



## Division of Comparative Physiology & Biochemistry

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### Message from the Chair

Don Mykles ([Chair.DCPB@sicb.org](mailto:Chair.DCPB@sicb.org))



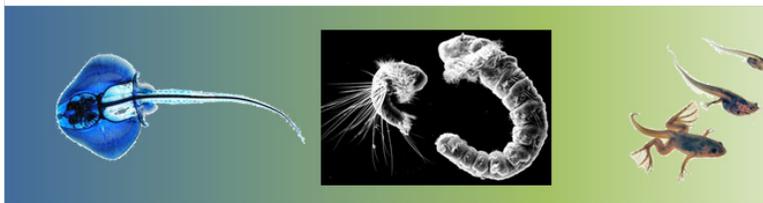
Don Mykles

The division is doing very well, due in large part to the dedication of its officers and members. Wes Dowd and Deborah Lutterschmidt are outstanding candidates for division secretary. I encourage you to review their statements and participate in the election. I thank the nominating committee, which consisted of Stephen Secor (Chair), Rich Londrville, and Kristin O'Brien. Jonathon Stillman began his term as Divisional Program Officer, succeeding Kristin O'Brien. Divisional Chair-Elect Stephen Secor is stepping down as chair of the Bart Award Committee after serving 5 years. Doug Altshuler is also cycling off after 4 years. Sheila Patek, Adam Summers, and Art Woods will remain on the committee.

The 2013 meeting was our largest ever in terms of attendance and numbers of contributed papers. The division co-sponsored 4 symposia and special contributed paper sessions in honor of Bruce Sidell and Ken Nagy. Allison Sweeney, gave a captivating Bartholomew Lecture. The division thanks John Lighton, Sable Systems International, for his generous support of the award. In order to reach a larger audience, we are now asking the Bart Award winner to submit a review based on their lecture for publication in Integrative & Comparative Biology. Allison's paper will be the first of an annual series. Stephen Secor (Chair), Doug Altshuler, Sheila Patek, Adam Summers, and Art Woods served on the selection committee. I want to thank coordinator Harry Itagaki and the DCPB members who served as judges for their work on the best student presentation competition. Congratulations go to Katie Marshall for Best Oral Presentation and Robert Kobey for Best Poster Presentation. The awards are named in memory of Bruce Sidell.

The 2014 meeting program is set and DCPB will be supporting 5 symposia. Austin is a great venue. The 2015 meeting will be in West Palm Beach. I encourage you to submit a proposal for a symposium. It's never too early to start planning. Be sure to work with Jonathon Stillman in developing your ideas. The deadline for symposium proposals is August 30, 2013.





### Message from the Chair-Elect

Stephen Secor ([ChairElect.DCPB@sicb.org](mailto:ChairElect.DCPB@sicb.org))



Stephen Secor

I want to thank the DCPB members for electing me Chair-Elect. I look forward to serving the division as Chair and continue the efforts of previous chairs in strengthening the division. For this year, I will enjoy working with Don Mykles and the rest of the Executive Committee as we prepare for the 2014 meeting in Austin.

### Bruce Sidell DCPB Best Student Presentation Competition Award Winners

Harry Itagaki, DCPB Student Presentation Judging Coordinator

Bruce Sidell was a distinguished scientist, dedicated mentor, dog lover, certified curmudgeon, and long-time member of our division. Sidell demonstrated conclusively that metabolic pathways preferentially oxidize some substrates over others, that this substrate preference can change with cold acclimation, and that cold-bodied fishes typically prefer the same substrates (Sidell et al., 1987). Sidell also demonstrated that the lipid accumulation that is typical of cold-bodied fish is not simply a fuel depot, but instead enhances diffusion of oxygen across the cell (Desaulniers et al., 1996). Toward the end of his career, Sidell focused on the Antarctic fishes that vary in myoglobin and hemoglobin expression (from robust to absent). His lab overturned the dogma that myoglobin was not functional at low body temperatures, and definitively established a relationship among the degree of heme protein expression, nitric oxide production, and capillary density (Beers et al., 2010; Sidell and O'Brien, 2006). Finally, as the consummate organismal biologist, Sidell investigated the predicted effects of global warming on the iconic icefish.



