would like to make a pitch in the arena of Society finances. While the Society has an investment buffer, we are hardly flush with funds, so in my two years as President, I will favor a path already laid out, of deliberate financial planning. For the first time in years, our proposed and approved budget has black ink at the bottom. This is a major step since the best way to mortgage the future of the Society is to eat up our buffer to the point the Society ends up with a “paycheck-to-paycheck” existence.

(Continued on page 12)

by Rich Satterlie, President

W

ith the Boston meeting behind us, and the Year of Science and Darwin’s 200th birthday celebrations just beginning, we have quite a bit to ponder. In the two months since the Boston meeting, however, our Society leadership has been doing much more than pondering. Our Executive Committee has completed and forwarded the first response to an NSF challenge to compose, shape, and discuss a list of Grand Challenges in Organismal Biology. A subcommittee drew up the list and it has been sent to NSF. It is also posted on the SICB website for your comment. Our next step is to produce

(Continued on page 9)

by Trish Morse, Past-President

John A. Moore (1915 – 2002) chose the Society of Integrative and Comparative Biology (SICB), formerly the American Society of Zoologists (ASZ), as the home Society to develop, present and publish an original series for undergraduate teaching: “Science As a Way of Knowing (SAAWOK).” Moore, a distinguished Professor, author, historian and scholar and a member of the National Academy of Sciences, was the leader in bringing this conceptual biology program to the forefront of teaching in high schools and undergraduate classrooms. The ASZ series, published in the American Zoologist, included compiled manuscripts from presentations by leading biologists in multi-day symposia at the annual meetings for seven years (1984 – 1990)

SAAWOK leaders, Bill Mayer, A. Peter Volpe, Ingrid Deyrup-Olsen, John Moore

(Continued on page 14)
Mention the annual tasks placed before the Executive Committee is to decide on future meeting sites. We made a very hard decision in Boston, to select Salt Lake City over New Orleans for the 2011 meeting, primarily due to Louisiana’s newly-signed legislation that opens public science education to inclusion of non-scientific ideals. On behalf of the Executive Committee and the Society membership, I sent a letter to Governor Jindal of Louisiana explaining the reasons for our decision. The letter (and the decision) caught fire in the press, and continues to smolder as I write this. Again, details of the issue, including thoughtful commentary, can be found on our website. I do want to forward a few comments on this. First, in making our decision, we did not reverse any previous commitments to New Orleans—we did not take anything away. The job of the Executive Committee is to consider all favorable bids for our annual meetings, taking into account a host of financial details including overall cost to the Society and hotel rate and food costs to meeting attendees. We then make a decision that is best for the Society membership. We had competitive bids from Salt Lake City and New Orleans. Despite the popularity of the latter venue, and the financial boost our annual meeting would bring to the city’s economy, we felt we had to make a stand on an issue at the heart of our Society’s purpose and drive—the quality of science education. “Despite the popularity of the latter venue, and the financial boost our annual meeting would bring to the city’s economy, we felt we had to make a stand on an issue at the heart of our Society’s purpose and drive—the quality of science education.”

Our action raises an important question about our Society and its place in the political arena. With a rich palette of scientific and societal issues before us, begging for attention, do we intend to become a voice for the scientific community? Realize that several events came together in temporal overlap to bring our New Orleans decision to the table. These included the Louisiana law, the kick-off of the Year of Science (in conjunction with COPUS—the Coalition on the Public Understanding of Science), the celebration of Charles Darwin’s 200th birthday, and the impending decision about our 2011 meeting venue. This was an unusual situation that “came to us” not one that we sought. Our mission remains unchanged in advancing science and science education, and our best efforts arise when we do what we do best—research and educate. We have found that we have the ability to pick up the brush and paint from that rich palette of popular issues, but we shouldn’t exceed the steady hand of our scientific interests and expertise. As always, however, we (the Society officers) serve you, the membership.

Rich Satterlie
SICB President
SICB Financially Sound, but Had a Tough Year—Treasurer’s Report

by SICB Treasurer Ron Dimock

Boston Meeting Should Finish Solidly in the Black

The outstanding attendance at the annual meeting in Boston should result in a positive net balance for the meeting even though everything about Boston was expensive. The ‘contribution’ of audio/visual resources that Burk Inc was able to secure as part of the contract with the hotel turned out to have some hidden ‘strings’ attached. There was an element of ‘bait and switch’ involved, but Brett and Sue Burk are wrestling with the hotel to get this issue resolved, and SICB should end up o.k. Of course any positive balance that results from any Annual Meeting is rolled directly into the general fund to support all the activities of the Society.

Assets Continue to Erode with Bear Market

My annual report to the Executive Committee in January detailed the loss of just over $300,000 from the assets of our investment portfolio, to a balance in mid December of $819,200. This loss was tempered by the very appreciable capital gains that had been accruing prior to the recent decline in the global economy. Unfortunately, with the continuing financial difficulties facing the US and elsewhere, that portfolio has now declined to $706,000, which is about 10% less than its initial value in 2002. In other words, we have lost the entire capital gain, and then some. The bright spot, of course, is that we would have lost 50% or more of the initial principal, rather than a net of only 10%, had we not realized the intervening capital gains.

The State of Society Finances: Whither Do We Go?

