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Animal Behavior
Comparative Biomechanics
Comparative Endocrinology
Comparative Physiology & Biochemistry
Evolutionary Developmental Biology
Ecology & Evolution
Invertebrate Zoology
Neurobiology
Phylogenetics & Comparative Biology
Vertebrate Morphology



#sicb2014

EXPERIENCES—DANCING FALL LEAVES! LESSONS FROM GOD

by Billie Swalla SICB President

By Martin E. Feder
President, SICB 1999-2000

It is an honor to follow in David's wake (Experiences—A Peruvian Adventure and the Start of a Research Career, SICB Newsletter Spring 2013) in this series. Unlike Dave Wake and the preceding authors, however, I focus on how personal interactions can influence our careers in unexpected ways. Let me exemplify:

My first-grade teacher, Mrs. Robins, turned me on to integrative and comparative biology. Cutting-edge



Martin Feder, about to record salamander thermoregulation in the field, outside of Oaxaca, Mexico, in 1976.

technology in 1958 was 16mm film, and so we first-graders trooped to the gym to undergo a massively boring educational film on "Springtime" featuring various plants and animals. Thence ensued the obligatory and perfunctory classroom discussion, except that a classmate unexpectedly asked: "Why don't rabbits lay eggs?" Rather than dismiss the question or provide a trite answer,

I hope that you are all planning on coming to Austin, Texas in January, 2014. Don't delay, go online and fill out your SICB registration **NOW** – before you get one of those reminders! Austin is a fun city. One stroll down sixth street, just a block from our hotel, and you see why – the Texas Legislature, UT Austin, and a vibrant music scene make it a bustling metropolis. However, don't forget to have some Tex-Mex, hot sauces, barbeque and one of their legendary margaritas while you are there. You'll see why they say "Everything is bigger in Texas!" Don't forget to be spontaneous and grab opportunities when they come. We were in Austin recently to plan the SICB meetings. Our waiter said, "Oh, by the way, Blondie is singing right across the street tonight, if you like her music." Blondie? Really? SICB Executive Officers had a dilemma. Should we go back to our rooms and answer 200+ emails, or go boogey down at a Blondie concert in the warm outdoors? Four of us chose the latter. What a beautiful, clear voice Blondie has! It is still great, even though she is 68! She also featured X, who is one of the best guitar players that I have ever seen at a concert. Put your sunglasses and swimsuit in the suitcase and prepare to have fun in Austin, Texas while enjoying great science at SICB 2014.

One of my goals as SICB President is to speak out about the science on current political and educational topics. The most important one this fall

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SICB Executive Officers**Billie Swalla**

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Brett Burk

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Storytelling Skills: Now Mandatory for a Career in Science — Randy Olson, Filmmaker **Opening Plenary Lecture, January 3, Austin**

Randy Olson is a scientist-turned filmmaker, who earned his Ph.D. with former SICB President Ken Sebens. Randy was a Professor of Marine Biology at the University of New Hampshire until he became an independent filmmaker. Randy is the creator of "Flock of Dodos," a documentary film focused on controversies associated with teaching evolution in schools, and "Sizzle: A Global Warming Comedy," both award-winning films. He is also the author of "Don't Be Such a Scientist: Talking Substance in an Age of Style," which presents a model for effective communication of technical information to a broad audience.



Also see "**Narrative and Storytelling Workshop**"—[details on next page.](#)

The Contextual Nature of Evolutionary Reasoning: Implications For Biology Teaching, Learning, and Assessment — Ross H. Nehm, Stony Brook University **John A. Moore Lecture, January 7, Austin**

Recent studies of evolutionary reasoning across age groups (elementary, high school students), nations (China, Germany, Indonesia, and the USA), and expertise levels (undergraduates, practicing scientists) have revealed new insights about how humans think about evolutionary change. This talk will summarize these empirical findings, and discuss their implications for biology teaching, learning, and assessment.

Ross H. Nehm is Associate Professor in the Department of Ecology & Evolution, and a member of the Ph.D. Program in Science Education, at Stony Brook University in New York. His recent work has focused on measurement of evolutionary understanding and study of the growth of evolutionary thought. His evolution

education research was recently highlighted in the National Research Council publication *Thinking Evolutionarily* (National Academy Press, 2012).



