The Society for Integrative & Comparative Biology

SICB Newsletter

Spring 2014 Issue

Division of Evolutionary Developmental Biology

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DEDB Officers & Representatives

Sally Leys
Chair 2014-2016

Chris Lowe
Past Chair 2014-2016

Brad Davidson
Secretary 2013-2015

Gregory Davis
Secretary-Elect 2014-2015

Louise Page
Program Officer 2013-2016

Nathan Farrar
Student/Postdoctoral Affairs 2014-2017

Message from the Chair

*Sally Leys (**Chair.DEDB@sicb.org**)*

I'm the new divisional Chair this year – thank you Chris Lowe for carrying the banner last year and through the Business meeting in Austin. It seems to me there are just a few important things to report this winter/spring.

1. Highlights of the Austin meeting – we all really benefitted from the two main DEDB symposia: the post-doc run symposium – Cell's view of development, and the Organismal Systems Biology symposium. Clearly it's these symposia and the many DEDB presentations in the adjoining sessions that make SICB fun and informative to attend. See point '2' below.

Congratulations to the best student talk and poster winners:

Best Talk: Jacob Musser Investigating the Homology of Feathers and Scales using High-throughput Genomics

Best Poster: Kristen Koenig Evolution and Development of Photoreceptor Cells in the Single-Chambered Eye of the Squid Doryteuthis pealeii. And of course thank-you to all the judges.

2. Symposia – surprisingly so few symposia were proposed last year that we were scrambling at the last minute to put some together… not the best approach. There are, fortunately some great ones for Palm Beach, but it is definitely now that we should think of symposia for Portland Oregon. I would be happy to work with anyone to help get symposia proposals together, and following Chris' lead last year, highly encourage postdocs to think of ideas and come forward to organize symposia. Please just email me and Louise (program officer) and we'll start the ball rolling.

3. Other Evo-Devo events/meetings – Some of you may have heard of the proposed new Society of Evolutionary and Developmental Biology, formed provisionally after a NESCent meeting organised by Cassandra Extavour and Allen Rodrigo last fall. The immediate aim of the new SEDB is to coordinate training opportunities and link North American Evo-Devo with societies in Europe, South America and elsewhere. Stay tuned for more on this – when a website is formed for this new society.

Other meetings this year?

- The International Congress on Invertebrate Morphology (ICIM) will be held at Humboldt-Universität in Berlin **http://www.icim3.org/index.htm** August 3-7th.

- International Society of Evolutionary Protistology, joint with the International Society of Protistology, **http://www.isepsociety.com/** held at the Bamff Centre, Alberta, Canada also August 3-8th.
- Canadian Society of Ecology and Evolution, is holding a joint meeting this year with the Canadian Society of Zoologists **http://www.genomesbiomes.ca/** in Montreal, Canada, May 25-29th.
- European Society of Evolutionary and Developmental Biology – has its annual meeting in Vienna this year **http://evodevo2014.univie.ac.at/** July 22-25th.

This should keep you busy all summer.

Please send any ideas for symposia for Portland, OR (the 2016 Annual meeting) soon!

Message from the Divisional Program Officer

*Louise Page (**DPO.DEDB@sicb.org**)*

Those of you who attended the meeting in Austin are aware that the Society-wide symposium titled "A cell's eye view of body plan evolution", which was sponsored by DEDB and organized by Dede Lyons, Mansi Srivastava, and Mark Martindale, was a great success. This well-attended symposium included thought-provoking presentations by both long-time SICB supporters and by researchers that had not previously attended SICB meetings. Symposia such as this ensure the importance and relevance of SICB meetings to the membership of our division and help to enrich our division by attracting new members. The broad appeal of the subject matter of this symposium was attested to by the large number of papers presented in companion contributed paper sessions and poster sessions.

