

## Division of Comparative Biomechanics

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### DCB Officers & Representatives

Mark Denny  
*Chair 2013-2015*

Melina Hale  
*Chair-Elect 2013-2015*

Sharon Swartz  
*Past Chair 2013-2015*

Tim Higham  
*Secretary 2012-2014*

Laura Miller  
*Program Officer 2012-2014*

Nicholas Gidmark  
*Student/Postdoc Rep 2013-2016*

### Message from the Chair

Mark Denny ([Chair.DCB@sicb.org](mailto:Chair.DCB@sicb.org))

January's meeting in San Francisco was a rousing success—the largest SICB meeting ever—with a vast array of concurrent sessions that kept us all in shape as we dashed from one venue to the next. Included in the mix were 72 presentations by DCB students participating in the competition for Best Student Talk and Best Student Poster. Congratulations to Swati Varshney for her talk on the morphometric origins of flexibility in fish armor and Arjun Nair for his poster dealing with optimal approach strategies for predatory fish based on lateral-line sensation. Stellar presentations by runners up Sarah Sharpe and Rachel Wigton made the selection of winners unusually difficult.



Swati Varshney, winner of the Best Student Paper competition

Jake Socha again coordinated the competition, and we all owe him a round of applause for his efforts. Lining up judges, collating the responses, overseeing the voting, and providing students with feedback is a huge effort, and Jake does it with grace. He also puts considerable thought into how to make the competition better, and in consultation with others and discussion at the annual DCB business meeting, an intriguing idea has emerged.



Arjun Nair, winner of the Best Student Paper competition

In its current format, talks and posters in the student competition are scattered throughout the meeting. Add to that spread the large number of competitors, and the result is that each individual judge seldom sees all of the top entrants. Come time to pick the winners, this lack of uniform coverage can make for difficult decisions.

It has been suggested that we change the format of the competition to avoid this problem. In the revised format, when registering for the meeting, students wishing to participate in the competition would, in addition to their regu-



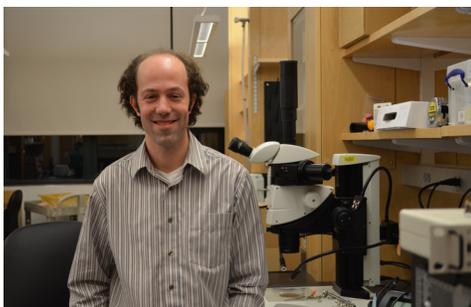
Sarah Sharpe, runner up for the Best Student Paper competition



lar abstract, submit a one-page extended abstract. A DCB committee would then choose from these submissions a short list of six talks and six posters to be judged at the annual meeting. The talks would be given at a single session, allowing judges to see all the presentations, and thereby providing a level playing field for the competition. The six posters would similarly be presented in a single session. Highlighting these contest sessions might also serve to increase attendance as members flock to see that best of DCB.

There are pluses and minuses to this proposal. The preliminary judging of entrants based on an extended abstract introduces an additional element of writing into the competition. In the past, all participants had access to feedback from the judges on their presentations. In the new system, they would initially receive feedback only on their extended abstract, and we would have to find a way to provide feedback from the meetings. To this end, we might consider creating a smart-phone app allowing members of the audience to post constructive comments that would then be available to those students desiring feedback.

At this point, these are just ideas. Jake and I welcome your thoughts.



*Eric Tytell, winner of the Carl Gans Award*

This year's winner of the Gans award is Eric Tytell of Tufts University. Eric received the award in recognition of his outstanding work combining the interplay of fluid dynamics and neuromuscular control in the locomotion of fishes.

I'd like to close by thanking Sharon Swartz—our now ex-chair—for her excellent stewardship of the division, and welcoming Nick Gidmark, our new representative to the Student/Postdoctoral Affairs Committee.