APPLY TO
PARTICIPATE

in Randy Olson's "Word,
Sentence, Paragraph"
Workshop to make your
science voice concise,
compelling, and exciting
at the Austin 2014 Annual
Meeting –
Applications due
Dec 6, 2013

[http://www.sicb.org/
meetings/2014/wsp.php](http://www.sicb.org/meetings/2014/wsp.php)



TRANSFORM YOUR SCIENCE INTO NARRATIVE AND STORYTELLING—A SICB WORKSHOP

Transform your science into narrative and storytelling with scientist and screenwriter, Randy Olson, at the 2014 Annual Meeting in Austin, TX.

Have you ever thought about

- writing an article about your research for the popular press?
- telling stories about your experiences as a scientist in print, screen, or audio?
- using your science as a basis for a fictional story, novel, teleplay, or screenplay?
- telling science stories that are just plain *unboring*?

Or maybe you just want to become a better communicator with other scientists and the general public.

The SICB Public Affairs Committee is pleased to announce the "Storymaking with the WSP Model" workshop at the 2014 Annual Meeting in Austin, TX, with this year's keynote speaker, Randy Olson. Dr. Olson, marine biologist turned author ("Don't Be Such a Scientist," "Connection: Hollywood Storytelling meets Critical Thinking") and filmmaker ("Flock of Dodos"; The Shifting Baselines Ocean Media Project), will work directly with workshop participants as he guides them through his "Word, Sentence, Paragraph" model of storymaking to transform their science and experiences in science into narratives and stories that engage audiences and enhance communication.

Because workshop participants will be personally coached by Randy Olson on crafting their own narratives, participation is limited. Prospective participants will be asked to submit a "pitch" ahead of time to ensure that all participants are able to fully engage with the process. The pitch should consist of (1) YOUR STORY, a brief, one paragraph description of a story you

would like to work on during the workshop, and (2) YOUR INTEREST, one sentence describing why you want to tell this story. A wide range of story topics are being considered, including stories about topics in science, experiences as a researcher, and the life of a scientist. Story ideas can be for any media, and while the pitch should demonstrate the potential and value of the story, pitches will not be judged on their initial presentation. After all, that's what the workshop is for!

Selected participants will be notified in December, and **must agree** to (a) ATTEND Dr. Olson's keynote address on the evening of Friday, January 3, (b) ATTEND the WSP workshop from Noon to 1:30pm on Saturday, January 4, and (c) DOWNLOAD the WSP App for iPhone or Android and SUBMIT their WSP elements using the app prior to the workshop (or make arrangements with workshop facilitators for an alternate option). Dr. Olson has graciously agreed to make the app will be made available to participants as well all Meeting attendees free of charge.

SICB PAC will be accepting applications on the SICB website (<http://www.sicb.org/meetings/2014/wsp.php>) for this workshop through Dec 6, 2013. Direct questions to the SICB Public Affairs Committee (pac@sicb.org). SICB PAC encourages participation by a wide range of attendees, including scientists and science-interested participants at all levels of study and career. Pitches will be reviewed on a rolling basis, so applicants are encouraged to submit their pitches early but no later than 5 p.m. EST, 6 Dec 2013.

We look forward to seeing your pitches, and to hearing your transformed science stories in Austin!

GEORGE A. BARTHOLOMEW AWARD WINNER ANNOUNCED—DAN WARNER, UNIVERSITY OF ALABAMA BIRMINGHAM



Dan Warner, University of Alabama Birmingham, was selected as the 2014 Bartholomew Award winner and will give the Bartholomew Lecture on January 4, 2014 at 6 pm, followed by a social hosted by the Division of Comparative Physiology and Biochemistry (DCPB). Dr. Warner holds a B.S. degree in Animal Ecology from Iowa State University (1998) and a M.S. degree in Biology from Virginia Tech (2001). After receiving his Ph.D. from the University of Sydney (2007), he returned to Iowa State University as a postdoctoral researcher in the

Department of Ecology, Evolution and Organismal Biology. Starting in fall 2012, he is currently an Assistant Professor in the Department of Biology at the University of Alabama at Birmingham. Dr. Warner’s research seeks to understand the ecological and evolutionary processes that shape organismal responses to their environments across different life-history stages (from embryo to adult). His research uses lab and field experimental approaches and integrates aspects of ecology, physiology, genetics and behavior to empirically test theoretical predictions of adaptive evolution. His primary areas of interest are environmental sex determination, developmental plasticity, and maternal effects. His research uses reptiles as models to address these topics.