It has been suggested by a handful of Society members during my tenure as Treasurer that I have some kind of fixation on keeping the Society solidly in the black. I’m guilty. One reason is that I’m old enough to remember when the Society was on the brink of financial collapse in the early 1990s. In 1994, the Executive Committee raised the dues from $65 to $110 in one jump. There also was an appeal to the membership to make personal donations to the Society to help relieve the several hundred thousand dollar debt the organization had accrued, a debt load that threatened the existence of the Society. As part of a recovery plan, a professional management company, Smith-Bucklin, was hired to help the Society see its way clear of this financial difficulty. While Smith-Bucklin made great strides in ‘rescuing’ the Society, their efforts also came at very considerable expense. A major source of the Society’s income, revenue from the journal, also was in precipitous decline.

Promises were made to the membership that if and when the financial status of the Society returned to a firm footing, loyal members would be rewarded in part by a reduction in dues. Partly as a consequence of hiring Burk & Assoc, Inc, together with a tightening of the overall budget and the professional management of selected assets, that promise was kept by reducing dues to $85 in 2003. Unfortunately, a considerable number of members had left the Society during those very difficult years. The change in the society’s name also alienated a few more. The effects of the loss of members are only now being overcome.

With the society’s current total (Continued on page 8)
Understanding a Neural Circuit of Gambusia
Experiences in Integrative & Comparative Biology by Eduardo Rosa-Molinar, Program Officer

In my integrative and comparative approach in studying the Western Mosquitofish, Gambusia affinis (hereafter referred to as the Mosquitofish), serendipity and scientific instruments have been on par with my hypothesis-driven research. Serendipity, “the rational exploitation of a chance observation” that occurs while pursuing something else, coupled with specimen preparation methods and three-dimensional (3D) microscopy have led me to discoveries that are more exciting than those originally or intentionally sought in hypothesis-driven research.

A serendipitous observation in 1994 resulted in my redefining the axial and appendicular skeletal formulae of atherinomorph fishes, showing a three, not a two, segmental body plan and naming the third region the anourogenital region.1 In my work on the Mosquitofish I had noticed that during sexual differentiation in the Mosquitofish as well as in other members of the order, the anal fin and appendicular support shifts, resulting in the development of a third and unique region that alters the phylotypic teleost body plan1. The male Mosquitofish accomplishes internal fertilization via a gonopodium, a sexually dimorphic intromittent organ that is a modified portion of the median unpaired anal fin (Figure 1). The anterior shifting of the male anal fin and its appendicular support along the anteroposterior (AP) axis aligns the gonopodium with the urogenital sinus1,2. This AP shift places the gonopodium where its center of gravity or center of mass is located, thus allowing the gonopodium full range of movement1,2. Although the gonopodium of poeciliine fishes has been studied extensively, the effects of evolutionary transitions from external to internal fertilization on the teleost body plan and nervous system had not been studied until recently3. Although the gonopodium of poeciliine fishes has been studied extensively, the effects of evolutionary transitions from external to internal fertilization on the teleost body plan and nervous system had not been studied until recently3.

Using classical and modern neuroanatomical tract-tracing methods combined with electron imaging techniques I first learned as an undergraduate at Tuskegee Institute (now Tuskegee University) and at the University of Alabama, my lab has zeroed in on identifying and characterizing spinal neuronal phenotypes, elucidating the microstructure of spinal motor circuits, and linking both to the onset of complex motor behavior3. Serial section electron microscopy is the preferred 3D microscopy imaging technique used for elucidating microstructure of neural circuits and for developing detailed wiring dia-

Figure 1. Lateral view from video (500 Hz) video of a male G. affinis showing the circumduction of the gonopodium. With the gonopodium protracted (abducted), the male approaches the female from behind and directly underneath her. Just prior to circumducting, the gonopodium is extended and pronated to a point that is nearly parallel with the body. The male G. affinis bends his body into a S-shape type fast start behavior to transfer spermatozeugmata. The sequence ends with the gonopodium adducted. This work is being done as part of a collaboration with George V. Lauder, Ph.D., Harvard University.
Understanding a Neural Circuit of Gambusia—Experiences

(Continued from page 4)

grams. By detecting synapses on electron micrographs of serial sections and tracing axons and dendrites to their cell bodies, one can identify synaptically connected neurons. Complete electron microscopic 3D reconstruction of neural circuits is a slow, slow, slow process because of the sheer amount of data as well as the data processing involved. To expedite our work, we

(Continued on page 6)

“Serendipity—the rational exploitation of a chance observation.”