### Carl Gans Award Nominations for 2014.

The Division of Comparative Biomechanics is pleased to announce this year's competition for the annual **Carl Gans Award**. This award is given annually either to an outstanding young investigator (eligible candidates are those who have completed their doctorate within the past seven years) for distinguished contributions to the field of comparative biomechanics, or to an investigator at any level for the single most significant contribution published in the past (2012) calendar year to the literature of comparative biomechanics, including research papers, review articles, and books. For either type of award, candidates may apply directly or be nominated, and must be members of SICB. Past winners of the Bartholomew Award are ineligible to compete for the Gans Award. Application materials shall be submitted to the Award Committee, chaired this year by Dr. Emily Carrington, and comprise either 1) a short description of their work together with selected reprints (outstanding young investigator), or a copy of a research paper, review article, or book (best contribution to the literature); 2) a curriculum vitae; and 3) three letters of support. Nominators must arrange for these materials (two additional letters of recommendation are required) to be submitted to Chair of the Division (Dr. Mark Denny). The Award Committee will recommend for approval one candidate to the Division Chair, who will authorize reimbursement of appropriate expenses incurred by the winner in attending the annual SICB meeting. The awardee will be presented with a certificate, and according to available funds, the Chair may also authorize a research award. Please send applications/nominations for this award to Dr. Mark Denny at [Chair.DCB@SICB.org](mailto:Chair.DCB@SICB.org) to be forwarded to the Award Committee. **The deadline for nominations is 23 August 2013.**

### Message from the Divisional Program Officer Laura Miller ([DPO.DCB@sicb.org](mailto:DPO.DCB@sicb.org))

Thanks again to all who participated in the San Francisco meeting this year! This was the biggest SICB meeting to date with over 1600 abstracts and more than 2100 attendees. We were fortunate to have two society-wide symposia related to biomechanics. The first symposium was organized by Stacey Combes and Matthew McHenry, titled "When Predators Attack: Sensing and Motion in Predator-Prey Interactions." All of the presentations successfully highlighted research that has advanced our understanding of the sensory-motor dynamics that



govern predator-prey interactions. The second symposia on "Vertebrate Land Invasions: Past, Present, and Future" was organized by Alice Gibb, Miriam Ashley-Ross, Richard Blob, and Tonia Hsieh. This symposium synthesized a broad body of knowledge about water-land transitions in the distant past and among extant species. Many thanks to the National Science Foundation, the Company of Biologists, The Biological Bulletin and the SICB Divisions for their continued support of these symposia.

In addition to the symposia, there were over 250 presentations and posters related to topics in comparative biomechanics. In addition to talks and posters, a wide variety of social events offered wonderful opportunities to catch up with friends and grab some drinks and deserts. I'd like to thank our partnering divisions, DVM, DEDB, and DPCB, for help in organizing the successful Dessert Social on Saturday night. After four full days of the meeting, the society-wide social in honor of students and postdocs offered a wonderful opportunity to say goodbye to friends and colleagues until next year.

Please start making plans to attend next year's meeting, centrally located in Austin, Texas. DCB is cosponsoring two very interesting symposia: "Shaking, dripping and drinking: surface-tension phenomena in organismal biology" organized by David Hu, Rachel Levy, and Lydia Bourouiba, and "Terrestrial locomotion: Where do we stand, where are we going?" organized by Richard Blob and Tim Higham. If you plan to give an oral presentation or poster in Austin, please choose your abstract topic choices wisely. The DCB and DVM Program Officers organize abstracts submitted with the primary topic "Morphology." The three topics you designate when you submit your abstract play a huge part in determining the session in which your presentation is placed. Please make sure your first topic is "Morphology" if you want it handled by DCB. Please feel free to email me with any special requests by October 1, and I will try to accommodate them.

