

jan|feb 2010

### New Name/ New Look for the GSA Newsletter

Welcome to *The GSA Reporter*, formerly *GENEtics*. We hope you like the new name and the new design. *The GSA Reporter* will appear in your mailbox and online in January, May, and September, and will bring you news and information on Genetics Society of America conferences, programs, and activities. Please send comments and story ideas to the editor, Phyllis Edelman at pedelman@genetics-gsa.org. We look forward to hearing from you!

# FASEB Welcomes GSA to the Federation

by Mark O. Lively, Ph.D., FASEB President

We are very pleased to have the Genetics Society of America as a member of The Federation of American Societies for Experimental Biology (FASEB), and, in this time of rapidly expanding scientific opportunity, we look forward to forging a stronger and more effective partnership on behalf of life science research. FASEB's principle goal for the coming year is to convince Congress that the expanded capacity created by the stimulus funds must become the starting point for steady, sustained continued on page eighteen

# Congratulations to the Newly-Elected 2010 GSA Board Members

The GSA is pleased to welcome six newly-elected members to the Board of Directors who represent the breadth and depth of our Society's members and their research interests. The new Board officers are **Paul Sternberg**, **Ph.D.** (CalTech and HHMI) vice

president, to become president in 2011 and Mariana Wolfner, Ph.D. (Cornell Univ), secretary. The new directors are: Elizabeth (Beth) A. De Stasio, Ph.D., (Lawrence University, WI), Thomas J. Silhavy, Ph.D. (Princeton University), Sue Tinks-Robertson, Ph.D. (Duke University Medical Center), and **Utpal** Banerjee, Ph.D. (UCLA). These new officers and directors began their three-year tenure on January 1, 2010.

Both Sternberg and Wolfner previously served on the GSA Board of Directors. Sternberg was on the Board from 2002-2004 and Wolfner was a Board member from 2006-2008. Sternberg is an active member of the *C. elegans* community

and since 1999 has been the primary investigator for the online *C. elegans* and related nematode databases, Wormbase. Wolfner, an active member of the Drosophila community within GSA, served many years on the Larry Sandler Lectureship Committee, and was the chair of the first GSA Education/Outreach Committee created in 2008.

The four new Board members who will serve as directors include a newlycreated position to reflect GSA's

strong commitment to



Paul Sternberg Vice President



Mariana Wolfner, Secretary

undergraduate genetics education. Beth DeStasio. who is dedicated to training students, both majors and non-majors in science, to become more conversant and comfortable in understanding recent advances in biology, takes this new seat. She is also a *C. elegans* researcher, studying muscle contraction and synapse maintenance. Other new board directors include Tom Silhavy, who is particularly interested in the protein production and signal transduction in bacteria such as E. coli; Sue Jinks-Robertson, whose lab examines the regulation of genome stability in *S. cerevisiae*; and Utpal Banerjee, a past president of the

Drosophila board whose research is in Drosophila developmental biology.

Retiring from the Board this year are Past President (2008) Trudi Schüpbach (Princeton Univ), Secretary Jim continued on page eight



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### Volume 7, Number 1

### officers

R. Scott Hawley, President Paul W. Sternberg, Vice President Fred Winston, Past President Trudy F. Mackay, Treasurer Mariana F. Wolfner, Secretary Mark Johnston, *GENETICS*, Editor-in-Chief

### board of directors

Utpal Banerjee Sally A. Camper Elizabeth A. De Stasio Jay C. Dunlap Sue Jinks-Robertson Douglas E. Koshland Charles H. Langley Susan T. Lovett Thomas J. Silhavy Susan R. Wessler

### executive director

Sherry A. Marts

### managing editor

### Phyllis R. Edelman

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9650 Rockville Pike Bethesda, MD 20814-3998 Tel: (301) 634-7300 Fax: (301) 634-7079 Email: society@genetics-gsa.org www.genetics-gsa.org Copyright ©2010 by the Genetics Society of America. All rights reserved. **GSA Board Holds Fall Meeting** 

Presided over by GSA President Fred Winston, the GSA Board of Directors met at the GSA offices in Bethesda, Maryland on November 18 and 19, 2009. GSA Board members brought a diversity of experiences, opinions, expertise, and ideas to the meeting, along with a deep commitment to the success and prosperity of GSA and its service to members.

The Board met for two days of intensive discussion and decision-making, interspersed with mealtime opportunities to get to know each other and the GSA staff. In her report, GSA Executive **Director Sherry Marts** highlighted recent staff initiatives aimed at raising the visibility of GSA as the authoritative voice of genetics both within the scientific community and among reporters and writers for the scientific and lay media.

The Board received good news from its Finance Committee, whose report indicated that GSA is on solid financial ground and is weathering the economic downturn very well. The Board approved the budget for 2010, which reflected plans for three GSA conferences, including the GSA's flagship meeting "Genetics 2010: Model Organisms to Human Biology." Mark Johnston, editor-in-chief, and Tracey DePellegrin Connelly, executive editor of GENETICS, reported on the changes resulting from the journal's revised scope and the successful effort to reduce significantly the time from manuscript submission to final decision on acceptance.