Figure 2. 3kDa, lysine fixable “micro-ruby” labeled 3 distinct types of neurons in the 14th ventral root. The 3kDa micro-ruby retrograde labeled neurons were visualized using 3’3’ dianimobenzadine (DAB) combined with heavy atom staining to provide high contrast at neuronal boundaries; the stained spinal cords were embedded in plastic and thin sections were cut using a diamond knife in a transverse plane. All sections were cut using the 3View™ from Gatan, a specially designed ultra-microtome operating in situ within a FEI Variable Pressure Field Emission scanning electron microscope (SEM), which allows automated acquisition of 3D ultrastructure by sequentially imaging the freshly cut, plastic embedded uncoated block face. 3View’s unique design allows a relatively short SEM working distance to remain exactly constant throughout a cutting sequence. Furthermore, a finely focused electron probe and small interaction volume enables a spatial resolution over 1 order of magnitude superior to that of confocal microscopy and an order approaching the nanometer scale. As there is no depth probing, this 3D resolution is maintained throughout the sectioning depth. Due to the technique of serially imaging the block face rather than individual sections and because of the stability of 3View’s stage, there is excellent registration between all images within an image stack. This allows simple exporting of the image files in order to easily contour, segment, and reconstruct type-1 (Mn-1), type-2 (Mn-2), and type-3 (Mn-3) spinal motor neurons and the axon of a commissarial primary ascending interneuron (CoPAax) with Imaris® (the 3D volume rendering of the neurons was based on 200 serial images). Note that the 3kDa micro-ruby labeled motor neurons are located dorsolaterally to the Mauthner axons (Max) and ventrolaterally to the central canal (CC). The CoPAax is located dorsally to the Mns in the spinal cord. The cell bodies of Mn-1s, MN-2s, and MN-3s average about 16-20 µm; their axons are equally fine and lie in the ventral half of the cord. This work is being done as part of a collaboration with Joel Mancuso, B.S., Gatan Inc. Calibration bar equals 20 µm.
have begun using a new high-throughput 3D imaging technique, serial block-face scanning electron microscopy (SBFSEM)\(^4\), which has allowed us to rapidly serial section and build detailed wiring diagrams (Figure 2). SBFSEM automates the process of uniform serial sectioning and imaging blocks of tissue by incorporating a microtome into the vacuum chamber of an environmental scanning electron microscope (ESEM) instead of a conventional scanning electron microscope (SEM). Unlike a transmission electron microscope (TEM), the images in an ESEM are generated from electrons scattered off the surface of an embedded tissue sample, which allows the imaging of uncoated block faces\(^4\). This new technology has allowed us to identify the neurons and the basic synaptic micro-structure of the spinal motor neural circuit controlling the complex motor movements of the Mosquitofish gonopodium (Figure 2).

Thus, serendipity, specimen preparation methods, and 3D microscopy have brought us to the development of a detailed wiring diagram that will allow us to begin to understand the fundamental micro-structure of a neural circuit. That, in turn, will allow us to predict what signals drive activity in each of the identified neurons involved and how these signals are propagated throughout the neural circuit to generate complex motor movements associated with the copulatory behavior in the Mosquitofish. Although developing a detailed wiring diagram is not sufficient to completely solve a neural circuit, it’s an excellent start.

References


Eduardo Rosa-Molinar is an Associate Professor of Biology at the Julio Garcia Diaz Center for Investigations in Biology, University of Puerto Rico—Rio Piedras. He is also an Adjunct Associate Professor of Neuroembryology, Dept. of Anatomy, University of Puerto Rico—Medical Sciences Campus.
Symposium Applications for the 2011 meeting in Salt Lake City are due on August 17, 2009.

Program Officer Report
Eduardo Rosa-Molinar, Program Officer

¡Saludos amigas y amigos de Puerto Rico! I hope that the last three months have been going well for you. I am sure that in addition to your classes, research, teaching, and papers and grants, you are taking advantage of the funding available from the National Science Foundation and the National Institutes of Health because of the 2009 American Recovery and Reinvestment Act.

By all accounts, the 2009 Society of Integrative and Comparative Biology’s (SICB) annual meeting held in Boston was a huge success. Because numerous newsletter reports provide specific details about the meeting, I will not repeat them. However, I want to take this opportunity to thank the membership for making the 2009 Society of Integrative and Comparative Biology (SICB) annual meeting in Boston highly successful! Your attendance was outstanding and we hope that this is a trend that continues. There was a lot of hard work done by many people working on the logistics of the 2009 meeting, especially Sue Burk, Lori Strong, the staff at Burk and Associates, and Ruedi Birrenheide. I can’t thank them enough for their hard work and their support of SICB. We are truly lucky in having such support.

Thanks to all symposium organizers and speakers for putting together outstanding symposia. Thanks also to the SICB and Associated Societies Divisional Program Officers who work very hard every year to provide an outstanding scientific program by recruiting and reviewing the symposia proposals and putting together the paper and poster sessions. It was an honor to work with this group and I look forward to working with them again this year. At the 2009 meeting SICB had the opportunity to work with the Coalition on the Public Understanding of Science (COPUS), specifically Sheri Potter, Judy Scotchmoor, and Natalie Kuldell in launching the Year of Science and their website at the meeting. We hope that their experience with SICB was positive and that they will partner with us again at the 2010 Seattle meeting.

The 2010 SICB annual meeting will be held in Seattle January 3-7 at the Seattle Sheraton Hotel and Washington State Convention and Trade Center and should attract hundreds of scientists, including undergraduates, graduates, postdoctoral students, and junior, and senior investigators. As always, the meeting will offer an extraordinary opportunity to explore the depth and breadth of integrative and comparative biology, to renew or establish friendships and collaborations within the SICB community, and to educate the public and policymakers about the excitement of integrative and comparative biological research and its impact on society.