Congratulations, Dan!

See Dan Warner present the **BART LECTURE**, Saturday, Jan. 4, 2014, 7:00-8:00 p.m., Hilton Austin

LOU GUILLETTE—2014 BERN LECTURER



The 2014 Howard Bern Lecturer will be Professor Louis Guillette of the Medical University of South Carolina. Professor Guillette is one of the world’s leading figures in endocrine disruptor research. In 2010 he was awarded the prestigious Heinz Science Medal for his work in the area of environmental health, is a Fellow of the American Associa-

tion for the Advancement of Science, and one of only 30 Professors of the Howard Hughes Medical Institute. He is internationally recognized for his research in the field of reproductive endocrinology and developmental biology, having published over 300 papers and edited five books. Professor Guillette and colleagues have shown how environmental toxicants interact with the endocrine system of wildlife species and alter their development and reproductive health.

BERN LECTURE, Sunday, Jan 5, 2014, 7:00-8:00 PM, Hilton Autsin

CARL GANS AWARD WINNER ANNOUNCED— CHRIS CLARK, UNIVERSITY OF CALIFORNIA RIVERSIDE



It is our pleasure to announce that Chris Clark is the recipient of The Carl Gans Award, which is given in honor and memory of one of the great pioneers in comparative biomechanics who was also an active and energetic member of SICB. In that spirit, the award recognizes an outstanding young investigator for distinguished contributions to the field of comparative biomechanics. Like Carl Gans did before him, Chris Clark finds and solves fascinating functional and evolutionary problems in novel and innovative ways. Thanks to Chris

and his use of scanning laser Doppler vibrometry, we now know that hummingbirds hum at least in part because of the aeroelastic flutter of their feathers. Chris has made important progress in understanding the functional and behavioral consequences of possessing tails of different shapes, has begun to look at the energetics of courtship from a mechanical point of view, and, in a manner that Carl would have loved, has done much work on animals in the field. Chris is an outstanding young investigator and a worthy recipient of the Carl Gans Award.

*Mark Denny, Chair
Division of Comparative
Biomechanics*

MEMBERSHIP IN SICB REMAINS STRONG

The charges of the Membership Committee of SICB are to view regular monthly membership reports, to assess and report on observed patterns, to offer insight on patterns where possible and to suggest nominations for honorary memberships (we have 18 honorary members of SICB). October 2013 membership stands at 2929 members; 38% are in the Full and Emeritus Membership category, 9.7% Postdoctoral Members, 36% Graduate Student Members, and 15% Student-in-Training Members (see member categories in the [SICB Constitution](#)). We are happy to report that this year membership is up by 311 members over this time (October) last year; most of the new members are Graduate Student Members, followed by Student-in-Training Members (mostly undergraduates but also a few high school students). Overall growth in mem-

bership is up 12% since this time last year. Trends vary across divisions, with the greatest increases in the Divisions of Animal Behavior, Comparative Biomechanics, Ecology and Evolution, and Neurobiology (between 21% 23% over October 2012). Up and coming scholars are very well represented in SICB. Given the healthy representation of young scholars, our recommendation would be for incentives to retain and engage those young intellectuals.

Also note that the membership year for SICB has changed from a calendar year to April 1 through March 31. This change was made last January to include the membership year within the year that members register for the annual meeting. Dues for 2014 will not become due until after the January meeting in Austin.

*-Amy Johnson, Chair
SICB Membership Committee*

*Membership in
SICB may top 3000
in 2013!*



Starting this year, the 2014 membership year will begin April 1, 2014 instead of January 1, 2014.

Please add your teaching information to the bottom of your member profile! (<http://sicb.org> > Directory > Login > "Update your record.")



SOCIETY'S ANNUAL MEETINGS ARE ON A SOUND FINANCIAL BASIS—TREASURER'S REPORT, KAREN MARTIN

The Annual Meeting of the Society is one of our most important endeavors and one of the most expensive to produce. Balancing the revenues and expenses takes careful planning, enthusiastic participation by the membership, and a bit of prognostication.

This year, the meeting was held in San Francisco, an appealing city that was made even more attractive by the competitive hotel rates negotiated in advance by our management company. Attendance was high, the symposia and contributed program were outstanding, and revenues from conference and exhibitors fees reflected this at \$441,505. Expenses were also high, particularly for audio, food for receptions, and union labor for the poster boards, totaling \$416,094. Fortunately the balance for the meeting was positive at \$25,410. In addition to paying for the meeting itself, these revenues help with the operating expenses of the society, as those are not fully covered by the annual dues.

