



Division of Invertebrate Zoology

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DIZ Officers & Representatives

James McClintock
Chair 2012-2015

Erika V. Iyengar
Secretary 2010-2013

John Zardus
Program Officer 2011-2014

Karen Chan
Student/Postdoc Rep. 2011-2014

Jennifer Burnaford
Libbie Hyman Memorial Scholarship Committee Chair

Robert W. Thacker
ICB Editorial Board Representative 2010-2015



Jim McClintock - Feb 2012 - near Palmer Station, Antarctica



Doing marine science along the Antarctic Peninsula - Feb 2012

Message from the Chair

James McClintock

Fellow Invertebrate Zoologists:

Greetings from Palmer Station, Antarctica where I am set to begin an NSF-funded research program on ocean acidification. The recent January SICB meeting in Charleston, South Carolina, was a huge success by any measure. The record breaking attendance was augmented by droves of student participants and a palpable and infective level of enthusiasm. Despite the convention center being located some eight miles from the downtown historic district, most DIZ members made it to the city's historic district to take in the sights and enjoy a meal at one of the outstanding restaurants.

John Zardus, our Program Officer, did a stellar job of facilitating another remarkable slate of DIZ sponsored symposia in Charleston. DIZ has established itself as one of the most innovative and productive divisions in this regard. And thanks to the success of our society journal – *Integrative and Comparative Biology* – which I am happy to report has continued to climb the ranks in terms of its impact factor and has recently been included in pubmed (medline), I suspect we will continue to see the contributed symposia papers blossom into print. Thanks to John's considerable efforts this past fall, the success that DIZ enjoys in symposia will continue in 2013 in San Francisco. DIZ-sponsored or co-sponsored symposia for San Francisco include a society-wide symposium on the phenotypic plasticity and evolution of gender roles (Janet Leonard), and divisional symposia on keeping time during animal evolution (Ann Reitzel and Ann Tarrant), physiological responses to simultaneous shifts in multiple environmental stressors (Anne Todgham), understanding first order



phenotypes (Suzy Renn), integrating genomics with comparative vision research in invertebrates (Jeanne Serb and Todd Oakley), and assembling the poriferan tree of life (Bob Thacker).

It is already time to start thinking of ideas for symposia topics for the Austin, Texas, SICB meeting in January 2014. Please let John Zardus know your ideas for symposia, and don't hesitate to tap a colleague on the shoulder whom you feel would do a good job organizing and hosting an innovative symposium. It is important that the symposia be "forward looking" and include a diversity of presenters – different ages, genders, stages of career, etc. NSF continues to fund SICB symposia at a record pace. In fact, with one exception, all the divisional symposia held in Charleston, South Carolina, were funded by NSF. The deadline for symposium proposals for 2014 is August 24, 2012.

I want to extend a big "thank you" to Beth Davis-Berg for once again organizing the judging of the Best Student Paper Presentation and Poster Awards. I had the pleasure of preparing and sending DIZ certificates out to the student winners. They were an outstanding group, and you can learn more about our student winners below in this newsletter and when Beth features them on a poster to be displayed at the San Francisco meeting. One of the pleasures of being associated with DIZ is that there is never a problem finding individuals willing to assist in evaluating student oral presentations and posters. This speaks well of the focus of our membership on enhancing and recognizing student success.

Thanks to the brilliant efforts of our past Chair, Dianna Padilla, DIZ now has an annual discretionary budget of approximately \$1000. The funds are the result of a \$5 increase to annual dues. I welcome your suggestions for the dispensation of these discretionary funds on behalf of our division. It was decided at the business meeting in Charleston by a unanimous vote that all residual annual funds be

contributed to the Libbie Hyman Award fund.

Speaking of Libbie Hyman, I will be assisting a superbly talented group of DIZ volunteers to host the next Libbie Hyman auction at the meetings in San Francisco! John Zardus will assist in securing the necessary room space, furniture, and audio equipment, and Brett Burke has agreed to handle money transactions. PLEASE consider contributing auction items – in the past these gifts have encompassed bed and breakfasts, books, t-shirts, etc. And importantly, thanks to the generosity of Rich Mooi at the California Academy of Science, you can ship your auction items ahead of time to San Francisco where they will be stored until the 2012 SICB conference.

