



Division of Vertebrate Morphology (DVM): 2007 Spring Newsletter

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Message from the Chair

Kurt Schwenk

Greetings from Storrs, Connecticut, where, as I write, we are just entering mud season. Springtime seems like an impossibly distant horizon, but by the time you read this I expect it will be upon us all. If you have never experienced spring in the northeast after a long winter, you really need to try it sometime (Californians, just keep quiet).

The annual meeting in Phoenix was fabulous, as usual. I can't say the city was thrilling, but the venue was excellent, attendance fantastic and the company endlessly entertaining. The presence of huge swarms of graduate students decimating *hors d'oeuvre* trays like locusts in a cornfield was especially gratifying. Can graduate students reproduce asexually? It seemed like their numbers doubled just during the few days of the meeting... In any case, it is a propitious sign suggesting we are doing something right and that the society's future is in good (if hungry) hands.

The quality of the papers, posters and symposia seemed to me to be especially high this year, but then I think that every year. As usual, there was too much to see and too many conflicts among sessions. For example, there were at least three papers scheduled opposite my own that I would much rather have attended. Annoying as it is, choice is a good thing and again speaks to the vibrancy of the meetings. One change we will be trying at the next (San Antonio) meeting, following Dave Carrier's suggestion, is to group the student Davis Prize competitors into a single paper session with as little DVM conflict as possible. This will elevate the competition to a special event and encourage as many of us as possible to attend. It will also make it possible for us to announce the winner of the prize at the business meeting.

When I took this job I was assured that it was all glory and prestige, no work (work is for the Program Officer and the Secretary). While I cannot deny that the aura of the office surrounds me like a golden glow and that students and faculty, alike, pay homage by moving aside as I approach (they say it is to avoid me, but I know better), I have found myself grappling unexpectedly with several pesky work-type issues, namely, budget and bylaws. Taking the latter first, you will be asked to vote on a change of the DVM bylaws related to the D. Dwight Davis student prize (see the proposed bylaws changes section of the newsletter, below). These changes were suggested by David Carrier (2005 and 2006 Davis Prize Committee Chair) and discussed at the January 2006 business meeting. An online forum for membership discussion was also available. Former Chair, Beth Brainerd, has proposed a revised text. In short, the change limits student competition for the prize to two times. This will encourage students to compete only when their projects are more complete and polished. As noted above, it will further allow us to group all the competing papers into a special, unopposed paper session, making it a celebration of our student members. I hope you will support this change.

In addition, we are currently working on several other small changes to the bylaws initiated by Beth Brainerd. These are designed to streamline the election process of electing DVM officers and to improve their interactions. For one thing, a new position of 'Past Chair' is being proposed for addition to the DVM Executive Committee (along with Chair, Secretary and Program Officer). This formalizes the status of the former Chair who is a *de facto* advisor to the current officers (why do I have the nagging suspicion that as soon as I become 'Past Chair' the position will be dissolved...). Details of these changes will be presented to the membership later this year, discussed at the next business meeting and subsequently voted on. They are not at issue right now. I just wanted you to know that we actually do stuff.

Second, the SICB budget is undergoing some growing pains as we change from a calendar to a standard (June-July) fiscal year. This is the transition year and there are some kinks to be worked out. However, a more important issue is that for the first time since the bad-old-days when the Society nearly collapsed fiscally, we will start to run a deficit. There is no cause for alarm because the Society is financially very healthy, but it means that spending is going to have to be curtailed sooner rather than later because we cannot afford to run a deficit for more than a couple of years (I know, I've tried it). The SICB Executive Committee has been charged with examining the budget and identifying areas that can be controlled. Two of the biggest budget items are graduate student support and annual meeting expenses. Although no one was happy about it, the Executive Committee agreed almost unanimously that grad support has to be capped. This will take the form of limiting student support for travel and rooms at annual meetings to a maximum of three years (and possibly a slightly higher co-payment, depending on the year). Spending on graduate student support for meetings has been growing steeply for many years with no sign of a plateau, so it was felt that capping it was critical before it overwhelmed the budget. The second noticeable impact of the budget caps is that we can expect less lavish food spreads at society functions during future annual meetings. Budgets for food at both society-wide and divisional socials will be capped at amounts slightly less than we are used to, so look forward to more chips and salsa, less roasted asparagus. Hotels charge egregious amounts of money for catered food, so this is not a trivial thing.