The alignment of the membership year has now been implemented so that it is more in sync with the time for abstract submittal for the upcoming meetings. This year, everyone who paid SICB dues for 2013 can attend the 2014 meeting in January in Austin, TX on that 2013 membership. The new member year starts April 1, 2014. This change has not negatively affected the operation of the Society and seems to be positively impacting the membership numbers.

The journal Integrative and Comparative Biology continues to flourish under the leadership of Hal Heatwole. The journal provided slightly more than \$300,000 during the past fiscal year to SICB. These

funds are used for the operating expenses of SICB. With the annual meeting and the journal, the society was able to operate with a balanced budget for Fiscal Year 2012-13.

Student Support

At the 2013 meeting in San Francisco, student support to supplement hotel or registration expenses was budgeted at \$45,000 and then increased to \$60,000. The Charlotte Mangum endowment provides funds for student travel. For the 2014 meeting, \$10,775 is available from the endowment, leaving a large sum to be completed from operating funds. SICB is strongly committed to student support and career development. In recent years, all students that applied for travel awards and met the criteria have been given support. However, if demand outpaces the supply of funds, a more selective approach may be implemented.

Additional support to students from SICB includes Grants In Aid of Research (GIAR) and the Hyman Scholarship Fund for research or coursework on invertebrates. The Fellowship of Graduate Student Travel (FGST) provides funds for research travel to field sites and laboratories for graduate students. Meeting registration fees of Full Members subsidize the much lower registration fees for students.

Donations Report

As a nonprofit organization SICB has a narrow margin in the budget between expenses and revenues. Donations allow more support to be provided to student members and provide for expenses of speakers at special lectures benefitting a broad

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“SICB is committed to broadening participation in SICB and the life sciences.”



BROADENING PARTICIPATION IN AUSTIN AND BEYOND — BROADENING PARTICIPATION COMMITTEE

First, we would like to welcome our new member, Kendra Greenlee as well as our ex-officio members Jon Harrison, Sean Lema, and Peter Wainwright. We would also like to thank Peggy Biga, and Gregory Florant for their past work on the committee, it was much appreciated.

Michele Nishiguchi, Brian Tsukimura, and Cheryl Wilga attended an invitation-only Broadening Participation meeting in Arlington, VA, sponsored by the Council for Undergraduate Research (CUR) from Sept. 8-9, 2013. The meeting was facilitated by Dr. Mary Crowe, who is the lead PI for the NSF BP-funded grant to CUR. The purpose of the meeting was to have the three currently funded BP grantees (CUR, American Physiological Society (APS), and The Society for Developmental Biology (DEB)) present their ongoing work in broadening participation in their societies. NSF Division of Integrative Organismal Systems (IOS) representatives were also present, and updated the group on funding opportunities that may be available next year for societies. There was one short brainstorming session that provided a logic framework on how to develop a program to suit BP needs in IOS fields for students in K-12, undergraduate, and graduate levels of study. There may be an RFA announced next year, but this is pending budget (!!!) and funds available through NSF-IOS. Cheryl (cwilga@uri.edu), Brian (briant@csufresno.edu), and myself (nish@nmsu.edu) will probably be working on this proposal so please send us any thoughts, suggestions, or insights that help us address issues for increasing diversity within SICB. All three of us will be in Austin this next year, so pull us aside and give us your ideas.

The Broadening Participation Committee sponsors **two workshops** at each annual SICB meeting, based on suggestions from previous years Broadening Participation Travel Award applicants. The first workshop (noon, Jan. 4th) that the BPC will be sponsoring at the 2014 annual meeting is: "Recruitment strategies to obtain a diverse and thriving lab/department" led by Rebecca Calisi-Rodriguez (Barnard College), Cheryl Wilga (University of Rhode Island), and Michele Nishiguchi (New Mexico State University). This workshop is geared towards members who are interested in how to increase the diversity in their home departments as well as throughout their university. The panel will provide discussion topics and will offer insight into the process of maintaining diversity throughout the workplace. The second workshop (noon, Jan. 6th) is entitled: "Writing grants and manuscripts in a timely manner" led by Brian Tsukimura (Fresno State), Peggy Biga (University of Alabama at Birmingham), and Heather Bleakley (Stonehill College). This BP-sponsored workshop is meant to provide a toolkit to aid writing productivity and time management skills. Presenters will provide information from direct experiences as well as information from a recently sponsored NSF workshop/retreat for early stage faculty from under-represented groups in biology.