Lynn Marquis, National Director of the Coalition for the Life Sciences; and Guy Fogelman, Executive Director of the Federation of American Societies for Experimental Biology (FASEB) and Howard Garrison, FASEB Deputy Executive Director for Public Policy, made presentations to the Board that generated lively discussion of the public policy issues

facing GSA and its

members,

including concerns about funding appropriations for NIH and NSF. Following discussion, the Board voted to apply to join FASEB beginning in 2010. (The FASEB Board voted to accept GSA's applications at their meeting on December 7. See article on page 1.) Membership in FASEB will provide GSA with additional opportunities to represent its members in Washington, particularly at the science funding agencies such as NIH, NSF, and USDA.

The Board also heard a report from the GSA White Paper Task Force, headed by Vice President Scott Hawley. The Task Force drafted an outline for a white paper to be presented to officials at NIH that describes the critical importance of basic genetic

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# Goal Setting for the New Year

As I begin my term as president, I have three major goals in mind. The first of these is simple: do no harm. The society and the journal are in good shape. The efforts of my predecessor, Fred Winston and of several presidents before him, have redefined both the purpose and the process of the GSA. We now have a biennial society meeting (Model Organisms to Human Biology) that brings together the diverse interests of our community. Fred has done a great job organizing the 2010 meeting in Boston; I know it will be a great success, both intellectually and financially.

Sherry Marts, our new executive director, joined us last winter. Sherry has been instrumental in creating an atmosphere within the GSA that promotes change and focuses on expanding our goals and horizons. Although many of you will never meet our staff in Bethesda, I can tell you we benefit tremendously from their efforts on our behalf, both day-to-day in the office, and in facilitating the various meetings sponsored by the GSA. Our newsletter has a new, visually enticing format, and our website will soon be the useful tool that we have long desired. And more is planned.

Our journal, *GENETICS* has changed in ways that make it far more visible, exciting, and profitable for the society – without sacrificing the rigor that has been the hallmark of the journal for nearly a century. Editor-in-Chief Mark Johnston and Executive Editor Tracey DePellegrin Connelly have accomplished this feat in collaboration with more than 80 associate editors, eight senior editors, and with the frequent advice of and consultation

> "Along with other scientific societies, we need to make our case, clearly and vividly, to both the leadership of NIH and to our representatives in Congress."

with GSA members. The change in the journal has necessitated – and been driven by – a change in its scope. As we have seen that scope change, we have realized that a large part of our community would be well-served by the creation of a sister journal focused on the development of resources, tools, and methods. The GSA Board of Directors is giving this possibility serious consideration and GSA Board committees are providing the careful scrutiny that this idea deserves. Please stay tuned.

My second major goal is to bring to fruition our commitment to improve the teaching of genetics at the college level. This is something we have been discussing for as long as I have been associated with the Society. We have achieved some of this goal – for example, Pat Pukkila has done an excellent job editing a section of *GENETICS* devoted to advances in teaching – but we need to do more. The Education Committee of the Board, currently headed by Sue Lovett, will now always include a representative from a primarily undergraduate college or university. The first board member to fill that seat is Beth De Stasio (Lawrence Univ, WI); we welcome her onboard! We have also established a Special Interest Group for GSA members interested in teaching. Sherry, Sue, and I are discussing how best to coordinate staffing to support our teaching mission. Our first goal is to complete a first-ever census of what is being taught in genetics courses around the country and survey how the

discipline is being taught. We will also mount an effort to increase the number of peer-validated teaching resources available to GSA members on, or with links from, the GSA website.

My third goal is to increase the GSA's role in the loud chorus of voices promoting the critical roles of model organismbased basic research in the future of biomedical research. Frankly,

this was not a job I expected, much less wanted. I thought the obvious successes of model organisms in fueling the engines of biological thought and understanding during the last century made this argument no longer necessary. But there are unexpected words emanating from high places, questioning NIH's commitment to model organism research. Along with other scientific societies, we need to make our case, clearly and vividly, to both the leadership of NIH and to our representatives in Congress. The recent decision by the GSA to join FASEB will give us a louder voice on such matters, as does our membership in the Coalition for Life Sciences. We are the people who best understand the power of research on non-human organisms, and we need to seize every opportunity available to make that case. We are hard at work on a 'white paper' describing the past, present, and most critically, future importance of

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# Plan now for June GENETICS 2010: Model Organisms to Human Biology Meeting

Geneticists will be wowing Boston with cutting edge science when model organism and human biology researchers hit Beantown for the GENETICS 2010: Model Organisms to Human Biology (MOHB) Meeting, June 12-15, 2010 at the Sheraton Boston Hotel. Keynote speakers include 2009 Nobel laureate Carol Greider of the Johns Hopkins Medical School, Jeremy Berg, director of the National Institute of General Medical Sciences at the National Institutes of Health, and 2008 Lasker Award winner Gary Ruvkun of Harvard Medical School and Massachusetts General Hospital.

There are nine invited platform sessions, outlined below, as well as poster sessions. There are also two workshops planned for registrants on Saturday, June 12th from 2:00 -5:00 p.m., prior to the start of the platform sessions that evening. The topics for these workshops are: High-Throughput RNAi Screening in Model Systems used to Study Human Biology at Genome Scale, co-chaired by Stephanie Mohr and Liz Perkins both of Harvard University; and Education and Outreach, co-chaired by Beth De Stasio, Lawrence University and Pat Pukkila, University of North Carolina. (See article on page 6 for more information about the Education and Outreach Workshop.)

Organizing co-chairs are GSA Past President Fred Winston and GSA President Scott Hawley. The MOHB meeting "brings together investigators who study model organisms and those who study human biology and disease; these groups don't normally interact," said Winston. "Model organisms are invaluable to the understanding of diverse aspects of human biology," he added.

