

Division of Systematic and Evolutionary Biology (DSEB): 2001 Spring Newsletter

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Message from the Chair

Miriam Zelditch

It is a pleasure to report that our meeting in balmy Chicago was a great success. Our society is in excellent shape, both financially and intellectually. Our division is also in good shape, although attendance at business meetings is sparse. That may be due to calling these meetings "business" meetings, connoting tedious reports, a focus on bureaucratic details, and a rigid adherence to Robert's Rules of Order. In our division at least, that is not the case at all. Now that our scientific sessions are organized topically rather than around divisions, the business meetings are particularly important for maintaining divisional identity. As systematists, we have an obvious intellectual identityour phylogenetic perspective on comparative and integrative biology. This underlies our various divisional activities, especially our sponsorship of symposia and our workshop, Phylogenetics for Dummies. Business meetings are where we can meet to discuss our plans, and also to respond to initiatives from the Executive Committee. Our last meeting raised a number of interesting topics, including the proposed approach to enhancing diversity in SICB and ideas about how to use the available money for innovative programming. Graduate students, in particular, might be put off by the notion of a "business" meeting, but think of these as divisional discussions about issues of importance to our society as a whole.

I am pleased to announce that the DSEB awarded the Best Student Paper award to Jessica Garb, of the University of California at Berkeley, for her paper "Parallel patterns in the Pacific? A comparison of phylogenetic diversification in crab spiders (Araneae: Thomisidae) across three Polynesian archipelagos" (see abstract page 195).

Please notice that we are holding divisional elections and vote!

Message from the Secretary

Valerie Cappola

In Chicago the DSEB business meeting was not well attended, but we did discuss ways to encourage more people to participate in these divisional meetings. One thing I learned from those present was that few people are visiting the SICB website (www.sicb.org). This website has been modified over the last year or so. It has

useful information for all, but students looking for fellowships or jobs will find it very helpful. Just click on "for SCIB members" and choose job and fellowships or any other topic.

It is time for another election. In order to have some overlap between the current officers and those newly elected, we are having the election this year. The candidates are Ken Halanych and Rich Mooi for Chair elect, Marta J. deMaintenon and Donald L. Swiderski for Program Officer elect, and Ingrid M. Kaatz is running unopposed for Secretary. The candidate information is included in this newsletter, but our division needs to vote by mail. When the ballot arrives, please take the time to fill it out and mail it back.

Message from the Program Officer

Anne Maglia

The Chicago meetings proved to be full of activity for DSEB. Along with sponsoring several contributed paper sessions, we also co-sponsored the symposium "The Lesser-Known Protostome Taxa: Evolution, Development and Ecology." Also, as part of our ongoing series of hands-on workshops designed to help non-systematists use systematic tools, we sponsored the well-attended second "Phylogenetics for Dummies" workshop. This year's topic was "Picking a Tree from the Forest," in which participants discussed and evaluated different methods of analyzing data, the use of diverse data sets, and the various methods of showing support for trees. Congratulations to Jessica Garb, winner of the DSEB Best Student Paper Competition for her excellent poster on crab-spider biogeography.

DSEB Candidates for Election

Divisional Chair Elect

Ken Halanych

Current Position: Assistant Scientist, Woods Hole Oceanographic Institution; Adjunct Scientist, Marine Biological Laboratory.

Education: Ph. D. 1994. University of Texas at Austin; B.S.. 1988. Wake Forest University

Professional Experience: Postdoctoral fellow, Rutgers University, (Molecular evolution and systematics of marine invertebrates); Postdoctoral fellow, University of Pretoria, South Africa. (The molecular phylogenetics and evolution of Lagomorphs.)

SICB Activities: 2001 Secretary Division of Evolutionary and Developmental Biology; 2000 Participant of "Hox gene and morphological evolution" symposium; 1998 Co-organizer "Evolutionary relationships of Metazoan Phyla" symposium; 1998 DIZ best student paper committee; 1990 Session co-chair; 1990 Local organization committee for San Antonio meeting.

