continue that legacy in our present and future research. His memory should be inspiration to us all. Peace, Carl.

Omaha (center) and the Caltrans dive crew

Thomas "Omaha" Greene

By Henry Fastenau

"Omaha" Thomas Greene was born December 6, 1955, in Chateauroux, France. He passed away peacefully at his home December 29, 2006, in West Sacramento, California. A registered engineer, Omaha was a NAUI certified dive instructor, ANDI IT #5, and a member of the AAUS and ADCI with nearly 20 years of scientific and commercial diving experience. He served principally as an underwater investigation officer for the California Department of Transportation (Caltrans). Omaha owned a construction company, served in the Peace Corps in Fiji, earned his engineering degree at UC–Davis, and owned a SCUBA shop prior to joining Caltrans. Omaha was outspoken and a person of strong beliefs. Although we might not have always agreed with him or his methods, we have to admit that he strengthened the dive programs he worked with. He had a deep and honest belief in comprehensive diver education and safety. In lieu of flowers, memorial donations can be made to your favorite charity. A Web site has been set up by a dive buddy at http://www.omahagreene.org/default.htm so that we can share stories and pictures.

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