The Broadening Participation Travel Award call for applications has just ended (October 1st) and we have 43 applications that are currently in review. We hope to have decisions on awards by the end of the month so that applicants can decide on attending based on whether they are funded or not. Travel Awards will be presented to

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*Broadening
Participation
Workshops
in Austin*

*1. Recruitment
strategies*

*2. Writing grants
and manuscripts*

*Starting this year, the
2014 membership year
will begin April 1, 2014
instead of
January 1, 2014.*



BROADENING PARTICIPATION IN SICB—CONT.

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recipients at the Broadening Participation Social during the annual meeting. So, be sure to come to the social and enjoy the refreshments while you chat with your SICB colleagues. We welcome the participation of all SICB members and look forward to hearing your comments and suggestions for broadening participation in our society.

Broadening Participation Events for the 2014 Meeting in Austin, TX:

- ◆ Mentor-Mentee meeting hosted by Michele Nishiguchi. Friday, Jan. 3rd, 6-7:30 PM.
- ◆ Committee on Broadening Participation meeting, Saturday, Jan 4th, 7-8 a.m.
- ◆ Workshop - "Recruitment strategies to obtain a diverse and thriving lab/department" organized by Rebecca Calisi-Rodriguez, Cheryl Wilga, and Michele Nishiguchi, Saturday, Jan. 4th, Noon -1:30 p.m.
- ◆ Workshop - "Writing grants and manuscripts in a timely manner" hosted by Brian Tsukimura, Pegga Biga, and Heather Bleakley, Monday Jan. 6th, Noon - 1:30 p.m.
- ◆ Diversity Social hosted by BP committee on Monday night, Jan. 6th at 8 - 10 p.m.

SICB FINANCES—CONT.

(Continued from page 6)

spectrum of the membership. Donations can be earmarked for any of the funds of the Society, or given unrestricted. Disbursements are calculated at 4% of the rolling 5-year average to maintain the principal. In fiscal year 2012-13, \$15,720 was donated to SICB, spread over 11 of the 12 funds. FY 2013-14 started July 1, and to date, \$200 has been

received, split over 4 of the funds. The **Moore Fund** provides support for the Moore lecture at the end of the Annual Meeting, and is the fund that the Executive Committee has targeted for attention this year. Please consider a donation when you register for the meeting this year, especially during this extended membership year.

New Editor Search for Physiological and Biochemical Zoology

The SICB-sponsored journal Physiological and Biochemical Zoology, published by the University of Chicago Press, is searching for a new editor. After 5 years editors Kathleen Gilmour and Patricia Schulte are stepping down. The journal is sponsored by SICB through the Division of Comparative Physiology and Biochemistry. Proposals are requested by 14 Feb 2014. Further details are found in the [DCPB newsletter](#) or by going to <http://www.journals.uchicago.edu/PBZ>.

PROPOSED NEW SICB DIVISION OF ECOIMMUNOLOGY AND DISEASE ECOLOGY

Members of SICB have banded together to consider forming a new division within SICB to be called the Division of Ecoimmunology and Disease Ecology. The SICB Executive Committee will consider this proposal early in the annual meeting in Austin. A divisional business meeting is planned and will be held on **Jan 6** in the evening in Austin. Check the meeting program for details. Contact Lynn B. "Marty" Martin (lbgmartin@usf.edu).

Outstanding Meeting Program for Austin 2014 — Jon Harrison SICB Program Officer

SICB will be creating its own soundtrack in Austin, TX this year. Live music, great food and drink are only a few minutes walk from the door. The hotel is modern and spacious, and the vast majority of our meeting rooms will be on one floor.

Our upcoming meeting features major lectures by Randy Olson, Dan Warner, Louis Guillette and Ross Nehm and ten outstanding symposia. There will be workshops on communicating science, achieving a diverse lab/department, creating a web presence, NEON, working with parasites, writing grants and teaching evolutionary biology. It will be our second largest meeting ever, with over 1580 abstracts. Your Program Committee (pictured below), with able assistance from Lori Strong and Jennifer Rosenberg, have been hard at work reading your titles and abstracts, and programming coherent sessions with minimal conflicts.