Although spending caps are not ideal, I hope you will agree that SICB generally and DVM specifically remains an extremely generous supporter of student members (our future, after all) in all respects. The Executive Committee and Financial Committees are looking for other ways to save money and increase income, and despite these limits, the future of the Society looks rosy. Please feel free to contact me with comments or questions (kurt.schwenk@uconn.edu). Have a great spring and summer.

Message from the Program Officer

Jeff Walker

Kudos to all for a most excellent Phoenix meeting. Great organization, great site, great science, great seeing old friends and meeting new ones. We should all extend our sincerest appreciation to the organizers of the three DVM sponsored symposia, including Frietson Galis, Dave Carrier, Shawn Vincent, Simon Lailvaux, Anthony Herrel, Tim Higham and Peter Wainwright. The many, many concurrent sessions with DVM related talks kept our minds (and bodies) busy, but this is good as it highlights the strength of our division at these meetings! Again, the poster sessions were a huge success and I would strongly encourage everyone to consider this format. At our next annual meeting in San Antonio, there will be several symposia that should be of broad interest to DVMers, including:

1. Going with the flow: ecomorphological variation across aquatic flow regimes (Gabriel Rivera and Rick Blob)
2. Vertebrate head segmentation in a modern Evo-Devo context (Shigeru Kuratani and Thomas Schilling)
3. Aeroecology: Probing and Modeling the Atmosphere--The Next Frontier (Thomas Kunz and Nick Hirstov)
4. Evolution vs. Creationism in the classroom: Evolving Student Attitudes (Eric Lovely).

It is also time to organize creative, integrative symposia for our 2009 annual meeting in Boston. Think: what is the cutting edge of my field? What are the common themes that my field is pursuing and how are we pursuing these? What developments have occurred in the last few years that have advanced my field into new directions? Or maybe, how have these disparate fields come together to form a new discipline? Remember to seek both internal and external sponsorship for your proposed symposium. Internal sponsorship is easy, simply talk to the program officers of the relevant divisions. External support is well worth the effort as the society will waive registration fees for symposium organizers that actively seek external support for symposia. Be creative with external sources of support. And remember that certain external sponsors, such as NSF, strongly encourage diversity among symposium speakers. Given that a typical, full-day symposium has only eleven speakers, symposium organizers should consider contacting colleagues to submit a contributed paper to a complementary session. Finally, if your symposium idea is simply too cutting edge to wait until 2009 Boston, then you can organize a thematic contributed session around the idea for the 2008 San Antonio meeting (please contact the society's program officer Linda Walters if you wish to do this). Further information for symposium organizers is available on the SICB website at <http://sicb.org/guidelines/symposiaguidelines.php3>. I hope everyone has a productive spring and summer and look forward to seeing the abstracts for San Antonio in September.

Message from the Secretary

Gary Gillis

I'd like to start by thanking whatever committee was charged with scheduling the site of this year's meeting. The weather, food and hotel/conference center were great! Not surprisingly, the meeting was good fun as well, and I trust all of you enjoyed the talks, posters and informal conversations about science. Now onto the business at hand...

DVM Business Meeting Notes (1/5/2007)

Announcements:

1. The Society's officers stopped by to introduce themselves and remind us that the Society's journal, *Integrative and Comparative Biology*, is in good shape, with a nice new format and speedy online publishing of new papers. Melina Hale confirmed that the journal is not on PubMed yet and also clarified that the journal has the right of 1st refusal for papers based on society symposia.
2. Tony Russell told us of the upcoming International Congress of Vertebrate Morphology (ICVM) in Paris this summer. In addition, as the president of the Canadian Society of Zoologists, he clued us in to the "morphology-friendly" environment of that society and offered a standing invitation to attend their annual meetings (in Montreal in 2007)
3. I announced that the society is in the process of retooling its website and that your pictures, videos, flash animations etc. would make excellent additions to the DVM page. Please send any such materials to me (ggillis@mholyoke.edu) and you'll be hearing from me if I don't hear from you.
4. Jeff Walker listed the symposia for next year (see Jeff's report above). He also announced that the deadline for submitting ideas for symposia for the 2009 meeting in Boston is August '07. Email Jeff with your ideas (walker@maine.edu).
5. Adam Summers apologized for any problems people had with student rooming issues, but was pleased to report that 361 students were supported with rooms at this year's meeting and 30 students had their registrations waived. In addition, this year \$23,000 was given to students in the form of grants-in-aid-of-research, and \$8,000 in the form of travel grants.
6. Bill Zamer from NSF shared his thoughts on some of the changes in IOB at NSF. Many of us likely fall under the umbrella of the Physiological and Structural Systems Cluster in the Division of Integrated Organismal Systems. He suggested that "systems-based approaches" were important in our applications for NSF grants and encouraged us to have a look at Jim Collins' presentation on integrative biology in the early 21st century (go to the Phoenix meeting link on the SICB website to view the presentation).
7. Beth Brainerd announced that Mark Westneat and Sharon Swartz are up for election to Chair-Elect this spring (see below for their abbreviated cv's and statements). In addition, Beth announced that the tradition of giving a book prize to the D. Dwight Davis award winner has been restored, and this year it is a copy of O.C. Marsh's 1880 monograph on extinct toothed-birds of North America.

Much of the remaining part of the meeting was spent discussing the issue of identity for DVM in the context of the newly formed Division of Comparative Biomechanics. Several members expressed potential concern about DVM membership and session attendance (which will be monitored closely in coming years), and it was made clear that careful planning of the timing of business meetings between the various Divisions that attract our membership is essential. In the end, most of us still consider DVM as our home-base and thus it will surely remain a vital division.

As the final order of business, Beth passed the reins (reign) of Division chair onto Kurt Schwenk, the self-professed "bald guy that's not Ken Dial" who quickly inspired us with his visions as the new "commander". On a serious note, Kurt did announce that he is on the editorial staff at the Journal of Experimental Zoology A, and that they are excited to receive interesting work in the field of functional vertebrate morphology. Please see the final section of this newsletter for more detail.

2007 Student Award Winners

Davis Award(Tie)

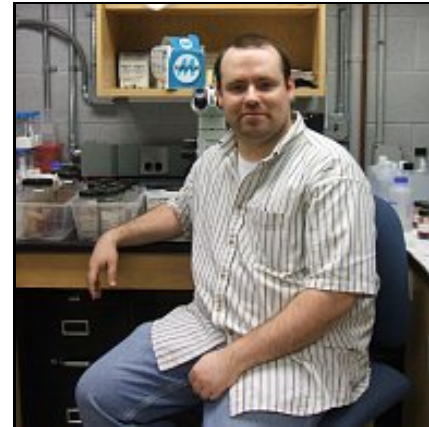
Diego Sustaita

Davis Award (Tie)

Cally Harper

Poster Award

Nathan Bird



At this year's meeting, the excellence of our student speakers was reflected in a shared D. Dwight Davis award. Both Diego Sustaita (University of Connecticut) and Cally Harper (UNC Wilmington) were recognized for their important contributions to vertebrate morphology. Diego's talk, coauthored with Fritz Hertel (Cal. State Northridge), was entitled "Bite and grip performance in relation to killing behavior of North American accipiters and falcons". In it, he showed that differences in actual bite and grip performances among these birds complemented previous musculoskeletal morphological analyses, and that such differences reflect distinct predatory strategies in which falcons use their beaks to deliver powerful bites to kill prey whereas accipiters rely on their feet and tightly gripped talons and toes (I think I win the award for longest sentence in the newsletter...). Diego's future work will involve studying feeding performance in shrikes in relation to their morphological and ecological variation. Cally's talk, coauthored with a number of colleagues from Wilmington, was entitled "The gross morphology and fiber architecture of the melon in bottlenose dolphins, *Tursiops truncatus*". According to Cally, the melon is a specialized lipid structure that lies within the dolphin forehead and functions in the transmission of echolocation sounds. Her work involves analyzing fibrous networks throughout the melon and their associated connections to muscles and surrounding blubber. In particular, her work explores how dolphins might use facial muscles to alter the shape and internal pressure of the melon, which in turn could affect sound propagation. This work fits nicely within the context of her larger goals of understanding better the evolution of water-based communication mechanisms in vertebrates in relation to cranial morphology.