The deadline for the submission of symposium applications for the 2011 meeting in Utah is August 17, 2009, so mark your calendars. Those interested in submitting symposia for consideration should discuss proposals with their DPOs whose expertise and knowledge of submission requirements will be invaluable in preparing proposals.

Keep checking the SICB website for updates regarding the 2010 meeting, particularly in the next few weeks. This is all for now.

Until the fall newsletter ¡Hasta Pronto!!
SICB Financially Sound
Treasurer’s Report continued

(Continued from page 3)

assets in excess of $1,000,000 and with the journal on a very firm footing, we have come a long way since 1994. We now have endowments that help underwrite Student Support, Grants-in-Aid-of-Research, Fellowships for Graduate Student Travel, Symposia, Bartholomew Award, Hyman Scholarships, Moore Lectureships, Davis Award, the new Dorothy Skinner Award, and hopefully in the very near future, the Carl Gans Award. As President Satterlie has indicated in his challenge to the membership, while these endowments give us optimism for the continuation of these programs, all of these funds would benefit from significant increases.

Where would the Society be had we not had the capital to withstand the recent loss of more than $400,000? We most likely are facing some lean years ahead. It’s entirely possible that not only will the value of the Society’s endowments decrease, but also that the current policy of using up to 4% of the trailing 5 years’ average of those accounts as the basis for supporting ongoing programs and activities may have to be revisited. Since no one knows where the bottom of the current recession might be, the only responsible fiduciary policy is to guard Society assets with rigor. Fortunately we have a very able Treasurer-Elect in Bob Roer who is poised to step in and work with the other dedicated members of the Finance Committee.

Ron Dimock, Treasurer

Proposed SICB Bylaws Changes

There are 2 proposed SICB Bylaws amendments, both in Article XV: 1) addition of Section 12 to establish the Committee on Broadening Participation as a standing committee, and 2) modifications to the composition and appointments of the ICB editorial board. Both amendments are proposed by the SICB Executive Committee. A ballot will appear later in the spring.

Article XV: Standing Committees
Section 12. Committee on Broadening Participation: The President shall appoint a Committee consisting of six members, each for a term of three years. The President shall appoint the chair of the Committee. The appointment of members of the Committee shall be ordered so that the term of two members shall expire each year. The Committee shall design and promote activities of the Society to increase the diversity of the membership of the Society and of fields of integrative and comparative biology. The Program Officer, the chair of the Student Postdoctoral Affairs Committee, and the President-Elect shall be ex officio members of the Committee.

Section 5. Editorial Board: The Editorial Board of Integrative and Comparative Biology shall consist of one member from each Division, each of whom shall serve for a term of five years. Additional members may be added to the Editorial Board as Associate members and each shall serve a term of 2, 3, or 4 years, as agreed between the Editor and the appointee. Retiring All members of the Editorial Board shall be replaced by new members appointed by the President upon nomination by the Editor and approval of the Executive Committee. The Editorial Board shall advise the Editor in matters

(Continued on page 10)
ADRIAN WENNER STRONG INFERENCE AWARD SHARED AMONG 3 DIVISIONS

In 1989, Professor Adrian Wenner, now emeritus, from UC Santa Barbara, made a very generous donation to the then American Society of Zoologists to recognize a student paper or poster that embodied the notion of ‘strong inference’, or the posing of alternative, competing null hypotheses as part of experimental design. This concept had been elaborated by several scholars, including John Platt in his book by that title. Platt contended that the rapid advancement of physics in the early 20th century, in contrast in his view to the less progressive character of biology at the time, was attributable in part to the application by physicists of the principles of strong inference.

The memory of some of the membership of SICB was such that for the last several years, the Finance Committee and Executive Committee were under the impression that the Divisions of Animal Behavior and Invertebrate Zoology (DAB and DIZ) were the only divisions eligible to make special ‘strong inference’ recognition available to students at the annual meeting. However, there was a hazy shadow in the mind of some that the Division of Ecology and Evolution (DEE) also was included in Professor Wenner’s original charge to the Society.

Because of this nebulous state of affairs, Dr. Wenner was contacted this past month to clarify the issue. I’m pleased to report that yes, indeed, DEE was to be included, according to Dr. Wenner, and as outlined in the original document that accompanied his donation. Therefore, although the Wenner Award currently is noted only in the by-laws of DIZ and DAB, it should be included in those of DEE as well. Beginning in Seattle, DEE will (once again) be eligible to present this special recognition.

by Ron Dimock, SICB Treasurer

SICB GRAND CHALLENGES

(Continued from page 1)

a series of discussion papers on the topic, to be published by the Society journal in this year’s issues. The first paper will be a “white paper” elaborating on the list of Grand Challenges, to be followed by commentary papers that will represent the breadth of the Society. Keep an eye on the journal website since these papers will be available in digital form before they appear in print. The goal, according to the original challenge, is to help shape research and teaching efforts in Organismal Biology for the 21st Century. It is, indeed, an honor to have our collective experience and intuition so trusted to be challenged in this way. To ensure that all opinions are heard, we will maintain the commentary threads on the website. Also, be sure to look for a formal think/discussion session at the next annual meeting in Seattle.
PROPOSED BYLAWS CHANGES CONT.

(Continued from page 8)

relating to journal policy, with particular reference to determining editorial and business policies for the journal in all respects not otherwise specified by the Constitution and Bylaws.