Society-wide

The cell's view of animal body plan evolution; Organizers: Deirdre Lyons, Mansi Srivastava and Mark Martindale

Epigenetics: molecular mechanisms through organismal influences; Organizer: Warren Burggren



The Program Committee assembles the annual meeting sessions.

Grand Challenges symposium:

A new organismal systems biology: how organisms walk the tightrope between stability and change; Organizers: Dianne Padilla, Billie Swalla, Brian Tsukimura

Divisional Symposia

DEE, DAB, DCPB: Stress, condition and ornamentation; Organizer: Geoffrey Hill

DCPB: The micro and macro of nutrient effects in animal physiology and ecology; Organizer: Robin Warne, Dan Hahn

DEDB, DCE, DAB: Adaptation or developmental constraint? Unit-ing evolutionary theory and empirical studies; Organizer: Haruka Wada, Kendra Sewall

DCE, DAB, DCPB: Methods and mechanisms in ecoimmunology; Organizers: Cynthia Downs, Jim Adelman; Greg Demas

DCB, DIZ, DVM: Shaking, drip-

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Book your hotel room and plane soon to get the best deals, and don't miss the early registration deadline, Dec. 6!!! As you plan your trip, be sure to stay for the last day. In addition to two symposia, we have the Moore lecture and a fabulous end of meeting party.



Symposia. More details at:
<http://www.sicb.org/meetings/2014/symposia/index.php>



SICB is especially interested in boosting donations to the John A. Moore Lectureship Fund.

The Moore Fund supports the John A. Moore Lecture, a major presentation on education at each annual meeting.



OUTSTANDING AUSTIN 2014 PROGRAM

(Continued from page 9)

ping and drinking: surface-tension phenomena in organismal biology; Organizers: David Hu, Rachel Levy, Lydia Bourouiba
DVM, DNB, DCB, DAB: Terrestrial locomotion: Where do we stand, where are we going?; Organizers: Richard Blob, Tim Higham
DAB, DIZ, DNB: Parasitic manipulation of host phenotype, or how to make a zombie; Organizers: Kelly Weinersmith, Zen Faulkes



FALL LEAVES—CONT.— BY BILLIE SWALLA

(Continued from page 1)

was the USA government shutdown, due to politicians in the House of Representatives refusing to do the jobs that they were elected to do. I was in France during the shutdown and it was frankly embarrassing to try and explain our USA government. Our politicians are gambling away the lives of others and putting scientific research in the United States in peril. What happened to compromise, meetings with the opposition, finding that difficult solution to a complex problem? This shutdown was very bad for the United States, it was bad for science, and it was bad for our children to see this terrible representation of how grown-ups solve problems. We all deserve better. Remember to VOTE every chance that you get. Let's show that we in the USA are problem solvers!

Fortunately, we've got a lot of terrific leaders in SICB, and the society is thriving due to the efforts and energy of many people. I love being involved with such a wonderful group of scientists and educators. I especially want to thank the SICB Officers for their time and insights, as they are a terrific and interactive group. Please thank these harried individuals that you'll see in Austin, wearing the ribbons on their badge,

that proclaims them a SICB officer. Trust me, they'll appreciate it and you'll be happy that you thanked them!

So, what's my biggest challenge for SICB in the 2013-14 year as SICB President? **Finding a new editor for the society's journal *Integrative and Comparative Biology (ICB)*, no question about it.**

EDITOR SEARCH

Current *ICB* Editor **Hal Heatwole** has been in this post since 2006. Hal is well into his second five year term and wishes to step down when his appointment ends in January 2016. Under Hal's leadership the journal has thrived. Strong symposia have been published in a most timely way, the journal's reputation has grown and the impact factor is up. So we are starting now to fill his shoes, which will be a tough job.

Can you help? We are currently putting together an *Integrative Comparative Biology* editor search committee that we hope has many people who have been an editor for other journals and knows what this sort of commitment entails. If you have the time and energy to help us search for a new *ICB* editor, please let me know. If you are looking for the next challenge in your career and feel that being editor would be an interesting step for you, please contact me to discuss this further.