Harry Itagaki



Bruce Sidell

In recognition of Bruce's contributions to our Division and his untimely passing, DCPB sponsored a special session at the San Francisco meeting (see below) and named this year's student presentation competition in his honor.

The Bruce Sidell DCPB Student Presentation Competition at the Annual Meeting in San Francisco in January had 89 entrants, who were judged by 47 dedicated DCPB members. There were many good presentations, both oral and poster by the students who were judged. The winners are:

Katie Marshall, University of Western Ontario, was selected for the Bruce Sidell DCPB Best Student Oral Presentation for her talk on "The goldenrod gall fly's liquid little secret: 3-acetyl-1,2-diacyl-sn-glycerols are associated with natural survival of intracellular freezing in *Eurosta solidaginis*."

Robert Kobey, Indiana University, was selected for the Bruce Sidell DCPB Best Student Poster Presentation for his poster on "Genetic mechanisms of cold tolerance through increased desiccation resistance in *Drosophila melanogaster*."

Please join me in congratulating both these rising scientists! I hope you'll be joining us in Austin. Please consider helping us in the judging there, as the number of entrants has been steadily increasing!

The winner for best oral presentation is Katie Marshall. Katie received her B.Sc. in Biology from Acadia University in 2003, and is currently completing her PhD (supervised by Brent Sinclair) at Western University in London, Ontario. She studies the physiological and fitness consequences of repeated low temperature stress in a variety of insect species including both chill susceptible models like *Drosophila melanogaster* and freeze tolerant species such as the woolly bear caterpillar *Pyrrharctia isabella*. The work she presented at SICB 2013 focused on an unexpected finding during her work on the goldenrod gall fly *Eurosta solidaginis*—the accumulation of large quantities of an unusual storage lipid (acetylated triacylglycerols) that seemed to be associated with the freeze tolerance of the species.



Katie Marshall



Robert Kobey

Robert Kobey is the winner of the 2013 award for best poster presentation. Robert received his B.S. in Biochemistry in 2009 from the University of Nevada, Las Vegas. He currently studies cold tolerance of *Drosophila melanogaster* with Dr. Kristi Montooth at Indiana University. At SICB, Robert presented his research on desiccation during cold exposure in *D. melanogaster*.

Henen, Gwen Bachman, Hugh Ellis, and Isabelle Girard presented, respectively, on horned lizards, tuna, tortoises, box turtles, scrub jays, and kit foxes. The culmination of this meeting was the sincere expression of gratitude to Ken for his influence on our careers and his impact in animal physiology.

**Special Session in honor of Bruce Sidell**



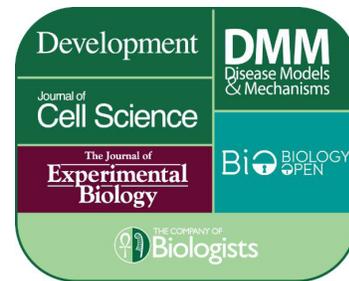
Sidell's students and colleagues honor his contributions at a special session

**Special Session in honor of Ken Nagy**



Ken Nagy (far right) with colleagues

Colleagues, students, and friends joined in San Francisco for a Special Session to honor Ken Nagy for his research, training, and insight in animal physiology, energetics, and conservation. Richard Tracy kicked off the session with an introduction of Ken's contributions to the study of animal energetics and water balance. Ken followed by reflecting that in possessing the "ah ha" trait, he has been inspired to discover and understand the hows and whys of animal adaptations. Many in the audience certainly felt that they share that trait with Ken. The following session speakers; Dan Costa, Bill Karasov, Stephen Secor, John Speakman, Dan Clemens, Karen Martin, Roger Anderson, Ray Huey, Liza Hazard, John Lighton, David Goldstein, and Joe Williams presented on a broad array of studies in animal and human energetics and water flux, with frequent pictures, stories, and tributes of Ken. Following a very filling and appetizing lunch in China Town, we returned for the poster session, where Tracey Brown, Adrian Gleiss, Brian



Bruce Sidell's students and colleagues from around the world gathered at the San Francisco for a special session in his honor. Jody Beers, Lisa Crockett, Stuart Egginton, Bill Detrich, Bill Driedzic, Theresa Grove, Steve Kinsey, Rich Londraville, Tim Moerland, Kristin O'Brien, Ken Rodnick, and George Somero all spoke with a mix of excellent science, good humor, and appreciation for Sidell's contributions. It was also an acknowledgement of Bruce's too-soon passing, captured by Lisa Crockett's moving poem (below) and many 'Bruce stories'. The session was sponsored by DCBP and The Company of Biologists (publisher of J. Exp. Biology). JEB also sponsored a dinner for the speakers, attended by the speakers, Sidell's friends (Nora Terwilliger) and Kathryn Knight of JEB. All involved in this special session that our sponsors from DCBP, The Company of Biologists, and JEB.