Other Memberships: Society of Molecular Biology and Evolution, Society of Systematic Biologists, American Association for the Advancement of Science

Research Interests: Evolutionary origins and relationships of major metazoan lineages (including body plan origins and evolution); molecular systematics and phylogenetic theory, invertebrate organismal evolution (especially lophophorates), diversification of hydrothermal vent fauna (especially pogonophorans), lagomorph (rabbits and pikas) phylogenetics.

Statement of Goals: The main goal of my tenure in office would be to promote an awareness of the power and utility of using an accurate phylogenetic framework in comparative biology. Through the use of symposia and workshops, DSEB should strive to educate other scientists and show them that they can obtain more information, and in some cases more accuracy, if additional attention is given to how they choose or reconstruct their tree. I also believe that DSEB should be willing to take a similar role with methods used to decipher intraspecific evolutionary history (e.g., phylogeography, coalescence approaches). This increases awareness of DSEB, combined with an aggressive campaign, should help alleviate some of the small membership problems. Additionally, I think DSEB should take a leadership role in the incorporation of underrepresented groups in the society.

Richard J. Mooi

Current Position: Curator and Chairman of Invertebrate Zoology Geology, California Academy of Sciences; Scientific Co-ordinator of SFBay:2K; and Research Professor, Department of Biology, San Francisco State University.

Education: B.Sc., University of Toronto, 1981; M.Sc., University of Toronto, 1983; Ph.D., University of Toronto, 1987.

Professional Experience: Lecturer, 1986, University of Toronto; Postdoctoral Fellow, 1988–1990, Smithsonian Institution; Assistant Curator, California Academy of Sciences, 1990–1995; Organizer, International Echinoderm Conference, San Francisco, 1996; Associate Curator, 1995–2000; Full Curator, 2000–present; Research Professor, San Francisco State University, 1998–present.

SICB Activities: Participant in and Co-chair for symposium, Phylogenetic Systematics, Biogeography, and Marine Biodiversity, 1995; Participant in symposium, Evolutionary Relationships of Metazoan Phyla: Advances, Problems and Approaches, 1998; Participant in and Co-organizer for symposium, The Evolution of Asteroid Echinoderms: Morphology, Molecules, Development and Paleobiology, 1999.

Other Memberships: California Academy of Sciences (elected fellow), Willi Hennig Society (elected fellow), Society for Sedimentary Geology, Society of Systematic Biology, The Paleontological Society, American Association for the Advancement of Science, American Microscopical Society.

Research Interests: Although a functional morphologist by early training, I rapidly switched to phylogenetic systematics in a search for a robust evolutionary framework for my observations on sea urchin structure. My research strives to document and understand the origin of novel morphologies by integrating data from phylogenetics, embryology, and paleontology with overarching concepts such as heterochrony and heterotopy. The focus of these efforts is the echinoids, which offer a wealth of data that make studies in all of these areas feasible. My earlier research dealt largely with the origins and subsequent diversification of the sand dollars. However, in the past few years I have been developing a large-scale theory of the homologies of echinoderm body wall that can be applied to all members of the phylum. I have also worked on the application of phylogenetic principles to linguistics, and on other aspects of phylogenetic theory.

Statement of Goals: By bringing together biologists representing diverse disciplines under the same tent, the SICB continues to play a central role in raising consciousness surrounding the importance of phylogenetics

and systematics to all aspects of evolutionary biology. This is particularly true for the symposia that the Division of Systematics and Evolutionary Biology has made a central part of the SICB program. These symposia have provided, and continue to provide important venues for established colleagues and students alike. Most significantly, we have not shied away from making sure that students get invited and encouraged to attend these symposia to present the burgeoning research that complements the overview function that the symposia already perform. Support of these endeavors is paramount, and I would work to make our programmatic agenda reinforce the importance of phylogenetic systematics to understanding evolutionary phenomena, thereby bringing this message directly to current and future biologists. In my opinion, the most satisfying events at SICB have been those that integrate whole animal and molecular approaches, synthesizing disparate data through powerful analytical tools that continue to be sharpened. DSEB must continue to regard these events a priority, because there are too few other organizations that are in a position to make them happen.