Nathan Bird, of George Washington University, was awarded the DVM poster prize at this year's meeting. His poster, co-authored with Pat Hernandez (also of GWU), was entitled "Morphological variation of the Weberian apparatus in cypriniform fishes". In it he showed that structural components of the apparatus that are directly involved with hearing (i.e., the ossicles themselves) exhibit very little morphological variation whereas accessory structures such as ribs and neural arches exhibit considerably more variability. Nathan is also using zebrafish to study genes involved in the development of the Weberian apparatus and eventually hopes to understand the genetic bases of evolutionary change in this novel and complex morphological structure.

Congratulations once again to our award winners and all the other DVM students who consistently present excellent work at the SICB meetings!

Message from the Student/Postdoc Representative

Russ Main

The 2007 SICB meeting in Phoenix was another success in regards to the events and programs organized by the Student and Post-doc Affairs committee. The Graduate Student and Post-doc Orientation was very well attended yet again, with around 300 people on hand to hear presentations concerning how to make the most of the meeting's academic and social events. This year's SPDAC workshop entitled "What Editors Want" took place on the last night of the meeting and was attended by about 200 students and post-docs. Editors from various journals representing the different divisions of SICB discussed what types of research their journals cover and the submission and publication process. The editors' presentations and the question and answer session were insightful and appreciated by those in attendance. Thank you to those members of DVM who participated in the workshop.

Lastly, if there are graduate student or post-doctoral members of DVM who wish to volunteer to participate in planning and organizing SPDAC events, please send me an e-mail (rpm74@cornell.edu) and I will notify the SPDAC committee chair of your interest.

Proposed Bylaws change for D. Dwight Davis Award

As many of you probably remember, at the Orlando business meeting there was much discussion of changing some of our current bylaws for the D. Dwight Davis award. Specifically, the chair of the awards committee that year, Dave Carrier, suggested that students be limited in the number of times they compete for the award. An important motivation for this was judging quality. Judges are overwhelmed by the number of presentations they need to evaluate (~ 40 in a given year), and many presentations are of preliminary work. If students are limited to competing only two times, this will reduce the load on judges, allowing them to put more time/thought into their evaluations. In addition, having fewer student talks will allow us to have a single "student session" at the meeting with minimal conflicts, allowing us all to see the work of our Division's amazing students. Below is the actual text of the current and proposed bylaws regarding the Davis Award. Please participate in the online vote!

CURRENT

Article XV. Student Award - D. Dwight Davis Award

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1. From the D. Dwight Davis fund of the Division a \$100.00 prize may be given for an outstanding paper presented by a student (or by a new Ph.D. who received the degree no more than 12 months before the meeting at which the paper is presented). In addition, a certificate will be given as well as an appropriate gift to reflect Vertebrate Morphology. The work must be original, and must have been carried out by the student or students. The award is made only on the unanimous decision of a committee of three appointed before the meeting by the Chair of the Division. The guidelines for the award are as follows:

a. The intention of the award is to recognize significant conceptual, observational, and experimental contributions to the field of vertebrate morphology. These shall be the major criteria for selection. Only outstanding work is to be recognized.

b. Acceptable standards of visual aids and oral presentation shall be required for consideration. Spectacular presentation techniques shall not by themselves qualify a paper.