**Family Ties** (by Lisa Crockett)  
(For the Special Session Honoring Bruce Sidell, Society for Integrative and Comparative Biology, San Francisco, January 2013)

Without sharing any genes  
or moments from childhood,  
my siblings and I carry on a tradition.  
We are related by a mentor,  
and a desire to understand temperature  
in the lives of animals  
whose brains are perpetually colder  
than the leafy bottom of an ice-covered pond.

We are an academic lineage  
taught to recognize subtle changes,  
which may be enough  
to turn temperature's glance the other way.  
We are proud of our particular ancestry.

Icefishes glide past us  
and we can't help but think  
of synchronized swimmers.  
He is there, watching too.  
Some of the fish have mouths so large  
we wish they would choose to swallow  
the warming which is inevitable.

He took time  
to edit every phrase necessary  
with careful handwriting in red ink.  
We also helped us  
appreciate how the icefish devised twists  
that would impress a cardiac surgeon.  
The ventricle of the exceptionally large heart  
propels great volumes of cold blood  
through large bore vessels  
eventually to capillary networks  
more intricate than the most delicate lace.  
The mitochondria too have elaborated  
like train tracks in a child's imagination.  
This way oxygen is required  
to make only a short trip.  
Oxygen slips easily  
inside the cell along membrane routes  
made up of highly unsaturated phospholipids,  
fluid even in ice-cold bodies  
in which diffusion would otherwise be arduous.

It is natural to have favorites among the Channichthyidae.  
He liked *Dacodraco*;  
others like the blackfin crocodile fish, the "rastros,"  
the mackerel icefish, the Georgi girls

whose ancestors all traded in their red blood for blood  
3 to 4 million years ago.  
No other animal with a backbone can boast this distinction.

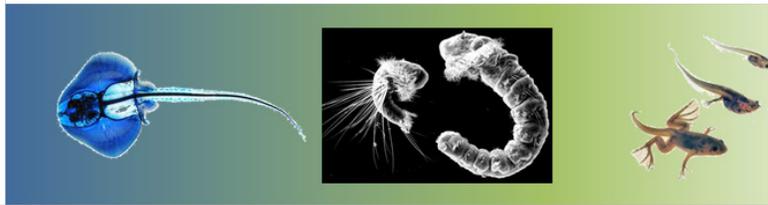
Waves are always cresting  
on the deep and patient Southern Ocean.  
It doesn't end.  
Someone, perhaps related, will keep learning the physiology.  
We know how a clock ticks loudest in a darkened room.  
Who doesn't want to extend life?

### Call for Nominations -2014 Bartholomew Award- San Francisco

Each year the Division of Comparative Physiology and Biochemistry awards a prize to a young investigator for distinguished contributions to comparative physiology and biochemistry or to related fields of functional and integrative biology. The formal title for this award is "The George A. Bartholomew Award." Eligible candidates are those who have completed their doctorate within the past seven (7) years (2006 or later) and who are members of the SICB. Candidates for this award may apply themselves or they may be nominated; all candidates will be evaluated equally. Applicants should submit a short description of their work, selected reprints, and a curriculum vitae to the Art Woods, Chair of the Award Committee ([art.woods@mso.umt.edu](mailto:art.woods@mso.umt.edu)). Three letters of recommendation should be solicited from colleagues who know of the nominee's work. Nominators must arrange for these same materials to be sent to the award committee chair, except with only two additional letters of recommendation. The person chosen as the recipient of this award will be invited to present a special address at the 2014 SICB Meeting in Austin, TX. In addition to a cash prize, the recipient will be reimbursed for expenses incurred while attending the meeting. Again, send your materials to Art Woods ([art.woods@mso.umt.edu](mailto:art.woods@mso.umt.edu)). The deadline for nominations is Friday, 23 August 2013.