Divisional Program Officer Elect

Donald L. Swiderski

Current Position: Adjunct Research Investigator, University of Michigan Museum of Zoology

Education: B.S., Geology, Michigan State University, 1981; M.S., Geology (Paleontology), Michigan State University, 1986; Ph.D., Zoology, Michigan State University, 1990.

Professional Experience: Research Assistant, 1991–1995, Thoracic Surgery Research Laboratory, Department of Surgery, University of Michigan Medical Center; Research Associate, 1995–1996, Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, University of Michigan Medical Center; Adjunct Research Investigator, 1996–present, Mammal Division, University of Michigan Museum of Zoology.

SICB Activities: Organizer for DSEB Symposium "Beyond Reconstruction: Using Phylogenies to Test Hypotheses about Vertebrate Evolution", 2000, (cosponsored by DVM and Society of Vertebrate Paleontology), Co-organizer (with A. Maglia) for DSEB workshop "Systematics for Dummies", 2000 and 2001.

Other Memberships: Society of Systematic Biologists, American Society of Mammalogists, Society for the Study of Evolution, Society for the Study of Mammalian Evolution, American Association for the Advancement of Science

Research Interests: My main area of research is the evolution of skeletal morphology in mammals, especially the evolution of shapes of the bones. Phylogenetic studies are an important component of this research, providing information crucial to understanding the history of the morphology, which in turn gives us a more complete understanding of current function. Accordingly, my work also includes studies that explore the limitations of current approaches to phylogenetic analysis. These studies include comparisons of levels of homoplasy in different organ systems of a clade of freshwater snails, and an evaluation the congruence among those systems. Currently, I am engaged in a similar study evaluating cytochrome b sequences and morphology of ground squirrels. I have also participated in a series of studies on the appropriateness of using of various kinds of quantitative morphometric variables to generate hypotheses of character transformation.

Statement of Goals: My goal as DSEB program officer would be to continue efforts to raise the profile of

our division, both within SICB, and among the general biological community. Our division is small in terms of primary membership, and perhaps as a consequence, our contributed sessions generally include few papers. This has been viewed at times as an embarrassment to the division, but small sessions are not indicative of poor quality. As a chair of many past sessions, I can attest to the high quality of most presentations. We have begun to promote the quality of these presentations by starting a student award program, but we need to take other steps as well. . We also must convey to our colleagues (in other divisions and in other societies) the crucial role that systematic analyses must play if "integrative and comparative" studies are to explain evolutionary phenomena. I believe we can most effectively achieve these goals through development of symposia and workshops that address the question: "What can systematics do for you?" The "using phylogenies" symposium, and the associated workshop on character mapping, should be only the beginning. However, these programs will only be successful if the audience for whom they are developed shows up to hear the presentations. Thus, I intend to work with symposium and workshop organizers on the development and publicity of programs that draw participants, sponsorship, and audience from other divisions, and from other societies.

Marta J. deMaintenon

Current position: Assistant Professor, University of Hawaii at Hilo, Marine Science, 1999 – present; Research Associate, Santa Barbara Museum of Natural History, Santa Barbara, CA, Invertebrate Zoology; 1998 to present; Affiliate Graduate Faculty, University of Hawaii at Manoa, Ecology, Evolution and Conservation Biology, 2001 – present.

Education: B.S., Biology (Marine Biology), Millersville University of Pennsylvania, 1987; M.S., Biology Living Resources, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 1990; Ph.D.: Integrative Biology, University of California, Berkeley, 1996.