### keynote speakers



Carol Greider, PhD, Johns Hopkins Medical School



Gary Ruvkun, PhD, Harvard Medical School and Massachusetts General Hopsital



Jeremy Berg, PhD, National Institute of General Medical Sciences of the National Institute of Health

For science and baseball fans: come early or stay late and see great baseball with the Boston Red Sox playing the Philadelphia Phillies (June 11) or the Arizona Diamondbacks (June 16).

### **IMPORTANT DATES**

**Abstract Submission Opens:** February 17, 2010

**Registration Site Opens:** February 24

### Abstract Submission Deadline:

March 24

For more information, visit the meeting Web site at www.mohb.org/2010.

Each session will include two additional speakers, to be chosen from submitted abstracts.

session one

personal genomics



CO-CHAIR•SPEAKER Chuck Langley, PhD University of California, Davis



SPEAKER Leonid Kruglyak, PhD, Lewis-Sigler Institute, Princeton University



CO-CHAIR•SPEAKER David Altshuler, MD. PhD Harvard Medical School, Mass. General Hospital



SPEAKER Carlos Bustamante, PhD Cornell University

session four

cancer as a

genetic disease

# session two sex and gene expression



CO-CHAIR•SPEAKER Barbara Meyer, PhD, University of California, Berkeley



CO-CHAIR•SPEAKER Melissa Hines, PhD, University of Cambridge, United Kingdom

### session three models of disease



CO-CHAIR•SPEAKER Susan Lindquist, PhD, Whitehead Institute/MIT



CO-CHAIR•SPEAKER Rick Lifton, PhD, Yale University School of Medicine



CO-CHAIR•SPEAKER Angelika Amon, PhD, MIT



CO-CHAIR•SPEAKER Phil Beachy, PhD, Stanford University School of Medicine



SPEAKER David Page, PhD, Whitehead Institute/MIT



SPEAKER Eric Vilain, MD, PhD, University of California, Los Angeles



SPEAKER Eric Olson, PhD, University of Texas, SW Medical Center at Dallas

session six

modern approaches to pathogenesis and infectious disease



SPEAKER Phil Hieter, PhD, University of British Columbia, Vancouver



Kathryn Anderson, PhD, Sloan-Kettering Institute



SPEAKER Richard Kolodner, PhD, University of Cal., San Diego and Ludwig Institute

session seven

stem cell:

session five

### neurogenetics: from synapses to senescence



CO-CHAIR•SPEAKER Barry Ganetzky, PhD, University of Wisconsin, Madison

SPEAKER

Li-Huei Tsai, PhD,

MIT



CO-CHAIR•SPEAKER Pamela Sklar, PhD, Harvard Medical School & Mass General Hospital



CO-CHAIR•SPEAKER Gerry Fink, PhD, Whitehead Institute/MIT



CO-CHAIR•SPEAKER Joe DeRisi, PhD, University of California, San Francisco



CO-CHAIR•SPEAKER Minx Fuller, PhD, Stanford University



CO-CHAIR•SPEAKER George Daley, PhD, Harvard Medical School and Children's Hospital



SPEAKER Joanna Wysocka, PhD, Stanford University School of Medicine



SPFAKER Erik Jorgensen, PhD University of Utah



SPEAKER John Mekalanos, PhD, Harvard Medical School



SPEAKER Peter Palese, PhD, Mount Sinai School of Medicine



SPEAKER Anjana Rao, PhD, Harvard Medical School



### session eight

### organismal architecture and developmental disabilities



CO-CHAIR•SPEAKER Olivier Pourquie, PhD, Stowers Institute for Medical Research



SPEAKER Denis Duboule, PhD, University of Geneva and School of Life Sciences, Federal Institute of Technology, Lausanne, Switzerland



CO-CHAIR•SPEAKER

Matt Warman, MD.

SPEAKER Nicholas Katsanis, PhD, Johns Hopkins School of Medicine

session nine

### analyzing genomes



CO-CHAIR•SPEAKER Barbara Wold, PhD, CalTech



CO-CHAIR•SPEAKEF Joe Ecker, PhD, The Salk Institute



SPEAKER Rich Young, PhD, Whitehead Institute/MIT



SPEAKER Stuart Kim, PhD, Stanford University

# Education and Outreach Workshop at the MOHB Meeting

### **Session Chairs:**

**Patricia Pukkila** (Univ of North Carolina) and **Beth De Stasio** (Lawrence Univ, WI)

Hear about new approaches to genetics education and participate in discussions targeted to your problem areas in education and outreach programs at a GSA-sponsored workshop on Saturday, June 12th from 2-5 pm at the *Genetics 2010: Model Organisms to Human Biology Meeting.* 

Keynote speakers include Sally Hoskins of the City College of New York, who has published on the use of primary literature and the popular press in the classroom, and A. Malcolm Campbell, co-author of the genomics textbook, *Discovering Genomics, Proteomics, and Bioinformatics*, now in its second edition, and winner of the 2006 Bruce Alberts award for Excellence in Science Education, and Director of the Genome Consortium for Active Teaching.

Hoskins will describe the CREATE (Considered, Read, Elucidate, Analyze and Thinking of an Experiment ) approach she developed for undergraduate biology education, which uses close reading and intensive analysis of journal articles, coupled with behind-the-scenes e-mail interviews with paper authors. It is designed to simultaneously demystify the universal logic of data interpretation and humanize researchers and the research process. Campbell's presentation will focus on science teaching in synthetic biology -- a topic at the edge of our discipline.