### Message from the Divisional Program Officer Jonathon Stillman ([DPO.DCPB@sicb.org](mailto:DPO.DCPB@sicb.org))

Thanks to everyone who participated in the 2013 annual meeting in San Francisco. The meeting was a great success, and was the biggest SICB to date! Over 2100 attendees presented over 1600 abstracts at the meeting. DCPB supported the SICB-wide symposium "Vertebrate Land Invasions-Past, Present and Future," and symposia "Hormone-Mediated Sex Ratio Adjustment in Vertebrates," "Coping with Un-



Jonathon Stillman

certainty: Integrating Physiology, Behavior and Evolutionary Ecology in a Changing World," and "Physiological Responses to Simultaneous Shifts in Multiple Environmental Stressors: Relevance in a Changing World," a symposium that generated two full days' worth of contributed papers in complementary sessions. DCPB was also honored to support a special session in remembrance of Bruce Sidell. Science magazine reporter Elizabeth Pennisi gave the conference some great press, highlighting work in biomechanics, neurophysiology, and functional morphology. Bartholomew Award winner Allison Sweeney presented an absolutely fabulous talk integrating the physics of light with biological adaptations to sense and capture that light in squid, clams and corals. If you want to nominate an early Ph.D. integrative biologist for the Bartholomew Award, see the guidelines above.

We are looking forward to the 2014 meeting in Austin, Texas, Jan 3-7 at the Hilton Austin in the heart of downtown and adjacent to the Austin Convention Center (<http://www.sicb.org/meetings/2014/>). Though I've never been to Austin, I've heard great things about the city, and a quick scan of Wikipedia's page on Texas' capital suggests that SICB-goers will feel right at home there amongst Violet Crown Austinites doing their best to Keep Austin Weird while in The Live Music Capital of the World ([http://en.wikipedia.org/wiki/Austin,\\_Texas](http://en.wikipedia.org/wiki/Austin,_Texas)). DCPB is co-sponsoring a society-wide symposium "Epigenetics: molecular mechanisms through organismal influence" organized by Warren Burggren which aims to increase awareness of epigenetic regulation and the epigenome across SICB membership. DCPB's solely-supported symposium is "The micro and macro of nutrient effects in animal physiology and ecology," organized by Robin Warne and Dan Hahn; the symposium aims to capitalize on the immense recent interest in ecoimmunology and nutritional pharmacology by linking these interests with the central importance that both micro and macronutrients have on animal physiology and ecology. DCPB is co-sponsoring the following symposia: "Stress, condition and ornamentation" organized by Geoffrey Hill that will focus on the integration of research on sexual selection and stress physiology, "Adaptation or developmental constraint?

Uniting evolutionary theory and empirical studies" organized by Haruka Wada and Kendra Sewall, and "Methods and mechanisms in ecoimmunology," organized by Cynthia Downs, Jim Adelman, and Greg Demas that will highlight physiological mechanisms underlying immune responses and present new technologies for studying those responses. If you are interested in submitting papers in a complimentary session to any of these symposia, you might want to contact the organizers.

Even further ahead, now is the time to start thinking about organizing a symposium for the 2015 Annual Meeting in West Palm Beach, Florida. The deadline for submitting symposium proposals is August 30, 2013 (<http://sicb.org/meetings/2015/callsymp.php>), but you should start sooner than that to discuss your symposium ideas with the DCPB Program Officer (yours truly), and the SICB Program Officer-Elect, Dr. Sherry Tamone ([ProgramOfficer.Elect@sicb.org](mailto:ProgramOfficer.Elect@sicb.org)).

Additional upcoming meetings that may interest DCPB members include the following:

- Experimental Biology (EB) meeting in Boston, MA (April 20-24, 2013). <http://experimentalbiology.org>
- Society for Evolutionary Biology (SEB) 2013 Annual Meeting in Valencia, Spain (July 3-6, 2013). <http://www.sebiology.org/meetings/Valencia/Valencia.html>
- International Union of Physiological Sciences (IUPS) meeting in Birmingham, UK (July 21-26, 2013).
- IUBS 5th International Symposium of Integrative Zoology, Beijing China (June 25-28, 2013). <http://isiz5.csp.escience.cn/dct/page/1>
- XIth SCAR Biology Symposium (Antarctic Research), July 15-19, 2013, Barcelona Spain. <http://www.icm.csic.es/XIthSCARBiologySymposium/>
- APS Intersociety Meeting in Comparative Physiology 2014. Details are now being worked out for the next meeting – tentatively set for autumn 2014.