Finally, please consider organizing a symposium for the 2015 meeting in West Palm Beach, FL. I am happy to offer any feedback on drafts of proposals and to share some successful proposals with you. Please contact me soon (before August) with your ideas. The deadline for proposals is August 30, 2013. SICB will reimburse up to \$100 for each symposium presenter if they submit a paper to

ICB by January 31. Registration, lodging, and travel expenses can be paid from divisional funds (often more than one division) as well as from grants from outside agencies, journals and publishers, and equipment companies. If you are considering putting together a symposium, consider adding complementary sessions of oral and poster presentations to expand the range of topics and the number of participants.

### Message from the Graduate Student/Postdoctoral Representative

*Nicholas Gidmark*

After three years of service, Marianne Porter is stepping down as the DCB graduate student and postdoc representative. Starting at the conclusion of the 2013 meetings in San Francisco, I have stepped into that role. Thanks, Marianne, for your time and effort! Also at the meetings in San Francisco, the SPDAC maintained a booth in the exhibit room for advice to grad students and postdocs on how to get the most out of a SICB meeting, how to format a CV, and other related issues; thanks to all who participated. Things are in the brainstorming stages for next year's meetings, so feel free to email me ([gidmark@brown.edu](mailto:gidmark@brown.edu)) if you have any ideas about how to best serve the division's graduate students and postdocs.

### Message from the Secretary

*Timothy Higham* ([Secretary.DCB@sicb.org](mailto:Secretary.DCB@sicb.org))

The meeting in San Francisco was phenomenal. There were many stunning talks and posters, including countless topics related to comparative biomechanics. Given the incredible quality of student talks, it is clear that comparative biomechanics has a very bright future. I expect that the meeting in Austin will be equally as good!

Our researcher database needs more contributors. One thing that I have noticed is that few students submit a description of their research interests. Given how encouraging SICB is when it comes to students, I would like to see more students and postdocs submitting to the researcher database. In addition to getting your name out there, you can provide a link to your website and use this as a tool for stimulating collaborations and/or expressing your desire to be involved in a society. Please send me a brief title, as short description of your research, and a photo of yourself or something that summarizes your interests (or a key finding).



### DCB Logo contest

I am delighted to announce that we are inviting all of you to submit a logo for the DCB logo contest. We encourage you to think about comparative biomechanics and develop a logo that represents the diversity among our members. Please submit your logo to me at [Secretary.DCB@sicb.org](mailto:Secretary.DCB@sicb.org) by June 15th, 2013. A committee will evaluate the submitted logos and will announce the winner in July. The selected logo will be used for a number of purposes, not the least of which is for DCB t-shirts. We are planning to sell t-shirts at the 2014 SICB meeting in Austin, although you are asked to pre-order a shirt when you register for the meeting. More information will be sent to DCB members as the registration deadline approaches. Before that, please encourage your students, your postdocs, and your colleagues to develop a logo and submit! We are hoping to give a prize to the winner!

### Video session at the 2014 SICB meeting in Austin

I am working with the divisional program officers and management to develop a video session for the next SICB meeting. We will be encouraging everyone in DCB to submit short video clips, which I will then compile and re-format before the next meeting. Then, I am hoping we can have a large-screen TV in the poster session area that will continually run the videos during the time that the posters are being presented. We hope that this will expose your research and videos to other scientists, encourage collaborations, fuel future research questions, and also provide location for biomechanists to congregate and discuss interesting phenomena. Again, more information will be sent to you in the near future.

### Minutes of the 2013 DCB Business Meeting [Click here.](#)



### Election information: Candidate Biographies Candidates for Program Officer

#### Ulrike Muller

Current position: Assistant Professor, California State University Fresno

Education: Ph.D. Marine Biology Groningen University, Netherlands, 1997; Diplom (M.S. equivalent) in Biology Bielefeld University, Germany

Professional experience:

Postdoc in larval fish swimming in Dept. Experimental Zoology, Wageningen University, Netherlands; Postdoc in insect flight in Dept. Zoology, Cambridge University, U.K.