Indeed you can send your Libbie Hyman auction items beginning today to:

Dr. Rich Mooi
RE: Libbie Hyman Auction
Department of IZ&G
California Academy of Sciences
55 Musci Concourse Drive
San Francisco, CA 94118
(if via fed ex – the phone number is 415 379 5270)

This coming year we will elect a new DIZ secretary to replace Erika Iyengar when she completes a most successful three year term at the end of the 2013 San Francisco meeting. Dianna Padilla appointed a nominating committee comprised of Amy Moran and Rachel Merz who identified two excellent candidates in (Stephanie) Anne Böttger and Jon Allen. Please review their respective credentials in the newsletter and don't forget to vote when the ballots come out in May!

My thanks to Karen Chan who continues to do an outstanding job as our DIZ representative to the Student/Postdoctoral Affairs Committee. Her job is critical given that students represent the future success of our division.



I am pleased to report that the Society voted this spring to approve the SICB resolution on climate change and ocean acidification. I proposed and wrote the draft resolution, which was then discussed at the SICB Business Meeting and the closing meeting of the SICB Executive Committee in Charleston. It was subsequently edited by President Ken Sebens and members of the SICB Executive Committee. The implications for invertebrates are profound, and it is important that SICB make a public statement on this issue. You can read the resolution at <http://sicb.org/resources/resolutions.php3#climate>.

I want to share with you a few updates about the Grand Challenges effort. Bill Zamer (NSF) gave a nice overview at the opening SICB Executive Committee meeting in Charleston about where SICB stands in this regard. He congratulated SICB for doing a great job over the past three years with developments related to the Grand Challenges. He noted that accomplishments include a series of papers in *ICB*, keynote conference speakers, several workshops, and engagement with other national societies. "NSF has heard you," Bill remarked. The themes Bill noted that have emerged include 1) a need for bioinformatics expertise, 2) ways to lower intellectual, language, and technical barriers between biologists and engineers, 3) ways to lower the barriers between sub-disciplines such as biomechanics, evolution and development, functional morphology, etc., 4) the need to support training in new techniques at all academic career levels, 5) the need for infrastructure for high throughput phenotyping and standards for data collection to allow data mining and meta-analysis, 6) the development of theory and quantitative predictive models associated with organismal biology, and 7) the facilitation of community building consistent with themes to lower barriers. Bill then highlighted the common intellectual themes that have emerged including biodiversity, understanding organisms in a changing environment, genomes and the environment,

synthetic biology, and brain science. The next step NSF welcomes is a prioritized research perspective in the field of organismal biology. In this regard they suggest recruiting "thought leaders" in relevant disciplines, and establishing a national steering committee to obtain community input, synthesize and integrate iteratively, publish priorities, and communicate with funding agencies.

My overall sense is that NSF has indeed been impressed with the SICB's Grand Chal-



Gentoo penguins with a glacier in the background (near Primavera, Antarctic Peninsula, February 2012)



Nell Herrmann, a high school teacher in the NSF PolarTrec program working with NSF PIs Jim McClintock and Chuck Amsler, sets up instrumentation for their ocean acidification and temperature experiments on Antarctic crustose coralline algae and calcified marine invertebrates. Palmer Station, Antarctica, 20 February 2012.



SICB Newsletter

Spring 2012 Issue

Challenges effort to identify key areas of organismal biology for future funding. However, what needs to happen now is for SICB to come up with a plan to pare down the list of areas so that funds can be more strategically allocated. I invite you to share your thoughts in this regard with members of the SICB Executive Committee.



And now for something completely different: a "sponge" reef in Bocas del Toro, Panama. Image submitted by Chris Freeman.

Message from the Program Officer

John Zardus

Dear Division of Invertebrate Zoology,

I hope the New Year has gotten off to a good start for all. The SICB meeting in Charleston was certainly a nice opener for those who could attend. A large and busy

meeting, I think it was a great success. The venue offered ample space and the weather turned quite mild for the latter half of the meeting, which made venturing outdoors enjoyable. The hotel linked to the conference site filled up early but there was availability at other hotels that were nearly as convenient. Al-

though the conference center was somewhat distant from historic downtown Charleston (about 10 miles), chartered shuttle buses made it accessible to conference goers.



John studying barnacles. . .and is there a vertebrate in that picture?