Finally, thanks to Kristin O'Brien for her terrific work as DCPB Program Officer over the past two years.



### Message from the DCPB Student/Postdoctoral Affairs Committee Representative

Chris Slay ([DPO.DCPB@sicb.org](mailto:DPO.DCPB@sicb.org))

Greetings colleagues,



Chris Slay

First of all, it was a great pleasure to interact with so many of you at our meeting in San Francisco. That meeting was a massive success on many fronts, and it is always insightful to hear comments like, "I always attend SICB because it's so trainee-friendly." That being said, if you have suggestions for making SICB or the DCPB more trainee-friendly, please contact me at [cs-lay@uci.edu](mailto:cs-lay@uci.edu).

There was a fair but not impressive number of graduate students and postdocs at the DCPB business meeting, so I'd like to remind all of you that there is an open invitation to all DCPB members (including, of course, students and postdocs) to attend the business meetings. They tend to be both interesting and enlightening.

The Student/Postdoctoral Affairs Committee (SPDAC) had a productive meeting as well, leading a helpful workshop on developing elevator talks and staffing a booth for trainees (covering topics like reviewing CV's, crafting teaching statements, seeking out postdocs, etc.). The SPDAC has had some preliminary discussions for developing our 2014 workshop, and we are fairly certain that the theme will be "improving your online presence," which should be particularly useful for senior graduate students seeking postdocs and postdocs seeking tenure-track jobs.

In addition to SICB, this year, DCPB student and postdoc members may have interest in attending the Experimental Biology (EB) meeting in Boston, MA (April 20-24), the Society for Experimental Biology (SEB) 2013 Annual Meeting in Valencia, Spain (July 3-6), and the International Union of Physiological Sciences (IUPS) meeting in Birmingham, UK (July 21-26). Trainee travel funding is readily available for these meetings. See: <http://experimentalbiology.org/EB/pages/Travel-Awards.aspx>; <http://www.sebiology.org/meetings/Valencia/grants.html>; <http://www.the-aps.org/mm/awards/Other-APS-Awards/Early-Career-Professional/IUPS.html>.

And, of course, it's never too early to start planning your applications for SICB Grants in Aid of Research (<http://www.sicb.org/grants/research-grant.php3>) and Fellowships of Graduate Student Travel (same link).

### Message from the Secretary

Rich Londraville ([Secretary.DCPB@sicb.org](mailto:Secretary.DCPB@sicb.org))



Rich Londraville

Hello-are you out there? I'd like some feedback on the newsletter (is anybody reading it, what do you enjoy, what do you cringe at, suggestions for making it better, etc.). The newsletter is our division's record of our history, but is it just a fancy set of meeting notes? Be candid, let me know, and I promise not to have hurt feelings (after all, I asked for it). If you have anything that you want to

communicate for the benefit of our members, please contact me ([Secretary.DCPB@sicb.org](mailto:Secretary.DCPB@sicb.org)) and we will make sure it gets in the newsletter.

### Minutes of the DCPB Business Meeting, Jan 4, 2013

Click [here](#).

### Spring Elections:

This Spring we are electing a new secretary. The secretary will take over from Rich Londraville, and will serve a two year term, beginning at the conclusion of the Austin meeting. Many thanks to both candidates for their willingness to serve our division.

### Candidates for DCPB Secretary

#### Wes Dowd

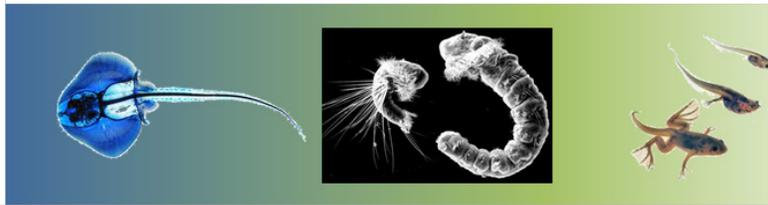


Wes Dowd

Current Position: Assistant Professor, Department of Biology, Loyola Marymount University.