SICB activities: I have been a member of the Student Advisory Board and a DCB judge for student presentations; I have attended our annual meetings 9 times since I was first invited as a symposium speaker in 2002; I have attended yearly since I started my own lab in 2007, and typically bring three to six of my students to attend, to present posters and talks.

Other memberships: Society of Experimental Biology

Research interests: I am interested in anything that moves. I study the fluid dynamics of fish swimming and am currently moving into new areas, such as suction feeding in carnivorous plants, control of insect walking, and insect flight muscles. Right now we are trying to figure out how the smallest suction feeders achieve suction; how fruit flies integrate sensory information to navigate around obstacles; and how fish larvae control their swimming trajectory. We are building mechanical models of asynchronous flight muscles and are developing analytical models for suction feeding. I enjoy collaborating with engineers and mathematicians as well as with neuroethologists, biochemists and plant genomics experts. I am also active in innovating STEM education, always looking for new ways to integrate research and teaching.

Goal statement: SICB is a wonderful hub for everything biomechanical. Over the last 15 years, biomechanics, and with it our share at SICB, has grown substantially, with many sessions and presentations to attend. When I co-organized symposia and set programs for SEB and other European societies, I have strived for a good mix of diverse speakers,



Ulrike Muller, candidate for DCB Program Officer



ranging widely in academic age and interests. I hope to create dynamic sessions that are cohesive yet break through disciplinary boundaries in order to help people to make new connections. As Program Officer for DCB I will work closely with DCB to create a meeting program that encourages cross-disciplinary research and invites presentations from other fields within SICB, such as neuroethology and proteomics, as well as from fields outside, such as control engineering and machine vision.

### Joe Thompson



Joe Thompson,  
candidate for DCB  
Program Officer

Current position: Associate Professor of Biology, Franklin & Marshall College, Lancaster, PA  
Education: A.B. with honors in Biology, Bowdoin College (1992); Ph.D. in Biology, University of North Carolina at Chapel Hill (2000; Dr. William Kier, advisor); NIH-SPIRE Post-doctoral Fellow, University of North Carolina at Chapel Hill (2000-2003)

Professional experience: Associate Professor (2011-present) and Assistant Professor (2006-2011) at Franklin & Marshall College; Assistant Professor of Biology, St. Joseph's University (2003-2006).

SICB activities: Member and regular contributor since 1995 (Division of Invertebrate Zoology), and member of the Division of Comparative Biomechanics since 2008; Member of the planning team that created the SICB Digital Library (2003-2004); SICB Digital Library Advisory Board member and Reviewer for Biomechanics entries (2003-2006); Judge for best student papers/posters awards (DIZ); Participant in NE Regional and SE Regional DVM/DCB conferences; Member of the Education Council (2012-present).

Other memberships: Member of the American Physiological Society since 2006. Board member of the Lancaster-Lebanon Science and Technology Alliance.

Research interests: My research focuses on the muscle physiology and locomotion of soft-bodied marine invertebrates, especially those groups (e.g., cephalopod molluscs) that possess obliquely striated muscles. I ask two broad questions in this work: (1) how do muscle cell structure and physiology change over ontogenetic or evolutionary time scales and (2) how do these changes affect loco-

tory performance and behavior. A secondary line of research in my lab, one that has been percolating slowly since 2008, investigates the mechanisms and consequences of ingestion of tiny plastic fragments by benthic marine invertebrates.

Goals statement: SICB has been an important part of my career as a scientist, beginning with my first (ASZ) conference in 1995 as a graduate student and continuing to my current position as associate professor at a liberal arts college. The annual conference remains one of the highlights of my year. As DCB Program Officer, I will work hard to help maintain the high quality of our annual conference. We have a tradition of exciting symposia emerging from members of our division, and I will encourage new symposium proposals. I will also seek, and be responsive to, member feedback about the organization of talks and poster, and about innovations, including the "Lightning Talks" program DCB sponsors in coordination with the DVM.