In addition to the Lyons, Srivastava, and Martindale symposium, registrants at the Austin 2014 meeting were treated to presentations in another society-wide symposium on epigenetics organized by Warren Buggren and in a symposium titled "Adaptation or developmental constraint" organized by Haruka Wada and Kendra Sewall. Five contributed paper sessions and several poster sessions also featured research on topics of relevance to evolution and development. Many of these featured graduate student research. I would like to thank all those who graciously accepted my request for their participation as co-chairs for the various contributed paper sessions.

Next year's meeting in West Palm Beach will hopefully be a warm and sunny interlude for those of us coming from much more northerly locations. Regardless of the weather, participants will be sure to enjoy an exciting symposium being organized by Leonid Moroz entitled "Origins of neurons and parallel evolution of nervous systems: the dawn of neuronal organization". Two other symposia at this meeting that will receive support from DEDB are titled: Linking crustaceans and insects: comparative physiology of the Pancrustacea" (organized by Jon Harrison & Sherry Tamone) and "Biology of Crocodilia" (organized by Lance Valentine).

As I mentioned during the DEDB business meeting in Austin, I very much encourage all of you to consider organizing a symposium for the 2016 SICB meeting to be held in Portland Oregon. Please contact me (Louise Page at **lpage@uvic.ca**) with your ideas. You can access SICB's Symposium Proposal application form at **http://www.sicb.org/meetings/2016/call-symp.php** or I am happy to send you this pdf on request. I can also give you tips and suggestions to help you put together a successful application. Applications for Portland 2016 will be due in late August 2014. Organizing a symposium is a great opportunity to bring together colleagues in your field for stimulating discussions, exchange of information about techniques, and possible opportunities for collaborative research.

Message from the Divisional Secretary

*Brad Davidson (**Secretary.DEDB@sicb.org**)*

Another fantastic meeting for our division this year! As mentioned by Sally and Louise, this success was largely driven by the outstanding efforts of the symposium organizers with substantial assists by Louise and Chris. It will be critical that this success inspires many new symposium proposals moving forward, so send them in! Also thanks again to our out-going Student/Postdoc Rep. Jacob Musser for launching and maintaining the dinner date service between faculty and student conference attendees. We will definitely make sure that this new tradition is supported and expanded moving forward.

Lastly, we are having divisional elections for Chair-Elect and Program-officer Elect this spring. We are fortunate to have some excellent candidates for each office. Please make sure to read their statements below and cast your vote during the election in May.

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Minutes of the DEDB Business Meeting in Austin, Texas (click here)

Candidates for Chair-Elect

Cassandra Extavour

Cassandra Extavour

Current position: Associate Professor of Organismic and Evolutionary Biology, Harvard University.

Education: B.Sc, 1995, University of Toronto, Canada; Ph.D., 2000, Autonomous University of Madrid, Spain.

Professional experience: Associate Professor, Department of Organismic and Evolutionary Biology, Harvard University of Arizona, 2011-present; Assistant Professor, Department of Organismic and Evolutionary Biology, Harvard University, 2007-2011; Research Associate, laboratory of Michael Akam, Cambridge University, UK 2002-2007; EMBO Postdoctoral Fellow, laboratory of Michalis Averof, Institute for Molecular Biology and Biotechnology (IBB- FORTH), Crete, Greece; Graduate work in the laboratory of Antonio García-Bellido, Autonomous University of Madrid, Spain.

Other memberships: Society for Developmental Biology, Genetics Society of America, European Society for Evolutionary Developmental Biology, American Society for Cell Biology, Society for the Study of Reproduction, Society for Integrative and Comparative Biology.

Research interests: I am interested in the evolution of the developmental and molecular mechanisms that direct cell fate specification in early embryogenesis. I am particularly interested in the cell fate decision mechanisms operating in establishment and development of the germ line and reproductive somatic tissues. My lab uses primarily arthropod model organisms to explore these questions, including both well-established models like Drosophilid flies, and emerging models of various basally branching insects, crustaceans and chelicerates.