Professional Experience: American Museum of Natural History, New York, NY Postdoctoral Fellow, Invertebrates, 1998 – 1999; Santa Barbara Museum of Natural History, Santa Barbara, CA, Visiting Postdoctoral Curator, Invertebrate Zoology, 1997 – 1998; University of California, Berkeley, CA, Museum Scientist, Museum of Paleontology, Paleobotany Section, 1997; University of California, Berkeley, CA, Graduate Student Instructor, Department of Integrative Biology, 1991 to 1996 (not continuous); University of California, Berkeley, CA, Graduate Student Researcher, Museum of Paleontology, 1990 to 1996 (not continuous); Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL, Graduate Teaching Assistant, Marine Biology Fisheries, 1989 to 1990.

SICB Participation: Member since 1996

Other Memberships: American Malacological Society; American Microscopical Society, Sigma Xi, Society of Systematic Biologists, Willi Hennig Society

Research Interests: My primary research interests include phylogenetic systematics and comparative molluscan anatomy and development. I have two main project areas. The first is focused on reconstructing the phylogenetic relationships of columbellid gastropod molluscs using characters from anatomy and morphology, and evaluating hypotheses regarding their historical ecology. My other projects are focused on documenting patterns of organogenesis in gastropod reproductive systems, with a goal of using these systems as a model to understand the significance of various heterochronic changes in the evolution of molluscan organogenetic patterns.

Statement of Goals: DSEB occupies an interesting position in the SICB divisions, being one of the divisions with which the majority of members are affiliated to some degree, but one that few people list as a primary

affiliation. As such, the programs sponsored by DSEB need to promote not only good systematics, but also serve to show how systematic biology is fundamental to many aspects of comparative biology, and to educate SICB members on systematic methods. My goal as program officer of DSEB will be to promote programs and symposia that will showcase the use of systematic and evolutionary biology in various biological disciplines, and to continue promoting educational functions such as the workshops associated with symposia at the annual meetings.

Divisional Secretary (only one candidate)

Ingrid M. Kaatz

Current Position: Research Associate, Boston University Marine Program, Marine Biological Laboratory, Woods Hole MA.

Education: B.S., with Honors, Ecology, Evolution and Systematics, Cornell University, Ithaca, New York 1985; M.S., Science Education, Cornell University, 1992; Ph.D., Zoology, SUNY College of Environmental Science and Forestry, Syracuse, New York, 1999.

Professional Experience: Teaching Assistant Cornell University Ithaca, NY; Teaching Assistant SUNY–ESF Syracuse, NY; Visiting Instructor SUNY–ESF Biological Field Station Beaver Lake, NY

SICB Participation: Member since 1995; Abstract/Presentation 1999, 1998, 1997, 1995.

Other Memberships: SSE Society for the Study of Evolution since 1992, ABS Animal Behavior Society since 1992, ASIH American Society of Ichthyologists and Herpetologists since 1992, SSB Society of Systematic Biologists, SIGMA XI since 1992

Research Interests: Comparative Biology, Evolution of Animal Communication Systems, Morphology, Bioacoustics

Statement of Goals: As a member of SICB I have presented work related directly to the question of how comparative studies can enhance our understanding of how communication systems evolve. In particular I have addressed the relationships between morphological structure and function and more broadly how signal design diversity may be related to behavioral and ecological diversity. While my personal research focus is on how the morphology and behavior of acoustic communication of fishes evolves I would nurture a dialog across communication modalities with researchers interested in the evolution of communication in general. Signal diversity and design can be seen as an interdisciplinary area of inquiry spanning from sensory perception to morphology of signal producing mechanisms to whole organisms changes in behavior. As the secretary of the Division of Systematics and Evolutionary Biology I would like to encourage more researchers to consider the value of the comparative method. I also would also contribute actively to the development of workshops that help SICB members and guests learn more about how to potentially apply the comparative method to their own research.