Ten symposia comprised the framework of the program at the Charleston meeting of which DIZ co-sponsored the following seven: *The Impacts of Developmental Plasticity on Evolutionary Innovation and Diversification* (organizers Matthew Wund and Armin Moczek), *Barnacle Biology: Essential Aspects and Contemporary Approaches* (organizer John Zardus), *Poecilogony as a Window on Larval Evolution: Polymorphism of Developmental Mode within Marine Invertebrate Species* (organizers Emily Knott and Damhnait McHugh), *Combining Experiments with Modeling and Computational Methods to Study Animal Locomotion* (organizers Laura Miller and Silas Alben), *Novel Methods for the Analysis of Animal Movement: Spatial and Temporal Structure Across Scales* (organizers Douglas Altshuler, Michael Dickinson, and Andrew Straw), and *Dispersal in Marine Organisms* (organizers Vicki Martin and Sara Lindsay).

Eleven symposia have been selected for the



2013 meeting in San Francisco, California, of which DIZ will be co-sponsoring five regular symposia and one that is society-wide: *Phenotypic Plasticity and the Evolution of Gender Roles* (organizer: Janet Leonard), *Keeping Time During Animal Evolution: Conservation and Innovation of the Circadian Clock* (organizers Adam Reitzel and Ann Tarrant), *Physiological Responses to Simultaneous Shifts in Multiple Environmental Stressors: Relevance in a Changing World* (organizer Anne Todgham), *Understanding First Order Phenotypes: Transcriptomics for Emerging Model Systems* (organizer Suzy Renn), *Integrating Genomics with Comparative Vision Research of the Invertebrates* (organizers Jeanne Serb and Todd Oakley), and *Assembling the Poriferan Tree of Life* (organizer Robert Thacker).

I will provide more information about the venue and program for San Francisco when I return from the Program Officer's meeting in September. Until then, you can at least start planning for a lively and entertaining auction that will be held to raise funds for the Libbie Hyman Award, which assists students in their first-time visits to field stations. If you have items or services you would consider donating for the auction, please refer to President Jim McClintock's message in this newsletter for submission details or contact him with questions.

The clock is now ticking on symposium proposals for Austin, Texas in 2014, which will be due on August 24, 2012. Having just organized a symposium myself, I can attest that it is a valuable and rewarding experience. If high numbers of proposals are submitted, as has recently been the case, it will make for quite a competitive field. I think this is a healthy sign for the society but it does mean that a successful proposal will take careful planning and preparation. If you are considering organizing a symposium, I urge you to contact me early to vet your idea and learn about the submission process. Also, be sure to

examine the symposium proposal guidelines which will soon be posted on the SICB website. In fact, it is none too early to begin working on ideas for West Palm Beach, Florida in 2015. Symposia can be targeted for the division or the society as a whole, but in either case the most competitive proposals are forward-looking, timely, and address diversity in several ways.

Until I greet you again in the fall, may the remainder of your year be full of the wonder of invertebrates and success in pushing back the frontiers of knowledge.



Chris Freeman performing field experiments in Bocas del Toro, Panama.



Settled juvenile of the brooding coral, *Pocillopora damicornis*, onto a biofilm; courtesy of Cawa Tran.



Message from the Secretary

Erika Iyengar

Hello and happy spring! As Jim noted above, I am finishing my term as Division Secretary this year, so there will be an election this spring. Thanks to the work of the nominating committee (Rachel Merz and Amy Moran), we have two excellent candidates who have graciously agreed to run in the upcoming election: Jon Allen and S. Anne Böttger. You can read their candidate statements below, at the end of the newsletter. If you were unable to attend the DIZ business meeting, you can find the minutes below, just ahead of the biographies for the Chair election candidates.

With the excitement of the Libbie Hyman auction building (be sure to check out the hysteria of auction night in San Francisco 2013), we thought it would be a good idea to highlight some of the amazing invertebrate-themed "loot" that will be available for bidding. As such, please let me know if you have any particularly unusual/attractive items that you will be contributing (both small and large ticket items) by sending me a very brief description and ideally a picture. I plan to create a web site to preview some of these items. The address for that web page will be in the fall newsletter.

We already know that we will have some lovely knitted invert paraphernalia from Karen Chan (see pictures of some of these lower down in this newsletter).