Goals statement: I am honored by the nomination to run for Chair of DEDB. I first attended SICB in 2007, and was tremendously impressed by two main features that, in my view, set SICB apart from other professional societies: (1) the scientific and intellectual scope of the meeting; and (2) the outstanding support mechanisms for students and postdocs. These are two key elements of the society that I would do my best to continue to support. Because of its broad scope, SICB, and DEDB in particular, are in an excellent position to form strong ties to many other professional and early-career support organizations, and this is also something that I would aim to build upon. Specifically, I would work towards increasing membership by reaching out to other scientific communities to show them the relevance and impact that becoming a part of SICB and DEDB could have for their work. Having spent 12 years of my scientific training in Europe, I have close professional ties to the European Evo-Devo community, which I believe gives me a useful perspective on the dynamics of the field beyond the US. Since moving to the US in 2007, I have aimed to assist and strengthen the international community of Evolutionary Developmental Biologists in various ways: as lead PI for the Eco-Devo-Evo (EDEN) Research Coordination network since 2010 (**www.edenrcn.com**), I have tried to facilitate productive interactions between Eco-Devo-Eco researchers by providing a funding mechanism for scientists to learn and develop various techniques for use in emerging model organisms. I also led an NSF- funded Evo-Devo community workshop at NESCent in December 2013, with the goal of beginning a community discussion of the past successes, present challenges, and future directions of the field of Evo-Devo. One of the outcomes of this workshop was the creation of a new "Society for Evolutionary Developmental Biology" (SEDB). The goal of this Society is not to replace or supplant any existing professional organizations that serve the Evo-Devo community (including, for example, DEDB of SICB or the European Society for Evolutionary Developmental Biology (EED)), but rather to promote and support the broad diversity of the field by, in the first instance, organizing a conference exclusively dedicated to Evolutionary Developmental Biology, to take place in North America in alternate years to the highly successful EED meetings in Europe. As Chair of DEDB, I would strive to make sure DEDB is in close contact with the EED and the new SEDB in such a way that all self-identified members of the Evo-Devo-Eco communities feel adequately supported by one or more groups, depending on their preferences. I feel there is great potential for synergy among the existing professional societies, and to this end, would aim to promote communication and activities between DEDB and other organizational subunits of our community, both nationally and internationally.

David Lambert

David Lambert

Current position: Associate professor of Biology, University of Rochester.

Education: B.S., 1995, Yale University; Ph.D., 2002, University of Arizona.

Professional experience: Associate Professor, Department of Biology, University of Rochester, 2011-present; Assistant Professor, Department of Biology, University of Rochester, 2004-2011; Helen Hay Whitney Foundation Postdoctoral Fellow, laboratory of Kevin White, Yale University, 2002-2004; Graduate work in the laboratory of Lisa Nagy, University of Washington; Undergraduate research in the laboratory of Leo Buss, Yale University

SICB activities: Co-Organizer, Symposium on Spiralian Development, 2010 SICB meeting.

Research interests: I have broad interests in evolution and development. Work in my lab focuses on the mechanisms of spiralian development using the mollusk Ilyanassa as a model. Recently, we have worked on the roles of asymmetric RNA segregation in patterning the blastula, and on signaling that patterns the dorsal-ventral axis.

Goals statement: I am honored by the nomination to run for Chair of DEDB. Since I was a graduate student, the SICB meetings have been a key part of my professional interactions, and I welcome the chance to help contribute to the quality of these meetings. If elected, I would work to increase participation at meetings. I would especially try to facilitate graduate student and post-doc attendance, since the opportunities for these members to present and interact with others at meetings is one of the particular strengths of SICB. I would also work to recruit and support groundbreaking symposia that will move the field in new and interesting directions, and stimulate interactions among members, while attracting those who have not attended before.

David W. McCauley

David W. McCauley

Current position: Associate Professor, Department of Biology, University of Oklahoma

Education: B.S., 1990, University of North Carolina at Charlotte; Ph.D. (Zoology), University of Texas at Austin, 1992-1996.