PROPOSED NEW

Article XV. Student Award - D. Dwight Davis Award

1. From the D. Dwight Davis fund of the Division a \$100.00 prize may be given for an outstanding paper presented by a student (or by a new Ph.D. who received the degree no more than 12 months before the meeting at which the paper is presented). The award is made only on the unanimous decision of a committee of at least three members, appointed before the meeting by the Chair of the Division. The guidelines for the award are as follows:

a. Each student shall be allowed to compete for the D. Dwight Davis Award no more than two times.

b. The work must be original, must have been carried out by the competing student, and the student must be the first author. Co-authored papers may be entered into the competition, but the student must describe explicitly the contributions of all of the co-authors as part of the presentation. Failure to make the contributions of all listed co-authors clear may be grounds for disqualification.

c. The intention of the award is to recognize significant conceptual, observational, and experimental contributions to the field of vertebrate morphology. These shall be the major criteria for selection. Only outstanding work is to be recognized.

d. Acceptable standards of visual aids and oral presentation shall be required for consideration. Spectacular presentation techniques shall not by themselves qualify a paper.

Elections: Candidates for DVM Chair-Elect

SHARON SWARTZ, PhD



Current Position: Associate Professor of Ecology and Evolutionary Biology and Engineering, Brown University

Education:

Ph.D. 1988: The University of Chicago

B.A. 1981: Oberlin College (High Honors).

Professional Experience:

1996-2007: Associate Professor, EEB and Engineering, Brown University

1990-1996: Assistant Professor, EEB and Engineering, Brown University

1987-1990: Assistant Professor of Cell Biology & Anatomy, School of Medicine, and Anthropology, College of Arts and Sciences and Graduate School, Northwestern University.

Awards and Honors:

2000: Dean's Excellence in Teaching Award, Brown Medical School

1999: Hooder, Brown University School of Medicine

1999: Winner, American Medical Women's Association Gender Equity Award

1995-1999: Marshall, Brown University School of Medicine Commencement Exercises

1995: Nominee, American Medical Women's Association Gender Equity Award

1992: Mary Putnam-Jacobi Award for the Outstanding Woman Medical Faculty Member, Brown Women in Medicine

1986: Harper Memorial Doctoral Fellowship, The University of Chicago

1982-1985: Searle Graduate Fellow, The University of Chicago

1981: graduation with High Honors in Biology, Oberlin College

1980: Sigma Xi, Phi Beta Kappa

SICB Activities: I have been a DVM member since 1982, and since that time have chaired numerous contributed paper sessions and served several times on the Student Awards Committee and Nominating Committee. I have participated in the Northeast Regional DVM Meetings since their inception in 1991, and have hosted or co-hosted Regional DVM Meetings at Brown three times since then.

Other Memberships: International Society of Vertebrate Morphology; American Society for Biomechanics, American Physical Society ñ Division of Fluid Dynamics, North American Symposium on Bat Research.

Research Interests: Evolutionary and functional morphology of mammalian locomotor systems; biomechanics of animal flight; comparative biomechanics of vertebrate skin and bone; size and scale issues in biological structure; novel visualization approaches for complex data

Statement of Goals: Our discipline - if it is, indeed, a discipline! - is transforming at an astonishing rate. As I recently told a new graduate student in an unrelated field, very few of my present research activities would have been even imaginable to me when, as an undergraduate, I made a decision to pursue a career with vertebrate morphology at its center. On the other hand, below the surface of immense technological change, we retain deep connections to our historical roots; many of the kinds of questions that have driven students of vertebrate form for decades remain vital, even as the details of how we try to answer our questions may change. The study of morphology will continue to become more multidisciplinary; it takes no seer to predict that interconnections of morphology to physiology, systematics, evo-devo, biomechanics, and biochemistry will continue to grow, and engineers, computer scientists, mathematicians, and others will become more and more familiar contributors at our meetings and in our journals. The recent creation of a SICB Division of Comparative Biomechanics is one striking - and, to me, very exciting - hallmark of these trends, as are the increasing prominence of interdisciplinary funding initiatives (*e.g.* Frontiers in Integrative Biological Research, Assembling the Tree of Life, and the National Evolutionary Synthesis Center, all through NSF). Over the next ten years, vertebrate morphology faces important challenges that arise from this juxtaposition of rapid change and commitment to the traditional core of morphological study, and the DVM should, I believe, play a critical role at this key moment in our scientific 'ontogeny'. We must chart a course that enhances the links between vertebrate morphology and other growing disciplines without sacrificing the unique character of our field; that supports our graduate students and young faculty and continues to attract wonderful new scientific talent; and that focuses our vision at regional, national and international levels. As a single individual, I could not hope to effectively meet these challenges; as Division chair, I would be honored to integrate, motivate, and inspire our members to work together for the DVM community.