Vicki and John Pearse have been supremely gracious enough to once again offer the treat of the opportunity to stay at their house (Bed & Breakfast for 1 or 2 guests, at ocean-front home of John Pearse & Vicki Buchsbaum Pearse, former historic home of Ralph & Mildred Buchsbaum, biologists and friends of Libbie Hyman. 183 Ocean View Blvd., Pacific Grove, CA 93950. Includes full hot breakfast of Vicki's Specials, plus the use of 2 guest cards to the Monterey Bay Aquarium, only steps away! Walk to a diversity of Cannery Row or downtown Pacific Grove restaurants. Conditional on hosts being at home at the desired time, to be mutu-

ally arranged with Buyer. Double bed. No smoking, no pets. Gift good for 1 year; expires January 2014. Estimated Value: \$250-\$300; Suggested Starting Bid: \$200). What could be more enticing than a stay with built-in invertebrate experts??? This may be the perfect add-on vacation after the San Francisco meeting. Come ready to bid!

What do you have that could become a treasure for someone? Any information on planned donations that fit the "unusual" category can be emailed to me at iyengar@muhlenberg.edu. Keep in mind that you do not need to send in anything ahead of time to donate items, you can just bring them with you to the meeting. The night of the auction there will be both items on a table with a silent auction (sheets where people write down their bid, can see other bids, and can bid each other up until the closing time), as well as the typical auctioneer-mediated, raucous rabble-rousing auction for other items. So, any cool invertebrate item, whether it would likely go for \$2 or \$2000 will be welcomed and will find a happy home somewhere! All proceeds go to supporting the next generation of invertebrate sleuths and protectors (aka aspiring stellar students). Thank you!



Some of DIZ out on the town, having a Southern style dinner with fellow invertebrate zoologists. We are so excited to see each other, we can't even focus a camera completely. Glad our research skills and scientific photography are better!



Mangrove sponges in Bocas del Toro, Panama;
courtesy of Chris Freeman

Message from the Student - Postdoctoral Affairs Committee Representative

Kit Yu Karen Chan (Karen Chan)

Dear students and postdoctoral members,

I hope you enjoyed our last meeting at Charleston. With seven DIZ-sponsored symposia and various invertebrate-related sessions, it was such a great time to be an invertebrate lover.

Thank you and congratulations to all presenters. Your contributions made the Annual Meeting of SICB truly exciting. Let me take this opportunity to give a shout out to the Students Presentations Award winners: **Christopher Freeman** (University of Alabama) was presented with the best oral presentation and the Wenner Strong Inference Award. **Diego Castro** (College of Charleston) was awarded the best poster presentation. On

that note, I would like to remind you that the Best Student Presentations are just some of the awards that SICB presents every year. For early career scientists, there is the Grants-in-Aid-of-Research. Women may also want to consider applying for the Dorothy M. Skinner Award, which recognizes women in the early stages of their careers who have demonstrated outstanding scholarship and show high potential for continued excellence in research.

The upcoming 2013 meeting in San Francisco will be exhilarating. Our division will organize an auction to raise money for the Libbie H. Hyman Fund. The Hyman Fund provides assistance to students to take courses or to pursue research on invertebrates at a marine, freshwater, or terrestrial field station. This upcoming auction is a good opportunity to show your creativity. For example, I am knitting invertebrate softies and dishcloths. It is never too early to plan; you can contact our secretary, Erika Iyengar, regarding donations. If you are too busy to put in a donation, you can bid for some invertebrate memorabilia in 2013. No worries, there will be items that fit students' budgets and lots of things to catch your interest.

Focusing on the students and postdoc affairs committee, we organized a workshop entitled "Maximizing Your Potential through Job Applications and Interviews" and put out the "Notes from Above-Ground," which was a guide to get the most out of the SICB meeting in 2012. Feedback is welcomed. Please don't hesitate to contact me if you have any ideas for future workshops or activities or materials that you would like the committee to put together.

Wish you all the best in the Year of Dragon.



Items that are being donated to the Libbie Hyman auction: a knitted brittle star and sea star beret (both created by Karen Chan).