Professional experience: Assistant Professor, Department of Zoology, University of Oklahoma, 2006-2012; Senior Research Fellow, Caltech, PI: Marianne Bronner-Fraser, 2003-05; Post-Doctoral Fellow, Caltech, PI: Marianne Bronner-Fraser, 1999-2003; Post-Doctoral Scholar, Pennsylvania State University, PI: William R. Jeffery, 1997-99.

Other memberships: Society for Developmental Biology

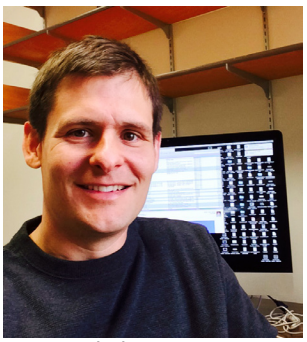
Research interests: Research interests in the McCauley lab center around understanding development and evolution of the vertebrate neural crest, with a particular focus on the role of the duplicated SoxE transcription factors, Sox8, Sox9, and Sox10 that arose from a single ancestral SoxE gene. We use two models, the basal jawless sea lamprey and the zebrafish, to investigate how functional changes in SoxE gene activity could be related to their roles in the differentiation of the vertebrate craniofacial skeleton, pigment cells, and the peripheral nervous system, that are all derived from the neural crest. Our ultimate goal is to understand how changes to protein coding sequences can relate to evolution of protein functions in a developmental context.

Goals statement: Although Evolutionary Developmental Biology is considered by many to be a relatively "new" discipline, those of us who follow "Evo-Devo" recognize its roots can be traced deep into the 19th century and has a longstanding tradition of using the comparative approach to understand changes in animal development across taxa. Evo-Devo investigators now have the ability to take advantage of modern manipulation techniques and technologies as they emerge (e.g., genome manipulation, RNAi) to provide new insights into important changes in developmen-

tal mechanisms. As additional genomes continue to be sequenced and annotated, these emerging datasets will only increase our ability to test hypotheses regarding developmental changes across species boundaries. However, these tools can also be used to address smaller scale (cellular) or larger scale (eco-devo) evolutionary questions outside of classical Evo-Devo thinking. Our task will be to lead a broad-based interdisciplinary approach to promote greater interactions among DEDB and our SICB peers. I will work to increase awareness of the impact that evolutionary developmental biology continues to make for understanding how evolutionary change can arise. I look forward to the challenge of increasing appreciation for the diversity of model organisms that are available to address key research questions, and will support efforts to lobby for increased levels of funding in support of our goals.

Candidates for Program Officer-Elect

Scott Nichols



Scott Nichols

Current position: Assistant Professor of Biology, University of Denver.

Education: B.S., 1998, University of North Carolina Wilmington; Ph.D., 2004, University of California, Berkeley.

Professional experience: Assistant Professor, Department of Biology, University of Denver, 2012-present; American Cancer Society Postdoctoral Fellow, laboratory of Nicole King, UC Berkeley; Graduate work in the Department of Integrative Biology, UC Berkeley.

SICB activities: Graduate Affairs Committee, DSB (2003); Co-Organizer, Symposium on Sponge Biology (2004); Student/Postdoc Representative, DIZ (2005-2007); member of SICB since graduate school.

Other memberships: Society for Developmental Biology, American Society for Cell Biology.

Research interests: I am generally interested in evo-devo and evo-cell. In particular, I am interested in the early evolution of animals, including innovations for cell adhesion and cell communication during the transition to multicellularity. My research focus is on the molecular underpinnings of collar cell (choanocyte) development, structure and function in sponges. To a limited extent, we also perform comparative studies in choanoflagellates.

Goals statement: As I settle into an independent position at the University of Denver, I am excited to engage my newly formed lab in the activities of SICB. To my mind, what makes SICB notable is its diversity, and DEDB is a shining star with respect to scientific diversity. This creates an environment that fosters cross-disciplinary collaboration and an unparalleled opportunity for students and postdocs to communicate their research to colleagues in different disciplines – a skill that is critical to future success in academia. Additionally, many of us work in non-traditional model systems and increased opportunities to share ideas and experiences are often crucial to research success. During the coming years, my students and I will be active participants in SICB and DEDB. Thus, I am very excited by the prospect of contributing to the division through the coordination of the scientific program and DEDB social at the 2016 Annual Meeting as a Program Officer.