Four Housekeeping edits in other sections.
Additions = bold underline; deletions = strikethrough.
1. Article III: President-Elect

Section 3. The President-Elect shall serve as an ex officio member of the Committee on Broadening Participation.
Rationale: Updates the duties of the President-Elect.

2. Article VII. Program Officer

Section 5. The Program Officer shall serve as an ex officio member of the Public Affairs Committee and work with the Public Affairs Committee to broadly advertise the program of the annual meeting.
Rationale: Updates the duties with SICB bylaws amendments passed last spring.

3. Section 6. The Program Officer shall serve as an ex officio member of the Committee on Broadening Participation.
Rationale: Updates the duties of the Program Officer.

4. Article XV: Standing Committees

Section 6. Student/Postdoctoral Affairs Committee: Addition of one sentence to the very end of this section. The Chair shall serve as an ex officio member of the Committee on Broadening Participation.
Rationale: Updates the duties of the chair of SPDAC.

BEST STUDENT AWARDS SUPPORTED BY WILEY-BLACKWELL

Our thanks to Wiley-Blackwell Publishers for their generous sponsorship of the cash prizes for the divisional best student paper and poster competitions. Winners were awarded a cash prize and a subscription to a Wiley-Blackwell journal chosen by each division. Congratulations to all the student winners. View the SICB home page for a link to the winners and see also the divisional newsletters.

RESEARCHERS DATABASE

SEND MATERIALS TO YOUR DIVISIONAL SECRETARY

Ever noticed the cool images on the upper left hand corner of the SICB web page? They change every time the screen is refreshed. On such image is shown below and submitted by Miriam Ashley-Ross, a SICB member at Wake Forest University. Miriam submitted this photo and a brief paragraph on her research to the Division of Comparative Biomechanics.

Submit your photos and brief paragraphs to your divisional secretary. It is a great way to advertise what you do. It is a great way to recruit students. Don’t delay.

Lou Burnett, SICB Secretary
It has not been a quiet year for SICB and we can expect more of the same as we look beyond the late winter snow to the spring and summer. The annual meeting was not only a huge success from a public perspective. SICB joined with the Coalition on the Public Understanding of Science (COPUS) to launch the Year of Science 2009. The events at the annual meeting were well attended and generated a great deal of interest and discussion among the members. We are planning on working with COPUS through the year and holding some event related to COPUS and SICB at the Seattle meeting in January 2010. Our meeting was covered by reporters from Science magazine, Science News, and local media.

SICB plans to cooperate with COPUS during the year to offer media training to SICB members and scientists around the country who may find themselves in need of skills and tools to better work with the press. PAC also plans to provide continued presence for the Society in national science policy matters. Two areas where we are sure to continue a presence is in science in the classroom, as discussed below, and in federal funding priorities for science.

At our January meeting in Boston, the SICB Executive Committee was scheduled to make the final decision on the meeting location for our 2011 meeting. Our members should know what happened next—the Executive Committee decided to go to Salt Lake City in large part owing to a new Louisiana law that will undermine science education and teaching evolution. The full membership had already voted last year on supporting evolution and opposing anti-evolution in curriculum and instruction, so the Executive was on solid ground in turning away from a New Orleans meeting. President Rich Satterlie notified Louisiana Governor Jindal of SICB’s decision and the press ran with the news. Many of the stories are listed on the SICB web site front page with links to access the full text. President Satterlie also sent out an update to our members via email.

In the wake of the publicity around our New Orleans decision, we have received both supportive (many) and critical (few) correspondence. The latest missive is an open letter to SICB from someone associated with the Discovery Institute that supports teaching creationism in science classes. The letter is not complimentary of SICB nor is it a tribute to its author who repeats a lot of factual errors.

In follow-up to the events in Louisiana, the SICB Executive Committee decided that we, as a society, need to take some positive actions in support of teaching science in schools. Thus, PAC will work with other SICB committees and other groups, as appropriate, to provide resources to science teachers in Louisiana. We anticipate helping science teachers present scientific methods and inquiry in a light that will enable students to understand the differences between scientific inquiry and criticism on other, non-scientific grounds.

We encourage SICB members to write to their local papers in support of Darwin’s 200th birthday celebration this year. We prepared some brief guides to help out those who are of a mind to write to their papers and these are on the SICB web site. We also hope members will support science education and the broad topic of public understanding of science, and watch for COPUS – SICB events near you!

Peter deFur, Chair, PAC
“Buy SICB a Grande Iced Mocha three or four times a year.”

Buy SICB A Mocha

(Continued from page 1)

I would like to sidestep the issue of the investment buffer, however, and suggest we adopt a financial model more like the one seen in several other societies—one that operates on sizeable endowments to fund the various society activities and preserve the overall financial health of the organizations. Our endowments are paltry compared to those of other societies, in part due to our history. Although we are being proactive in soliciting larger pots of endowment money, our main mechanism for building our endowments is through our membership. For this reason, I am forwarding a challenge to every member of our Society. And, yes, this includes all of you student members out there. You are as much as we are you. Here is the challenge. Buy us (the Society) a Grande Iced Mocha three or four times a year (or even once). In other words, donate five dollars to the society three or four times a year, and earmark the donations for a specific endowment fund. It’s easy—there is a “donate” clicker on the home page of our website, and a page where the endowment funds can be selected with just another click. You can buy the “coffees” as a lump sum, or as individual “beverages.” Think of how many cups of coffee are consumed at the Society’s expense at the annual meetings. You would probably have a shudder-fit if you knew how much we pay for that “free” coffee at the poster sessions. Can you buy three or four back?