MARK WESTNEAT



Current Position: Curator of Zoology (Fishes), Field Museum of Natural History, Chicago

Education:

Ph. D. 1990. Duke University.

B. A. 1984. The College of Wooster, Ohio.

Professional Experience:

1997-2006: Associate Curator of Zoology, Field Museum of Natural History.

1992-1997: Assistant Curator of Zoology, Field Museum of Natural History.

1992- 2007: Lecturer, Department of Organismal Biology and Anatomy and Committee on Evolutionary Biology, University of Chicago.

1990-1991: Postdoctoral Research Associate: Department of Neurobiology and Psychology, Duke University.

Awards and Honors:

1990: D. Dwight Davis Award for Best Paper in Vertebrate Morphology: Division of Vertebrate Morphology, American Society of Zoologists.

1989: Cocos Foundation Training Grant in Morphology. Duke University.

1988: Raney Award in Ichthyology, American Society of Ichthyologists and Herpetologists.

1987: Stoye Award for Best Student Paper in Genetics, Development, and Morphology: American Society of Ichthyologists and Herpetologists.

1984-1988: Graduate Student Teaching Assistantship, Duke University.

1984: C.G. Bookhout Scholarship: Duke University Marine Laboratory.

SICB Activities:

Program Officer, Division of Vertebrate Morphology, American Society of Zoologists, 1994-96.

Nominating Committee, Division of Vertebrate Morphology, SICB 1999-2000.

Local Committee, Chicago 2001, organized SICB social at Field Museum of Natural History

Research Interests:

1. Phylogenetic systematics and evolution of fishes: molecular and morphological evolution, evolutionary biomechanics, and phylogeny of diverse marine fish families.
2. Biomechanics and physiology: behavior, muscle physiology and neuromotor patterns of feeding, respiration and locomotion in organisms ranging from insects to fishes to mammals.
3. Modeling of musculoskeletal systems: mechanical design, muscle models and computer modeling in biomechanics.

Other Memberships:

American Association for the Advancement of Science, American Society of Ichthyologists and Herpetologists, International Association of Vertebrate Morphologists, Neotropical Ichthyological Association, Sigma Xi, Society of Systematic Biologists

Goals as President-Elect:

It is an honor to be nominated to be DVM Chair (a.k.a. DVM Commander, according to Kurt!). The central issue for DVM in the next few years will be to assess the impact of the new Division of Comparative Biomechanics on our membership numbers and the health of our science at the annual meetings. I am deeply interested in this dynamic, because DVM will always be my home base in SICB. It is where I grew up, and I know that many of you feel the same way. On the other hand, what a great thing to have a home for biomechanics, and I will list that on my name tag too (second, of course, after DVM). I propose that we take the following actions to keep DVM vibrant and also take advantage of integration with DCB. First, I want to monitor the data on DVM member and abstract numbers so that we know if there is a problem at home in DVM. Second, we should try to reenergize some of the formerly more active areas of DVM such as classical comparative and evolutionary morphology, explore the recruitment of members in other fields such as biological anthropology and build stronger ties with Developmental Biology. Third, we should embrace Biomechanics with joint symposia and sessions on vertebrate function that highlight the I in SICB. DVM will stay strong and flourish because our science is compelling and SICB is the best scientific meeting of the year, every year.

Publishing opportunity

As mentioned at the Phoenix business meeting, I want to call members' attention to the new editorial leadership and direction of the Journal of Experimental Zoology A (Ecological Genetics and Physiology). Günter Wagner is the new Editor-in-Chief and I am one of the Associate Editors. We are soliciting high quality submissions of all sorts, but especially want to encourage the morphological community to consider the journal. The work does not need to be explicitly experimental, despite the title, and we are happy to consider review and perspective pieces, as well as original research. If you have an idea for a paper or want additional information, feel free to contact me. I will also be approaching some of you to solicit papers. All submissions are handled electronically, turnover is fast and one full page of color is free (as many figures as can fit!). The journal is very widely indexed and available electronically. -Kurt Schwenk