Education: B.S. Biology, Duke University (1999); M.S. Marine Science, Virginia Institute of Marine Science (2003); Ph.D. Ecology (Physiological Ecology emphasis), University of California, Davis (2009).

Professional Experience: Postdoctoral Scholar, Hopkins



Marine Station of Stanford University (2009-2011); Assistant Professor, Department of Biology, Loyola Marymount University (2011-present).

SICB activities: Member of Division of Comparative Physiology and Biochemistry since 2008. Judge of best student presentation contestants; Symposium speaker; chair for multiple sessions.

Other Memberships: American Physiological Society; American Fisheries Society, Physiology Section; American Elasmobranch Society.

Research Interests: Research in my laboratory combines physiology, biochemistry (including 2D gel-based proteomics), organismal biophysics, and behavior to understand the effects of environmental stress on coastal fishes and intertidal animals, especially mussels of the Genus *Mytilus*. We seek to answer two broad questions: 1. How do physiological mechanisms of environmental stress tolerance contribute to current patterns of differential species success, and what are the implications in the face of global change and species invasions? 2. How do patterns of mechanistic variability within populations interact with small-scale patterns of environmental variation to contribute to larger-scale ecological and evolutionary trajectories?

Goals Statement: Although I came to SICB relatively recently, it quickly became my "academic home" and a highlight of each winter break. The Secretary position is an excellent opportunity for me to personally become more involved in the workings of the Society. In addition to the newsletter and other traditional Secretary duties, I look forward to the opportunity to encourage even greater Division participation by young DCPB members and faculty from undergraduate-oriented institutions. Encouraging new ways of interacting with the broader audience beyond SICB to convince the press, and by extension the general public, of the importance and societal relevance of our work would be a long-term goal of mine.

#### **Deborah Lutterschmidt**

Current Position: Assistant Professor of Biology, Portland State University.

Education: B.S. in Biology, DeSales University (1997); M.S. in Zoology, University of Oklahoma (2000); Ph.D. in Zoology, Oregon State University (2006).

Professional Experience: Postdoctoral Fellow, NSF Center for Behavioral Neuroscience and Neuroscience Institute, Georgia State University, Atlanta (2006-2010); Assistant Professor of Biology, Portland State University, Oregon (2010-present).

SICB Activities: Member since 1999; Judge for Best Student Presentation Awards (2007-present); Recipient of Dorothy M. Skinner Scholar Award (2008); Dorothy M. Skinner Scholar Award Committee (2010); total of 15 oral and poster presentations at SICB (including those with mentored students).

Other memberships:

American Physiological Society, J.B. Johnston Club for Comparative Neurobiology, North American Society for Comparative Endocrinology, Society for Behavioral Neuroendocrinology.

Research Interests: Research in my lab focuses on understanding how seasonal rhythms in physiology and behavior are synchronized with the environment. We use a combination of field and laboratory studies in reptiles and amphibians to investigate the influence of environmental cues on the neural, hormonal, and behavioral components of seasonal reproduction. We also ask questions about whether timekeeping mechanisms vary among populations inhabiting different environments, particularly those living in extreme environments.

Goals Statement: I am honored to have been asked by the Nominating Committee to serve as a candidate for the election of Division Secretary. Each year I consistently choose to attend the SICB annual meeting over other society meetings, and for very good reason! SICB is a wonderful society with strong roots in broad, interdisciplinary science. As a graduate student and postdoc, I valued SICB as a collegial atmosphere for presenting my research as well as learning about the diversity of research being conducted across SICB's many divisions. Like so many of its members, these long-standing traditions of SICB as a student-friendly society are why I now bring my own graduate and undergraduate students to the annual meeting. I am excited about the opportunity to formally contribute to the success of the DCPB. As Secretary, I will work to foster communication both within the DCPB as well as between the DCPB and SICB's other divisions. I will also strive to promote SICB as a rigorous yet supportive environment for students, postdocs, and early career scientists, as these participants are critical to the future success of the Society.



Deborah Lutterschmidt