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*“Experiences—Part 15
in a series
of articles about the
research experiences
of members of SICB.*

*“SICB members
like a good story about
an expedition,
a field experience,
a lab experiment
or another
researcher.”*



DANCING LESSONS FROM GOD —MARTIN E. FEDER

(Continued from page 1)

Mrs. Robins incredibly set aside her lesson plan for an entire week and taught us the fundamentals of zoology – the take-home lesson being that reproductive mode is phylogenetically conserved. I was transfixed. As a rising second-grader I acquired a library card and then read everything I could understand about animals. In hindsight, this experience augmented what was to become my research skillset in ways not otherwise achievable. Be careful whom you teach and what you teach them; you never know.

My brother Richard made me a thermal biologist several years later. As a budding biologist I captured and maintained many amphibians and reptiles, soon discovering that appropriate temperature was critical to their health. This



In a cloud forest from near Volcan Tajumulco in Guatemala in 1975. As the Experiences piece suggests, the actual temperatures experienced by tropical salamanders and whether thermal diversity was sufficient for them to thermoregulate was then unknown. At that time, body temperatures of salamanders were assessed by placing a Schultheis thermometer's bulb (a small quick-reading thermometer) underneath the salamander.

We have much to learn from (and teach) one another. The exact lesson, however, is highly unpredictable, often unintended, and sometimes not obvious for years.

came to a head when my brother and I were each given live turtles (*Chrysemys*). Mine thrived; his did not. Richard asked me what to do about this, and I suggested he allow his turtle to feed in warm water. He then placed it and some food in a sink and turned on the hot water tap – which of course initially ran cold. Unfortunately for the turtle and, in hindsight, fortunately for my scientific future, at that moment a football game began in our back yard, which Richard joined. By the time I discovered the turtle, it had exceeded what I was years later to learn was its "lethal temperature" (Cowles and Bogert, 1944). Arguably much of the research I have done since then has explored adaptation to such thermal stress.

Dave Wake oriented me to the tropics: When I joined Paul Licht's lab at UC Berkeley for graduate studies, the departmental culture welcomed and encouraged broad interaction. Dave was one individual I soon encountered. He was planning a collecting trip to Guatemala and Mexico, and wondered if I might join it. I thus saw first-hand how tropical plethodontid salamanders apparently violated biological 'rules' of restriction to small size and cool temperatures. This observation fundamentally altered the research I had been planning. Equally importantly, the expedition was both an unexpected lesson in research group dynamics and culturally an eye-opening experience for one who had never traveled outside of the US.

Sue Lindquist taught me to fly. Sue is now a distinguished senior

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DANCING LESSONS FROM GOD — MARTIN E. FEDER

(Continued from page 11)

professor at MIT, but we first met as junior colleagues and then as fellow parents at Chicago. My previous research examined tissue to whole organism-level phenotypes of amphibians and reptiles. It was time for a change, and one day I surprised Sue by asking her if I could spend a year in her lab and learn “molecular biology” in a system of her choice. Coincidentally her group had just identified a novel heat-shock protein (Hsp104) that was critical for thermal tolerance in yeast and apparently phylogenetically widespread – although as-yet unknown in *Drosophila*. She suggested I find the *Drosophila* homologue. As the *Drosophila* genome has subsequently revealed, the search was doomed to failure – but it did teach me the basic toolkits of molecular biology and fly work, and project my research in new directions with new colleagues.

Other equally important influences are too numerous to mention. Almost everyone I’ve met in science – many in SICB – has influenced me in some way¹. Indeed, I accepted nomination to the SICB presi-

dency to pay back these contributions to my career.

These vignettes have a common and simple theme: we have much to learn from (and teach) one another. The exact lesson, however, is highly unpredictable, often unintended, and sometimes not obvious



On a boat off the coast of Cebu in the Philippines in 1978. To do reproductive, genetic, and physiologic analyses on sea snakes, we needed snakes. Here villagers of Jaguliao have been recruited to collect snakes on our behalf.

for years. Our late past-president George Bartholomew has emphasized (1982) how important both serendipity and the lessons our trainees teach us can be for one’s

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¹...and sometimes in the most unexpected of ways. In 1994 (i.e., the pre-PowerPoint era) I heard Jared Diamond speak on optimality in biology. He used an imaginary experiment with the ‘safety factor’ of elevator cables to explain apparent biological overdesign. “Elevators” seemed familiar, but I could not recall how. I was to speak on a counterpart theme the next day, and had prepared 35mm slides for what would have been a pedestrian talk. As fate would have it, I was sharing a room with Ray Huey, whose apnea obstructed both his sleep and mine. As time passed I began to ponder Jared’s elevators. By the dawn’s early light it came to me that Jared was

not the first to perform thought experiments on elevators; Albert Einstein had likewise used elevators to explain frames of reference and relativity. I wondered if I could combine and exploit these metaphors. By the time Ray arose I had repurposed my slides to explain how optimality/overdesign cannot not be distinguished from historical constraint without understanding the underlying evolutionary frame of reference and processes, and evolvability. The talk was outrageous, and 20 years later those in the audience still speak of it. I am grateful to Ray for awakening my interest (and for comments on the present essay).