Discussion groups will focus on topics identified by attendees as problem areas, and may include: teaching introductory biology, active learning in large classes, investigative labs in genetics,

### and middle school outreach programs. **Please** submit in advance of MOHB your discussion topic requests to pukkila@unc.edu or elizabeth.a.destasio@lawrence.edu so your problem area(s) may be addressed directly.

There will also be a poster session devoted to education and outreach at the MOHB meeting. Teaching approaches, labs for undergraduate genetics courses, and outreach programs are among the examples of possible submissions. Abstract submissions open February 17, 2010.

We look forward to your participation at this first of its kind GSA-sponsored education workshop. For more information about the workshop, contact Pat Pukkila or Beth De Stasio.

### dear **abbot:**

### Dear A Buzz:

As a teacher myself, I can understand your concerns. It is a well-known fact to every faculty member in undergraduate science departments that the largest proportion of students enrolling in courses is seeking a career in medicine. They are following the prescription for admission that has directed them to a specific constellation of courses, which has remained relatively unchanged for decades, although not quite as far back as my time. The certainty of these requirements, and the population of students following them, has affected the structure, size, and composition of academic departments – where faculty are hired and where they are not. It is thus perceptive that you and your colleagues have noticed that the foundation of this industry indeed appears to be moving.

A harbinger of this appears in the recently minted report, *Scientific Foundations for Future Physicians*, of the Scientific Foundations for Future Physicians Committee, a group of scientists, science educators, and physicians from colleges, universities and medical schools jointly convened by the Association of American Medical Colleges (AAMC) and the HHMI to re-examine premedical and medical training.

The thrust of this 43-page report (online at https://services.aamc.org/publications) is that the premed prescription should change from the present system of specified course requirements to a series of "scientific competencies." These competencies would be assessed by examining the spectrum of courses an applicant has taken and by a new-and-improved MCAT.

This is provocative: competencies would include a thorough working knowledge of basic math, statistics, chemistry, physics, genetics and epigenetics, evolution, and cell and molecular biology and biochemistry, all common aspects of a life sciences curriculum. Absent, perhaps conspicuously, is the depth of chemical knowledge afforded by two full years of organic chemistry. The future of curricula as envisioned by the report would lie in the development of interdisciplinary courses rather than in reinforcing academic silos.

Whether this report drives the change or simply signals that changes are in the wind is probably irrelevant. It seems likely that enhanced emphases will appear in disciplines classically associated with the life sciences, and the good news is that genetics will be prominent in this mix – unfortunately at the expense of some sciences that we've all classically associated with premed training. From the viewpoint of a basic scientist involved in undergraduate medical education, such changes would be welcome; for the things covered in the first year of medical school now, knowledge of the Friedel-Crafts reaction isn't as useful as a feel for the role of epigenetics in gene regulation. Of course, it's medical schools that admit medical students, not the AAMC, so the kinetics of the change is uncertain. But the probability of change seems high, and as Bob Dylan wrote, ''you don't need a weatherman to know which way the wind blows.''

Signed,

The Abbot

(aka, Jay Dunlap, Dartmouth Medical School, jay.c.dunlap@dartmouth.edu)

### Dear Abbot:

I teach genetics at a small, undergraduate liberal arts college where many of our life science majors are premed. Recently, my colleagues and I have heard "buzz" - at conferences, from colleagues at other institutions and online information – that the pre-med curriculum may be changing. We are wondering where this buzz is coming from? If true, what these curriculum changes might be? And, how they may affect those of us now teaching pre-med undergrads?

### A Buzz in the Wind



### continued 1 Congratulations 2010 GSA Board Members

Haber (Brandeis Univ), and Directors Victor Ambros (Univ of Massachusetts Medical School), Nancy Bonini (Univ of Pennsylvania) and Tim Schedl (Washington Univ of St. Louis). The Society extends its thanks to these members for their service during the past three years.

Scott Hawley (Stowers Institute of Medical Research), who was vice president last year, began his year as president of GSA on January 1. Fred Winston (Harvard Medical School), who served as president in 2009, remains on the Board for another year in the role of past president. Other continuing members of the Board, with their tenure noted in parentheses, include: Treasurer (2010) Trudy F. Mackay (North Carolina State Univ, Raleigh); Journal Editor (2013) Mark Johnston (Univ of Colorado Health Science Center, Denver) and Directors: (2010) Sally A. Camper (Univ of Michigan Medical School, Ann Arbor); (2011) Jay C. Dunlap (Dartmouth Medical School); (2011) Douglas E. Koshland (HHMI/Carnegie Institution of Washington); (2010) Charles H. Langley (Univ of California, Davis); (2010) Susan T. Lovett (Brandeis Univ); (2011) Susan R. Wessler (Univ of Georgia, Athens).

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**Registration deadline – June 24, 2010** 

# Rosalind Franklin Award Recipients Reflect Its International Aspect

The 2010 Rosalind Franklin Young Investigator Awards funded by The Peter and Patricia Gruber Foundation, were awarded to Jue (Jade) D. Wang (Baylor College of Medicine, Houston), a native of China and Iiris Hovatta (University of Helsinki) from Finland. Each recipient will receive \$25,000 (USD) a year for three years and were acknowledged at the 59th Annual Meeting of the American Society of Human Genetics in Honolulu, Hawaii on October 23, 2009.