My personal pet endowment is the Symposium Enhancement Fund, which provides support for our wonderful symposia at our annual meetings. These symposia form the backbone of our meetings and they “feed” the Society journal. The journal, in turn, provides a major asset line in our annual budgets. With grant money tight, finding support for symposia is more difficult than ever. Building this endowment would give symposium organizers more freedom in inviting both national and international participants to join us at our meetings. To “walk the walk” I’m going to forward another challenge to all of the Life Members of SICB (I am one). As Life Members, we do not pay annual dues. For each of the two years of my Presidency, I will pay the amount of a regular membership into my favorite endowment fund, and I’ll challenge all other Life Members to do the same. It’s my big Iced Mocha for SICB.

As always, we are looking for new symposium ideas for our upcoming meetings. Please read the Program Officer’s note and consult the website for deadlines related to symposium organization.

I would like to send my thanks to our Webmaster, Ruedi Birenheide for his diligent work in improving the website, and particularly in adding all information and commentary on the major issues that have surfaced in the last two months.

Thanks also go to Burk, Inc. Most members are unaware of the amount of work that goes on “behind the scenes” in the months between annual meetings. Much of this work is handled by the Burk team.

Finally, the Sharp Stick Award goes to our Secretary, Lou Burnett. His job is mostly thankless, except here. His efforts are heroic.

Now, how about that cup of Joe?

Rich Satterlie
SICB President
First, I want to thank the entire Student Support Committee (SCC) for making this 2009 proposal selection responsibility go smoothly at the Boston SICB meeting. Although we have gained 5 new members we are sorry to lose Patricia Hernandez, Paul Cupp, Marta deMaintenon, and Michelle Nishiguchi. Thank you all very much for your service on this committee over the past 3 or more years. This year brought a couple of new faces and ideas to the SCC and I appreciate the contributions of Sheila Patek, Stephen Kujiura, Ignacio Moore, Tonia Hsieh, and Sarah Woodley. This year, our members representing all SICB divisions read thorough close to 100 proposals through the Grants In Aid of Research (GIAR) awards and the Fellowship for Graduate Student Travel (FGST) awards to determine the successful awardees. A list of all of the funded proposals appears on the SICB web site and the projects represent the illustrious and diverse research of this membership. Briefly, we funded 3 out of 18 submitted FGST awards with each award approximating $2000. We funded 24 out of 64 GIAR awards for a total of close to $24,000. It is clear that SICB provides substantial student research support and in this time of restricted funds, both faculty and student members are appreciative. We will be seeking four new members for the committee this year, so if you are interested in serving on this important committee, please contact me (sltamone@uas.alaska.edu).

For the 2009 application process, we have made some changes that should make the review and application process more streamlined. Applicants will need to once again apply through an online process and will need only one letter of reference provided by their major advisor. Remember that if you have already received either a GIAR or an FGST, you are ineligible for applying for continued funding in 2009.

The new deadline for 2009 applications will be November 1, 2009. Final decisions will be made at the Seattle 2010 meeting. Graduate students who will be applying for FGST and GIAR awards this fall should please keep an eye on the SICB webpage for any announcements concerning Student Support.

Sherry Tamone, Chair

Oxford University Press, the publisher of the SICB journal Integrative and Comparative Biology, has generously agreed to support our symposium program. Details of the arrangement are currently being worked out. Such support will assist the Society in supporting symposia at the annual meeting. Members might consider donating to the SICB symposium Enhancement fund.

John A. Moore, along with the chair of the ASZ Education Committee, Ingrith Deyrup-Olsen, initiated this series in 1982 to meet the needs of university and college teachers, especially in the first year biology courses. The envisioned framework for SAAWOK included selecting a major biological topic, assembling an ASZ symposium by leading research scientists updating the topic for teaching, an essay on the topic and a film program. The first topic was evolution and the first presentation was at the 1983 ASZ Annual Meeting in Philadelphia. A sixty eight page essay on Evolution written by John and pre-printed before the meeting by Allen Press and distributed to all the participants) and contributed symposium presentations by a group of well-known scientists (Marvalee Wake, Peter Volpe, William Mayer and Bruce Levin) were all published in the American Zoologist. John had a way of including an historical perspective in his essays with classical illustrations. It is evident that his gift for scholarly writing makes the materials accessible to all levels of readers and is of interest to this day.

During the production of this series, John was a faculty member at the University of California at Riverside. He was supported by a distinguished group of scientists, many of them colleagues from his former days as a member of the Faculty at Barnard College and Columbia University. Bill Mayer, John’s wife Betty Moore and Ingrith Deyrup-Olsen played major roles managing the project and in editing the yearly produced essays. The films for each topic were arranged by Nathan Hart and Gary Anderson and available for participants to see at the meetings.