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DANCING LESSONS FROM GOD — MARTIN E. FEDER

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scientific creativity. I violently agree, but would expand the description of one's most valuable educators to include the breadth of academia (and many outside it). I suggest that one's progress in science is a direct function of the number and intellectual diversity of those with whom one interacts. SICB itself is already a powerful engine for such education, and could be even more so.

As a 'faculty dean' these days, I mainly experiment on faculty responses to stress (rather than amphibians' or flies'). In so doing I often reflect on what keeps us from learning more from one another. I suggest two major attitudinal causes; first, academic science is perceptually hierarchical. In our system, colleagues judge the science, funding, compensation, stature, and appointment and promotion of colleagues – and despite their best efforts, those who judge are no longer quite considered colleagues by most who are being judged. I have come to know many individuals at the higher levels of the academic hierarchy who, despite their titles, honors, and power, are mostly like you and me. Most strive to be helpful, and are horrified when unintended intimidation leads others not to ask for help. Many elsewhere in the hierarchy seem not to grasp this fact or are still too intimidated to ask. Second, ours is a culture obsessed with expertise. Hence admitting lack of expertise, while crucial for learning and career development, is psychologically devastating for many, who prefer ignorance to exposure. For example, I was once the SICB delegate to a workshop intended to promote the use of functional approaches. Many of the participants

confessed that they fully understood the value of such techniques and had local colleagues who could teach them, but could not bring themselves to approach their colleagues for "fear of looking stupid." Indeed, I attribute much of my own accomplishment to willingness to look stupid in front of knowledgeable colleagues and being very good at it. Big Bird of *Sesame Street* had it right: "There's no such thing as a stupid question."

These same attitudes, exacerbated by different languages and assumptions (google *The Dancing Fool* by Kilgore Trout [in Kurt Vonnegut's *Breakfast of Champions*]), often also seem to impede interaction among different scientific cultures and traditions.

The upshot of these attitudes is that we too often limit ourselves. Remedies are elusive. Commendably, many academic institutions and funding agencies (e.g., National Science Foundation's IGERT) have experimented with novel strategies of collaborative interchange and training. The underlying attitudes themselves are deeply seated in our academic culture, however, and, as it is said, "culture eats strategy for breakfast."

As Vonnegut wrote in *Cat's Cradle*: "Unexpected travel suggestions are dancing lessons from God." As we traverse the scientific landscape, our open-ness to (if not active pursuit of) the unexpected 'suggestions' of others is a powerful source of progress. At least it has been for me.

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*"Unexpected travel
suggestions are dancing
lessons from God."*

*Kurt Vonnegut in
Cat's Cradle*

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DANCING LESSONS FROM GOD — MARTIN E. FEDER

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FALL LEAVES—CONT.— BY BILLIE SWALLA

(Continued from page 10)

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Please consider giving some extra donations to your favorite fund when you renew your dues. Your contributions are carefully managed and used to support SICB activities, and we are grateful for them. We would like to concentrate on increasing donations to our Moore fund this year, in order to sponsor Educational speakers. If you would like to get involved with this aspect of SICB, please let me know, we can use your help.

ON TO WEST PALM BEACH

Finally, plans are underway for the meeting next year in West Palm Beach, Florida. We have chosen twelve interesting symposia and are busy getting the details nailed down, helping the organizers look for funding, and otherwise be sure that we have a dynamite program. We have some of the best symposia and symposia organizers to be found, and I would like to thank all of those involved in the effort, but especially our Program Officer-Elect, Sherry Tamone. Sherry is a **national treasure** and if you don't know her yet, be sure to look for her in Austin.

Enjoy the SICB Newsletter and we'll see you in Austin where there will be warmer, sunny weather! Warm wishes for the Holidays to you and your families!

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