Drs. Wang and Hovatta were selected from among nearly 100 applicants who represented the United States, Canada, Europe, Asia, Africa, Australia and the Middle East. Their work and goals reflect the spirit and dedication of British scientist Rosalind Franklin, for whom the award is named. Their originality, scientific creativity and seminal discoveries within their fields, exemplify the innovative thinking Franklin used while working on determining the structure of DNA.

Both researchers are delighted by this award. Dr. Wang received her award for her work with bacteria. She is currently working on DNA replication regulation at Baylor, where she is seeking to identify small molecules and proteins involved in replication and additional regulators. "This award is making a big difference in the work I am doing, giving me the freedom to continue to pursue innovative, cutting edge research in bacterial genetics. I have several highly promising female graduate students and I plan to use the money to support their research," said Dr. Wang.

Dr. Hovatta's research in psychiatric genetics and her ability to move from mouse models to human field work were what influenced the reviewers



Jue (Jade) D. Wang Baylor College of Medicine, Houston



to select her for this award. "I am especially happy that receiving the award has resulted in greater publicity of psychiatric genetics, and the field of anxiety disorders. They are among the most common mental illnesses and yet the characterization of their genetic background is just beginning on a larger scale," said Dr. Hovatta. She will be using the award "to test some new hypotheses" for which she does not have solid funding. A native of China, Dr. Wang came to the United States via Canada, where as an undergraduate she attended McGill University, majoring in physics. Although a highly respected, awardwinning physics student, she switched to biology for graduate school. She attended the University of California in San Francisco where she earned her Ph.D. in Jonathan Weissman's lab and was the first member of his lab to use bacteria as a model organism. She produced significant advances in understanding molecular chaperones important to cell survival. During her postdoctoral training with Alan D. Grossman, Ph.D., MIT, she was able to visualize previously unknown aspects of DNA replication by developing a whole-genome tiling microarray.

Dr. Hovatta received her undergraduate degree and doctorate from the institution where she now works, the University of Helsinki. Dr. Hovatta's initial work included studies into the genetic and molecular background of psychiatric diseases, including linkage mapping studies of schizophrenia in well-characterized Finnish families. For postdoctoral studies she attended the Max Planck Institute, focusing on the neuro-developmental origins of

psychiatric disorders. Still interested in neuropsychiatric diseases, she moved to the Salk Institute, where she initiated a novel approach using the mouse model for studying the neurobiology of anxiety. She has investigated the complex relationship between DNA and RNA level variations in the brain. In 2007 she established the Molecular Research Program at the University of Helsinki, which incorporates her mastery of concepts in inter- and multidisciplinary studies.

The applications for the Rosalind Franklin Young Investigator Awards

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# **JASON A. STAJICH:** Using Bioinformatics He Bridges the Divide between Bench Science and Data Analysis



As an undergraduate at Duke University majoring in computer science, Jason Stajich (pronounced Stīch) had a world of possibilities open to him. When he graduated his choice was genetics. As an undergrad, he had worked as a programmer in a human genetics lab where they were doing disease gene mapping and he recognized the enormous amount of data that needed manipulation in genomic sequencing. Stajich, now an assistant professor of Bioinformatics and Assistant Bioinformaticist in the Department of Plant Pathology and Microbiology at the University of California, Riverside, saw he could straddle the divide between computer science and genetics with bioinformatics.

### From Worms to Fungi

As much as the data manipulation interested Stajich, the science also intrigued him. In graduate school, also at Duke, Jason began working with the genomes of C. elegans and C. briggsae during a summer in Lincoln Stein's lab at Cold Spring Harbor, and with his computer skills, gravitated to comparative genomics. But he quickly realized that there's "more data available in fungi and the data is what drew me in." In Fred Dietrich's lab at Duke he was able to explore the growing wealth of genomic sequence data from fungi. From data flowed questions: How did pathogenic fungi evolve? What can we learn about their evolution from their genomes? How does the genome, genes, and gene structure evolve?

With all these questions and more needing answers, Stajich became hooked. "I fell in love with the uniqueness of fungi. There's bread mold, lichens, yeasts, and mushrooms. There's a lot of diversity and we don't know that much about them," he said. Plus, there are a few additional benefits to working with fungi: "They're a good model system to manipulate, they grow fast, and they're not unhappy when you go away for a weekend,'' Stajich added.

It was also in graduate school that Stajich became a leader of the BioPerl open source project and later president of the Open Bioinformatics Foundation (OBF), a nonprofit foundation advocating the use of open source bioinformatics programming tools. His work grew from an interest in encouraging construction of new comparative and computational genome analysis tools. An objective of the projects of the OBF is to make data manipulation, computation, and analysis easier by building a library of programming routines that researchers can use to construct applications that solve bioinformatics tasks from file format conversion to summarizing BLAST reports.

Although data analysis is still a "huge aspect of what I do," Stajich is less involved with BioPerl and OBF today as his lab work in fungal evolutionary biology takes precedence. Stajich is working on projects that study the mold, Neurospora crassa, the mushroom, Coprinopsis cinerea, and the frog killing chytrid fungus, Batrachochytrium dendrobatidis. The research in his lab is focused on two areas: how the fungal cell wall evolved, being an important aspect of interaction with the environment and in some cases a critical component of virulence, and how post transcriptional regulation in fungi is involved in the evolution of development. Bioinformatics and comparative biology permeate these research topics by providing links from functional to genomic and evolutionary data.