John, singlehandedly, wrote the essays for four years on Evolution, Human Ecology, Genetics and Developmental Biology. During the last three years Moore was joined in organizing the symposia and writing the essays by Bill Mayer and Ingrith Deyrup-Olsen for SAAWOK - Form and Function, Bruce Alberts in the SAAWOK - Cell and Molecular Biology, and Edward Hodgson in the SAAWOK - Neurobiology and behavior. John and his team were able to draw in well-known research biologists to participate in the symposia. Such leaders as Marvalee Wake (Evolution), Paul and Anne Ehrlich, Garrett Hardin and Robert M. May (Human Ecology) “Gregor Mendel,”
John Moore and SAAWOK

(Continued from page 14)

R.O. Lewontin, David Suzuki, Francisco Ayala, Bruce Alberts (Genetics) “Hans Spemann,” Eric Davidson and John Bonner (Developmental Biology), Stephen Wainwright, Al Bennett, Carl Gans, Karel Liem (Functional Morphology), Bruce Alberts, Mitchell L. Sogin, Victoria Foe, Garrett Odell, J. Michael Bishop (Cell and Developmental Biology), Barbara Belz, A. Gelperin, Franz Huber (Neurobiology and Behavior) and there were others, all together about eighty participants.

After the first four years of writing essays, John began to write three parts that are titled, “A Conceptual Framework for Biology.” Part I included, the physical substratum, the origin of life, Eukaryotic cells, The kingdoms of life, Genetic continuity – transmission genetics, and Genetic continuity – development. Part II a continuation of the Genetic Continuity – evolution. Part III concluded Genetic Continuity – evolution, Classification, Ecology, Geographic distribution, the nature of science, and Biology and human welfare.

A list of all the publications is produced here and can be accessed on the SICB journal by our members through the SICB web site under the “publications” tab.

PUBLICATIONS – of Symposia and the Essays:


SPECIFIC RESOURCES:


“Special lecturers” often appeared with the symposia, noted above, and were all impersonations by Richard M. Eakin. Such presentations were greatly enjoyed by participants, as Eakin appeared in elaborate dress of the times. He impersonated Gregor Mendel who lectured on genetics, William Beaumont who lectured on Gastric Digestion and Hans Speman who lectured on cell biology.

An important facilitation of this entire series resulted from a grant proposal written by Ingrith Deyrup-Olsen to the Carnegie Corporation of New York. SAAWOK received about $20,000 that first year and a continuing support stream of nearly $400,000 total for page costs, reprints and meeting costs for participants. This is the largest grant ASZ

(Continued on page 16)
had received and allowed for the additional printing of 43,000 copies of the publications that were distributed within the U.S. and 63 other countries. Along with the distribution of the *American Zoologist* to the Society membership, the estimated total of 100,000 copies were distributed to faculty involved in undergraduate teaching Biology in colleges and universities.

Symposium participants had the essay in hand and heard the latest update on research that was published the following year in the *American Zoologist*. They also had film resources and together this provided a model for developing information for use in the classroom. Participants, both university and college faculty as well as high school teachers who attended the yearly symposia filled the large rooms at every presentation. Due to the support of the Carnegie Foundation of New York, the final distribution of the essays went way beyond the ASZ meetings. In 1992, encouraged by John Moore an education symposium, *Science As a Way of Knowing – Biodiversity*, was convened by Trish Morse and Barbara Thorne, at the ASZ meeting in Vancouver, Canada. Following the SAAWOK format, an introductory essay by E.O. Wilson was preprinted and shared with the participants at the symposium. Among the leading research scientists contributing to the symposium publication were Joel Cracraft, Colleen Cavanaugh, Paul Dayton, Nalini Nadkarni, Ken Sebens and Walter Reid. Tom Lovejoy presented the first John A. Moore Lecture (Science As a Way of Knowing – Biodiversity. 1994. Amer. Zool. 34: 3-171.) As noted in this final presentation, the goals of SAAWOK for improving the teaching of biology continue to be valid: 1) to evolve entry level courses that emphasize concepts with materials consistent with the changing needs of students and society 2) relate how scientific procedures lead to a better understanding of the natural world and to the solutions of important human problems and 3) present biology as a relevant humanistic discipline. This was the last published ASZ contribution SAAWOK in the template established by Moore and his colleagues.

Before SAAWOK, Moore was a devoted champion for putting resources for teaching biology in the hands of teachers in high schools, colleges and universities and he continued his numerous contributions to biology education after SAAWOK. John made significant advances to biology education through the Biological Sciences Curriculum Study (BSCS). His early work with BSCS is best known for producing three versions of high school biology textbooks, blue, green and yellow emphasizing a cellular, environmental and systematic context to teach biology. He was central to the publication of the “Yellow version.” During his active lifetime, he served on endless committees on education for the National Academy of Sciences, American Association for the Advancement of Science, National Association of Biology Teachers,
BSCS, Carnegie Corporation of New York, and National Science Foundation.

Awards and Recognition of John’s contributions are numerous. He was honored with an ASZ award for major contributions to Science Education in 1987 and, at the conclusion of the SAAWOK series in 1990, the ASZ Executive Committee established the “John A. Moore Lecture in Science Education.” When Professor John A. Moore died at the age of 86 in 2002, he had just received the AIBS Education Award, presented to him by Bruce Alberts, then President of the National Academy of Sciences.