Message from the Student Awards Committee Chair

Beth Davis-Berg

Thanks to everyone who came to Charleston this year, it was a great meeting with excellent student presentations. A special thank you to all the students who presented! I would like to thank the 30 volunteer judges for their time and commitment to the students. This year 37 students competed for best student paper. And the winners are:

Best oral presentation

Winner

Christopher J. Freeman: "Determining the benefits of symbiosis: tracing the products of symbiont nitrogen and carbon metabolism to host sponges using incubations with enriched stable isotopes"



Chris Freeman on Lee Stocking Island, Bahamas



Chris Freeman collecting sponges in Bocas del Toro, Panama

Runner up

Cawa Tran: "Sensory mechanisms utilized by coral planulae to detect settlement cues"



Cawa Tran



Planula larva of the broadcast-spawning coral *Montipora capitata*; submitted by Cawa Tran



Planula larva of the broadcast-spawning coral *Montipora capitata*; submitted by Cawa Tran

Best Poster presentation

Winner

Diego Castro: "Effects of Elevated Oceanic CO₂ on Sperm Motility and Swimming Speed in Sea Urchins: Implications of Ocean Acidification for Fertilization Success"



Diego Castro

Runner up

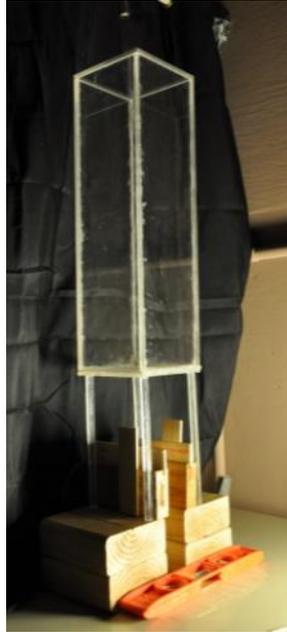
Nicholas Lessios: "Orientation Behavior and Possible Visual Statocyst in a Crustacean found in the Sonoran Desert: *Triops* (Branchiopoda: Notostraca)"



Nikos Lessios rearing *Triops* in an Arizona State University greenhouse (photo: Julia Damerow)



One week-old *Triops longicaudatus* grown from soil in the greater Phoenix area (photo: Julia Damerow)



Acrylic testing chamber in construction for experiments by Nikos Lessios (photo: Julia Damerow)

Message from the Libbie Hyman Scholarship Selection Committee Chair

Jennifer Burnaford

Applications for the 2012 Libbie H. Hyman Memorial Scholarship were due on 1 March 2012. After reviewing the 14 strong applications, we (myself, Will Jaeckle, and John Zardus) are pleased to announce that the 2012 scholarship is being awarded to Sonia Singhal, a first year student in the Department of Biology at the University of Washington. Sonia will use the funds -- \$1311 this year -- to support participation in the 5-week Ecology of Infectious Marine Diseases course at the University of Washington's Friday Harbor Laboratories. This course is focused specifically on the interactions between marine invertebrates and their pathogens. Sonia is pursuing her Ph.D. in the lab of Dr. Ben Kerr. She is interested in determining how different selection pressures affect the methods of infection and dispersal of pathogens in marine invertebrate populations. We congratulate Sonia, and thank everyone for applying.

By supporting a first significant field station experience, the Libbie H. Hyman Award presents students with career-changing opportunities. Our 2004 award recipient, Heidi Weiskel, had this to say about her award: "I was a graduate student at UC Davis when I won the award; it was my first year as a Ph.D. student and I was so grateful to have received it! I used it to go to Friday Harbor during the summer of 2004 and attend two classes: Invertebrate Zoology and Marine Conservation Biology. Those classes—and the researchers/professors/students I met there—changed my career path and my life. I came into graduate school focused on marine policy, but after those classes I realized I wanted to become a marine ecologist. I am still in touch with many of the people I met there."

In order to increase the number of students that we can support, one of our continuing

Adrian M. Wenner Strong Inference Award

Winner

Christopher J. Freeman: "Determining the benefits of symbiosis: tracing the products of symbiont nitrogen and carbon metabolism to host sponges using incubations with enriched stable isotopes"

Please join me in congratulating these outstanding students. I look forward to seeing you all at the next meeting in San Francisco, CA!



goals is to increase the number of awards that can be routinely given out to two per year. To reach this goal, we need contributions to the Scholarship Fund! To contribute, click on Donate to SICB on the SICB home page (sicb.org) or send a check to:

SICB Business Office
Libbie H. Hyman Memorial Scholarship Fund
1313 Dolley Madison Blvd., Suite 402
McLean, VA 22101

Checks should be made payable to SICB and marked as a "Contribution to the Libbie H. Hyman Memorial Scholarship Fund." All contributions are tax deductible. Thanks for your help!