### The Importance of Fungi

Although some politicians may question why one would study fungi, there are, Stajich noted, lots of good reasons. ''Fungi play a huge role in the

environment and how organic matter degrades. They're an important part of the plant nutrient cycle," he told us. Research on fungi that interact with plants by providing nutrients, or those that act as biological agents with plant pathogens may be important in developing biofuels or other green sources of energy. The general public may erroneously think of fungi as more closely related to plants than animals, but research on fungi has broad implications on the fundamental pathways of how a cell works and grows making them models for studying cancer.

Evolution of the fungal cell wall is part of the research in Stajich's lab. The objective is "to describe the differences in cell walls comparing lineages of early branching fungi to understand the evolution of the genes that synthesize and assemble the cell wall components." Reconstructing the history of proteins that make the cell wall in fungal ancestors may lead to an understanding of why and how a cell wall exists and may have implications for higher organisms such as mice or even humans. How and when the wall is remodeled can help in our understanding of fungal pathogensis of plants and animals and the fundamental basis of this regulation may be important in understanding how multicellular fungal structures evolved.

Prior to receiving his appointment at UC-Riverside last summer, Stajich was a post doc in John W. Taylor's lab in the Department of Plant and Microbial Biology at UC-Berkeley. There, he ''worked on comparative genomics and evolution in three different systems: the human pathogenic fungi Coccidioides; the amphibian pathogen and chytrid fungus, *Batrachochytrium dendrobatidis*; and the model filamentous fungus, *Neurospora*, including *N. crassa*, *N. tetrasperma* and *N. discreta*."

### From Post Doc to Professor

Stajich's relatively seamless jump from post doc to tenure-track assistant professor, was not just luck, although he acknowledges that being in the right field helped him find his current position. "Meeting and knowing the right people" was instrumental in his search. The "right people" were largely a part of the fungal genetics community Stajich met at The GSA

"They're a good model system to manipulate, they grow fast, and they're not unhappy when you go away for a weekend"

> Conferences, Fungal Genetics Meeting. "Attending a Fungal Genetics meeting while I was in graduate school solidified for me that I belonged in this community and was really appreciated for what I could contribute, "said Stajich. "They were very friendly and willing to engage me. It's where I met my post doc adviser and these meetings were very critical to my trajectory in the field."

To post docs looking for their first position, Stajich offers the following advice:

# continued 11 The GSA Reporter Young Researcher Profile: JASON A. STAJICH

1. **Network**. Go to meetings, meet people and get to know them. If you know people at other universities, find out what jobs are coming up and find out as much as you can about that university and the position.

- 2. **Publish.** Develop a record of your work in the field.
- 3. **Find an advocate.** Your PI should do that for you, but if he/she can't or doesn't, find someone who will help promote you for academic/research positions.

Now that he's an assistant professor, with two graduate students in his lab and a post doc coming in the spring, Stajich recognizes the challenge of finding a balance "between squishy biology that's interesting and computational analysis" to get answers to experimental questions.

### **Future Exploring**

While he admits he spends much of his time on the computer for data analysis and some might consider him a "computer geek," Stajich does not spend his limited free time playing

> computer games. He likes to explore the outdoors via hiking or biking. Originally from North Carolina, even after three years as a post doc at Berkeley, Stajich is still getting used to being

a Californian. Now at UC- Riverside, he's looking forward to exploring the Californian desert and the challenge of bridging the divide between fungal experimentation and the ever expanding field of bioinformatics.

### **Correction**:

Vol 6, No 3, page 20, the author of the publication "How to Get a Tenure-Track Position at a Predominantly Undergraduate Institution (PUI)," was misidentified. The authors are Michelle N. Bushey, Deborah E. Lycan and Pat Videtich.

# **GSA Awards Given at SACNAS National Conference**

Three students received recognition by GSA for their research presentations at the SACNAS National Conference in Dallas, Texas, October 15 – 18, 2009. The Society for the Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) is a scientific society dedicated to fostering the success of Hispanic/Chicano and Native Americans in attaining advanced degrees, careers, and positions of leadership. SACNAS counts over 20,000 in members, partners, and affiliates from a diversity of disciplines, institutions, ethnicities, and educational trajectories.

The students who received research presentation awards from GSA were:

### MARIE FIALKOWSKI

Purdue Univ, Graduate Oral Symposia Presentation, "Dietary Intakes of Pacific Northwest Tribal Nations"

### TIFFANY ORNELAS

Univ of California, San Diego, Undergraduate Poster Presentation, ''Calcium Sensing Receptor (CaSR) Activates Extracellular Calcium Influx in Human Aortic Smoothmuscle Cells''

### EDUARDO TORRE

Emory Univ, Undergraduate Poster Presentation, "Role of Topoisomerase II in Epigenetic Regulation".

The GSA is a long-time supporter of SACNAS and congratulates all 2009 awardees.

For more information about 2010 SACNAS National Conference (Sept 30 – Oct 3, Anaheim, CA), please visit www. sacnas.org.



# April in D.C. Welcomes Drosophilists and Cherry Blossoms

**April** in Washington, D.C. is synonymous with cherry blossoms and tourists, and this year drosophilists will be among the visitors when the 51st Annual Drosophila Research Conference heads to D.C., April 7-11, 2010 at the Marriott Wardman Park.