### Candidates for Secretary

#### Andrew Clark



Andrew Clark, candidate for  
DCB Secretary

Current position: Assistant Professor. Department of Biology, College of Charleston.

Education: 2002. B.Sc., University of Maryland, College Park; 2009. Ph.D. University of California, Irvine.

Professional experience: 2010-present. Assistant Professor, Dept. Biology, College of Charleston; 2012. Visiting Scientist, Friday Harbor Laboratories, University of Washington; 2009-2010. Postdoctoral Associate, Dept. Biological Sciences, Clemson University; 2008. Part-time Faculty, Dept. Physical Therapy, Chapman University.

SICB activities: I have been an active and enthusiastic member of SICB since 2004. I delivered four first authored oral presentations, three first authored poster presentations, and, coauthored one oral presentation and three poster presentations. I delivered three first authored oral presentations at various Southeast Regional DCB-DVM meetings. In 2011, I judged oral and poster presentations and chaired the Best Student Paper Award Committee for the Division of Vertebrate Morphology. I served as a session chair in 2011 and 2012. In 2012, I co-



organized the Southeastern Regional SICB Meetings for the Divisions of Comparative Biomechanics and Vertebrate Morphology. Since 2012, I have been a member of the SICB Broadening Participation Committee, and, in 2013, organized and delivered a workshop titled "Effective Presentation Skills."

Other memberships: American Elasmobranch Society; American Society of Ichthyologists and Herpetologists; Sigma Xi; Society of Vertebrate Paleontology

Research interests: My research program investigates animal form-function relationships at organizational levels ranging from tissue to whole organisms, how these organizational levels are integrated and work as a system, and, more broadly, how these relationships affect behavior, ecology, and evolution, and how they can benefit humans. My fascination with animal form and function is the product of my obsession for animals, my zookeeping experiences, and my training as a comparative physiologist. Experimental approaches I use include high-speed videography, electromyography, force measurement, materials testing, and anatomical dissection. Most of my research investigates the biomechanics of feeding in hagfishes.

Goals statement: I want to help DCB in any way possible. In addition to preparing and editing DCB newsletters, being a representative correspondent with other divisional secretaries and the society-wide secretary, and keeping records for DCB, I would like to explore new ways of promoting DCB and I intend to seek additional sources of funding for students, postdocs, and junior faculty.

### Andie Ward



*Andie Ward, candidate for DCB Secretary*

Current Position: Associate Professor, Department of Biology, Adelphi University  
[http://home.adelphi.edu/~aw17333/Ward\\_Lab/Welcome.html](http://home.adelphi.edu/~aw17333/Ward_Lab/Welcome.html)

Education: Ph. D. 2005: University of Massachusetts Amherst (Organismic and Evolutionary Biology). B. S. 2000: Wake Forest University (Biology).

Professional Experience: 2012-present: Associate Professor, Department of Biology, Adelphi University; 2007-2012: Assistant Professor, Department of Biology, Adelphi University; 2005-2007: Post-doctoral Scholar, Department of Organismal Biology and Anatomy, The University of Chicago

SICB Activities: 2009 – present: Member, Public Affairs Committee

Other Memberships: International Society of Vertebrate Morphology

Research Interests: Functional morphology of aquatic locomotion, Environmental impacts on development, Evolution of body shape in vertebrates

Goals: I am honored to be nominated to run for secretary of the Division of Comparative Biomechanics. SICB has been a critical part of my scientific career since my first meeting in 1998, and I am excited for the possibility of working to improve the experience of our current members. One of my goals as secretary is to increase public awareness of the fantastic work being done by the biomechanics community. As a member of the Public Affairs Committee for the past few years, I have worked to find methods to improve the interaction between SICB and the public. As secretary, I will continue to find ways to promote the science of the division to the scientific community and beyond by working with the membership, SICB secretary, and Public Affairs committee. My second goal is to increase the contributions to the digital library so that materials from our community are widely available for educational purposes.