Wow! If I'd known winning an award from DIZ was THIS special, I would have started competing sooner! This is better than winning a game show! (Actually, this is Cawa Tran after her recent PhD defense.)



Triops are worthy of placards in Las Vegas. Who says invertebrates get no love? Take that, slots machines! But wait, where are the crowds? (photo: Michael Smith)

Minutes of the DIZ Business Meeting 2012

[Click here for PDF file on SICB.org](#)

Candidates for Elections

Candidates for Secretary

Candidate Biography for Jonathan D. Allen

Current Position: Assistant Professor, Department of Biology, College of William and Mary, Williamsburg, VA

Education: B.S. Bates College (1998); Ph.D. University of North Carolina at Chapel Hill (2005); Doherty Marine Biology Postdoctoral Scholar, Bowdoin College (2005-2008).

Professional Experience: Assistant Professor, Department of Biology, Randolph-Macon College (2008-2009); Assistant Professor, Department of Biology, College of William and Mary (2009-Present).

SICB Activities: Member (DIZ and DEE) and presenter at SICB Annual Meetings since 1998. SICB GIAR recipient in 2003. Judge, Best Student Presentation (DIZ) 2008-2012. SICB Membership Committee 2012-2015.

Other Memberships: Ecological Society of America, Society for the Study of Evolution, American Society of Naturalists, Sigma Xi

Research Interests: Larval ecology and life-history evolution of marine invertebrates.





I am interested in the role of maternal effects, especially egg size, on the ecology, evolution and development of marine invertebrates. Much of my work focuses on larval ecology in echinoderms, but I also have current projects investigating the life histories of flatworms, gastropods and hemichordates.

Statement of Goals: As Secretary, I would work to keep the DIZ at the forefront of the society through our continued leadership in organizing symposia and promoting student participation at all levels. As a member of SICB since my first year in graduate school, I fully appreciate all that we can do to shape the careers of our students. In particular, I would work to enhance undergraduate participation at the meeting by encouraging greater representation of students and colleagues from primarily undergraduate institutions. Building on the record-setting attendance at SICB 2012, and retaining student members through all phases of their career, is the surest way to keep SICB at the frontiers of biological research.

Candidate Biography for S. Anne Böttger

Current Position: Assistant Professor of Biology at West Chester University of Pennsylvania (teaching Invertebrate Zoology, Entomology, Light Microscopy and Animal Histology courses and General Zoology labs).

Education: Pre-Diploma Biology 1994 from Osnabrück University (Germany); BSc. Biology 1996 (Marine and Fisheries Science) from Aberdeen University, advisor Alan Pike (Thesis: Parasites

and other associates of echinoderms); PhD. Biology 2001 from the University of Alabama

at Birmingham, advisor James B. McClintock (Dissertation: Effects of anthropogenic pollutants on echinoderms).

Professional Experience: Assistant Professor at WCUPA (2008 - present); Postdoctoral researcher, Charles Walker lab, University of New Hampshire, NH (2002-2008); Instructor for Northeastern University, MA (Three Sea Program, 2003); Instructor McWane Center, Birmingham, AL (2001-02); Summer Instructor WIMSC, VA (2000-01).

SICB Activities: SICB (and DIZ) member since 1996; DIZ student presentation judge (2009-2011).

Other Memberships: American Society for Cell Biology (from 2002).

Research Interests: Research interests in Invertebrate Zoology ranging from effects of anthropogenic factors (pollutants etc.) on the life history, physiology and disease development of invertebrate bioindicator organisms (echinoderms, mollusks); attachment and life history of barnacles to use of invertebrate models in pre-clinical and biomedical studies.

Statement of Goals: As a long time member of SICB and DIZ I would enjoy the opportunity to serve as DIZ Secretary and become more involved in an organization that has been influential in my career development. I became a member of DIZ and SICB during my first year as a PhD student and have now transitioned to bringing my own (undergraduate and graduate) students to the annual SICB meetings. As Secretary of the DIZ I would work to encourage and increase student involvement, help to sustain DIZ's continuity established by previous secretaries by maintaining information exchange from and to DIZ members while documenting the growth and evolution of DIZ. I would very much enjoy carrying out secretarial tasks (i.e. organizing website and newsletter contributions) to help sustain and develop the division that drew me to join SICB.