Organized by Debbie Andrew (Johns Hopkins Medical School), Mark Fortini (Thomas Jefferson Univ), Steven Hou (NIH), and Leslie Pick (Univ of Maryland, College Park), the program promises, as always, interesting speakers and exceptional science. Plenary speakers, listed below, include several focusing on molecular details underlying cell behavior, cell-cell interaction and cell signaling.

Plenary presenters are:

### • Eric Baehrecke (Univ of Mass Medical School, Worcester)

pioneered the use of *Drosophila* as a model system to study autophagy and now studies the mechanisms underlying it, cell survival, and programmed cell death.

### • Elizabeth Chen (Johns Hopkins Univ School of Medicine) studies the

process of myoblast fusion in skeletal muscle cells, using a combination of genetics, biochemistry, molecular and cell biology. Her group discovered unique, fusion-promoting actinenriched structures at the site of fusion through light and high-pressure freezing electron microscopy. Their studies challenged the traditional view on fusion pore formation and provided conceptual advances in our understanding of myoblast fusion.

• Chiara Cirelli (Univ of Wisconsin, Madison) aims in her research to understand the function of sleep and clarify the functional consequences of sleep loss. Her team uses a combination of different approaches, from genetics in fruit flies to wholegenome expression profiling in invertebrates and mammals, to behavioral and EEG analysis in mice and rats.

• Lynn Cooley (Yale Univ), whose research in Drosophila oogenesis has identified and characterized many of the components of the ring canals that interconnect the nurse cells and presumptive oocyte produced during incomplete cytokinesis in mitosis. In addition, the Cooley lab is studying the functions of somatic ring canals in Drosophila epithelia and a novel mononucleated muscle cell type found in the Drosophila ovary.

• Sharyn Endow (Duke Univ) focuses on the force-generating molecular motors that drive spindle movement during mitotic and meiotic cell division. The Endow lab has focused on Drosophila Kinesin 14, encoded by the *Ncd* – Non-claret disjunctional – gene, which her group discovered. Currently her group is creating additional mutations that can trap the Ncd motor into different conformations as a tool to dissect the mechanisms whereby Ncd moves along microtubules.

### • Kenneth Irvine (HHMI and Waksman Institute, Rutgers

**Univ)** investigates two important developmental signaling pathways: those mediated by the Notch receptor and the Fat protocadherin. His lab uses a combination of genetics, biochemistry and cell culture to understand the mechanistic features and developmental roles of these pathways. Their recent work on the Fat pathway has uncovered new downstream components of the Fat signaling pathway, which is instrumental in planar cell polarity and tissue growth.

### • Elisabeth Knust (Max Planck Institute for Molecular Cell Biology and Genetics, Dresden, and The German Research

**Council)** studies the roles of apical membrane proteins in the establishment and maintenance of epithelial cell polarity. Her group first characterized the highly conserved apical membrane protein Crumbs (Crb) as a key determinant in cell polarity. Her group has been dissecting the role of this large transmembrane protein through structure-function analysis and identified and characterized proteins of related function, including Stardust and Bazooka.

### • Antonia Monteiro (Yale Univ)

studies the evolution of morphological diversity and novelty using the butterfly as a model system. She has identified genes responsible for the development of wing pattern variability in different species and is tracking their divergence through phylogeny

continued on page fourteen

# continued 13 April in D.C. Welcomes Drosophilists and Cherry Blossoms

to reconstruct both ancestral wing patterns and gene expression patterns. She has pioneered techniques to manipulate ectopic expression of candidate genes to test their functions in wing patterning.

• Craig Montell (Johns Hopkins Univ) studies the TRP superfamily of cation channels, which include 28 mammalian proteins and 13 Drosophila proteins. His lab has further investigated the role of TRP channels in sensory physiology, including chemosensory and thermal inputs.

• Duojia Pan (Johns Hopkins Univ School of Medicine) studies control of organ size and tumorigenesis by the Hippo signaling pathway. Recent studies from his laboratory have revealed that this pathway functions in both flies and mammals to regulate organ size.

• Ting Xie (Stowers Institute of Medical Research) uses Drosophila ovarian germline stem cells (GSCs) and somatic stem cells (SSCs) as well as mouse testicular GSCs and eye stem cells to study the molecular mechanisms underlying adult stem cell regulation in vivo.

• **S. Lawrence Zipursky (UCLA**) is particularly interested in the role of specific cell surface proteins which mediate selective interactions between neurons. His lab has focused on understanding the role of a large family of cell recognition molecules encoded by the Dscam1 locus. Recent studies indicate that Dscam1, and a closely related gene Dscam2, act in a redundant fashion to regulate the formation of precise patterns of synaptic connections between photoreceptor axons and dendrites of lamina monopolar neurons.

Come hear these speakers and others present their latest research results at the 51st Annual Drosophila Research Conference, April 7-11, 2010. Deadline for early (discounted) registration is Thursday, February 18, 2010. Deadline for hotel reservations is Tuesday, March 16, 2010. Come before the meeting and see the Tidal Basin cherry blossoms in full bloom as part of the National Cherry Blossom Festival.