Yui Suzuki

Yui Suzuki

Current position: Assistant Professor of Biological Sciences, Wellesley College.

Education: A.B., 2001, Wellesley College; Ph.D., 2006, Duke University.

Professional experience: Assistant Professor, Wellesley College, 2008-present; Postdoc, laboratory of Dr. Lynn Riddiford, University of Washington, 2006-2008; Graduate work in the laboratory of Dr. Fred Nijhout, Duke University.

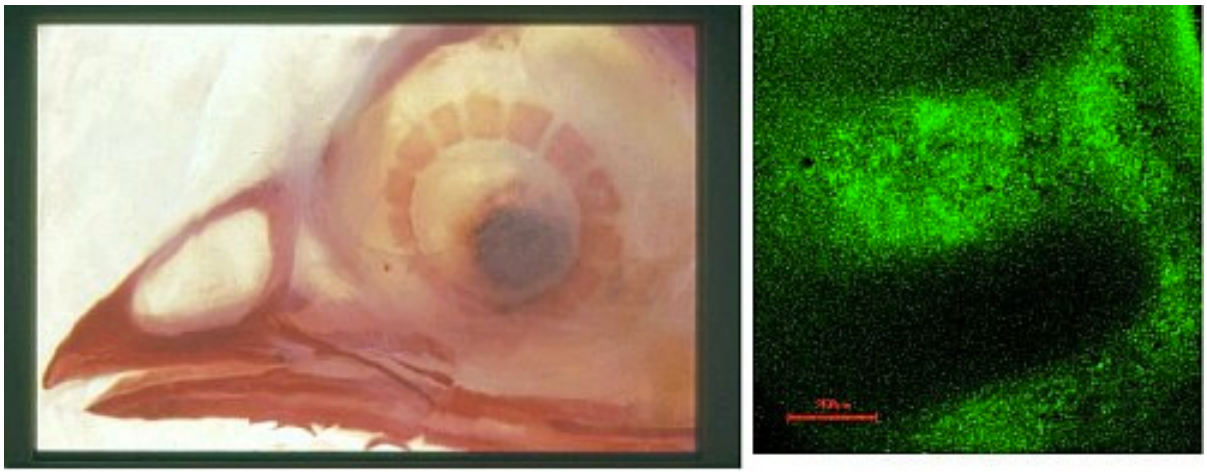
SICB activities: Member of SICB since 2008.

Other memberships: Society for Developmental Biology, Society for the Study of Evolution, Society for Entomological Society of America.

Research interests: I am broadly interested in evolution and development of metamorphosis, evolution of phenotypic plasticity, and evolution and development of regeneration. My current research focuses on

the evolution and developmental regulation of limb regeneration in insects, and the evolution of the physiological and genetic regulation of metamorphosis. To address these issues, my lab uses several insect species, including Tribolium castaneum, Oncopeltus fasciatus and Manduca sexta.

Goals statement: I am honored to be nominated to run for the DEDB program officer position. As a faculty member at a liberal arts college, the SICB annual meeting is one of my favorite conferences, and both my students and I have benefited from its offerings. The diversity of research topics presented ensures that there is something exciting for everyone, even beginning undergraduate researchers. I am committed not only to maintain the already existing depth and breadth of research topics but also to encourage discussion of new areas of research in evo-devo. If elected, I will strive to maintain DEDB as a source of inspiration and a gathering to discuss a variety of topics in evo-devo. In addition, many of my undergraduate research students have benefitted tremendously from the opportunity to present and interact with older and more established scientists. It is the opportunity to present among established scientists that makes SICB truly unique. I am committed to ensuring that younger students continue to present amongst well-established scientists to foster conversations across all ages and stages of their research career.



Tamara Franz-Odendaal

The development and evolution of ocular skeletons