It is his “Science As a Way of Knowing” Series that endeared him to the Society of Integrative and Comparative Biology membership. He influenced, mentored and encouraged many to carry on and help meet the needs of our college and university faculty in the conceptual teaching of Biology.

by M. Patricia Morse
Friday Harbor Laboratories
Biology Department
University of Washington
(Trish Morse served as Society President in 1985.)

SICB Needs Your Help

The SICB supports many programs within the organization through special funds it has created. Do your part and donate to these funds on a regular basis.

Click on Donate to SICB on the SICB web page.

- Carl Gans Award Fund
- Charlotte Mangum Student Support Fund
- Dorothy Skinner Award Fund
- Dwight Davis Fund
- George Bartholomew Fund
- Grants-in-Aid of Research/FGST
- John A. Moore Lectureship Fund
- Libbie Hyman Scholarship Fund
- SICB Symposium Enhancement Fund

From the Researchers Database

Stephen Secor and a graduate student (Shelley Spann) and an undergraduate student (Jason Barton) measuring blood flow through the superior mesenteric artery and hepatic portal vein of a 12 kg python crawling down the hallway in the Biology Building at the University of Alabama.
Candidates
Member-At-Large:
• Sally Leys
• Berry Pinshow

Ballots will be issued later in the spring.

Candidate Profiles—Spring Elections

SICB Member-At-Large Sally Leys

Current Position: Associate Professor of Biology, Canada Research Chair in Evolutionary Developmental Biology, University of Alberta, Edmonton, Alberta, Canada.


Professional Experience: Assistant Professor Limited Term (2000-2002) University of Victoria; Assistant Professor through Associate Professor (2002-2009) University of Alberta; Canada Research Chair, University of Alberta (2002-2012).

SICB Activities: Member of Division of Invertebrate Zoology and American Microscopical Society since 1998; member of SICB and Division of Evolutionary and Developmental Biology since 2008.

Other Memberships: Member of Canadian Society of Zoologists (CSZ) since 2004; Council member of CSZ 2004-2007; co-organizer of a new CSZ section Comparative Morphology and Development 2007; Member of the Society for Developmental Biology and co-organizer of the regional Northwest Developmental Biology meeting in 2008.

Research Interests: Physiology and evolutionary developmental biology of basal metazoan phyla, especially embryology of sponges, homology of genes and gene pathways and ultrastructure of morphological correlates; ecology of deep sea benthic invertebrates; glass sponge physiology and ecology.

Statement of Goals: SICB is a dynamic organization that has moved with the times, changing name, and fluidly expanding into new areas of interest and research. It is the SICB members that have made this happen, and it’s the diversity of areas of organismal biology covered by the organization that keeps new members coming in, providing strength and flexibility. Viewed from Canada, our Canadian counterpart CSZ has much in common, and much to learn from SICB. The change of name is one example of flexibility of the society that has allowed many people feel at home in SICB. There are many SICB members who are at large, who return for the annual meetings. The society benefits from this quiet outreach as well as through more formal affiliations with other societies both national and international. It is these affiliations I think the member at large could probably most assist with, expanding the international face of the society.
CANDIDATE PROFILES—SPRING ELECTIONS

SICB Member-At-Large Berry Pinshow

Current Position: Professor, and Chairperson, Mitrani Department of Desert Ecology, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev.

Education: B.Sc. Tel-Aviv University (Biology), 1968 – 1971; Ph.D. Duke University (Zoology), 1975; Post-doctoral Fellow (Biophysical Ecology) 1976-1977, University of Wisconsin, Madison

Professional Experience: 2007 – Guest teacher, University of the Witwatersrand, Department of Animal, Plant and Environmental Science; 2006 – current: Chairman, Mitrani Department of Desert Ecology, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev; 1995: Professor, 1988: Associate Professor, 1983: Senior Lecturer, Jacob Blaustein Institute for Desert Research and Department of Life Sciences, Ben-Gurion University of the Negev; 1983: Senior Lecturer, Jacob Blaustein Institute for Desert Research and Department of Life Sciences, Ben-Gurion University of the Negev


Other memberships: American Physiological Society; American Ornithologists' Union; Cooper Ornithological Society; European Ornithologists' Union; Sigma XI; Zoological Society of Israel

Research Interests: Physiological ecology. Animal-environment energy and water exchange. Physiology of thermoregulation and osmoregulation in desert animals and flying birds. Avian respiration, thermoregulation and osmoregulation and their role in flight duration, especially in migrants. How diet, body-composition and hypothermia affect fattening in migrating birds at stopovers; the physiological ecology of desert bats - where do birds and bats intersect? The relations among soil physical properties, the gaseous environment and animal acid-base physiology in rodent burrow brood chambers: does ammonia also play a role?

Statement of Goals: Aside from the basic duties of a member-at-large, I wish to see the SICB become a society with a truly international membership and flavor. I wish to promote the society, first and foremost among potential members in Israel, and, if possible work with colleagues in Europe and Africa (particularly South Africa) to do the same. I would like to see affiliated societies from countries outside of the US become more actively associated with the SICB. Dropping “American” the society name opened the door for this kind of activity, but it certainly has not happened in Israel or South Africa, two academic societies that I am well familiar with.

Ballots will be issued later in the spring.