### We look forward to seeing you in Washington, D.C. in April!

# continued 9 Rosalind Franklin Award Recipients Reflect Its International Aspect

were reviewed by a distinguished committee that included members of both the Genetics Society of America and the American Society of Human Genetics. They were: Sally Camper, Ph.D. (Univ of Michigan Medical School, Ann Arbor); Marian Carlson, Ph.D. (Columbia Univ, New York); Beverly S. Emanuel, Ph.D. (Children's Hospital of Philadelphia, PA); Judith E. Kimble, Ph.D. (Univ of Wisconsin, Madison); Mary-Claire King, Ph.D.(Univ of Washington, Seattle); Amy Pasquinelli, Ph.D. (Univ of California, San Diego); Molly Przeworski, Ph.D. (Univ of Chicago, IL); Janet D. Rowley, M.D., Ph.D. (Univ of Chicago, IL); Trudi Schüpbach, Ph.D. (Princeton Univ, NJ); and, Susan Wessler, Ph.D. (Univ of Georgia, Athens).

Reviewers Amy Pasquinelli and Molly Przeworski are past recipients of the Rosalind Franklin Young Investigator Award. Pasquinelli, the first recipient in 2004, is an assistant professor of biology at UCSD. Przeworski, an evolutionary geneticist and an associate professor at the University of Chicago, was the second recipient of the award in 2007.



# **DeLill Nasser Travel Award Recipients Announced**

The GSA is pleased to announce the six recipients of the 2010 DeLill Nasser Awards for Professional Development in Genetics. These travel grants are given to young geneticists to attend national and international meetings or enroll in laboratory courses. These awards are named in honor of DeLill Nasser (1929-2000), who was instrumental in promoting genetics research during her 22 years with the National Science Foundation. She was particularly supportive of young scientists, those at the beginning of their careers, and those trying to open new areas of genetic inquiry.

The six recipients of the 2010 DeLill Nasser Awards are:

- **Erkan Buzbas**, University of Michigan, who will use the award to attend the 60th American Society of Human Genetics Meeting in Washington, D.C., November 2-6, 2010.
- **Bryce Daines**, Baylor College of Medicine, who will use the award to attend the 51st Drosophila Research Conference in Washington, D.C., April 7-11, 2010.
- **Marc Erhardt**, University of Utah, who will use his award to attend the Gordon Research Conference, "Sensory Transduction in Microorganisms" in Ventura, CA, January 24-29, 2010.
- **Diane Genereux**, University of Washington, Seattle, who will use the award to attend the Developmental Origins and Epigenesis in Human Health and Disease (D1) meeting in Singapore, April 26-30, 2010.
- **Te-Wen Lo**, University of California-Berkeley, who will use the award to attend the Evolutionary Biology of Caenorhabditis and Other Nematodes meeting at the Wellcome Trust Genome Campus in Hinxton, Cambridge, United Kingdom, June 5-8, 2010.
- **Rebecca Shapiro**, University of Toronto, who will use her award to attend the Gordon Research Conference, "Cellular and Molecular Fungal Biology" in Holderness, NH, June 13-18, 2010.

The GSA congratulates these outstanding young scientists on being selected for this award.

# continued 2 GSA Board Holds Fall Meeting

research on model organisms, including a summary of major breakthroughs that resulted from model organism research, and a description of promising areas of current research that may lead to the next breakthroughs. Hawley summarized the comments on the draft that were received from GSA members, and the White Paper is currently under revision based on those comments and the ensuing discussion at the Board meeting.

The Board took advantage of the meeting's location in Bethesda to invite Laurie Tompkins, Chief of the Genetic Mechanisms Branch at the National Institute of General Medical Sciences (NIGMS), for a lively conversation about NIMGS' past and future support for model organism research, concerns about the impact of the end of the

"stimulus package" funding in 2011, and questions about the new NIH application and peer review process.

> The meeting was termed a "success" by both Winston and Marts. GSA Board Meetings in 2010 will take place April 5-6, in advance of the 51st Annual Drosophila Meeting at the Marriott Wardman Park in Washington, D.C.; and November 1-2, in advance of the annual meeting of the American Society for Human Genetics, also in Washington, D.C.











Te-Wen Lo

Erkan Buzbas and Diane Genereux not pictured



Genetics Society of America

# The Future of Genetics is Here

**2**010

GENETICS 2010: Model Organisms to Human Biology June 12 –15 • Boston, Massachusetts

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# **GENETICS SOCIETY OF AMERICA CONFERENCES**

# and Coming in 2011...

**26th Fungal Genetics Conference** March 15 – 20 • Pacific Grove, California

**52nd Annual Drosophila Research Conference** March 30 – April 2 • San Diego, California

18th International *C. elegans* Meeting June • Los Angeles, California

MouseGenetics 2011 June 22 – 26 • Washington, D.C. discover. understand. inform.

for additional information: genetics-gsa.org/conferences

# Thank You to Our August-November 2009 Donors

The Genetics Society of America acknowledges and thanks the nearly 150 members who have given donations to the Society from August to November 2009. We recognize nearly 100 of these members below and the more than 50 anonymous donors for their generosity. Your donations support numerous ongoing programs and activities including: student awards at The GSA Conferences; participation in the Coalition for Life Sciences and other public policy activities; GSA media and public outreach; and educational outreach efforts.

Please join your colleagues in supporting the next generation of geneticists. You can make a donation online at http://www.genetics-gsa.org/pages/joinrenew.shtml when you pay or renew your 2010 dues; at the GSA online donation site, https://genetics.faseb.org/gsa\_donation/ donate.shtml; or, send a check payable to "The Genetics Society of America" with "donation" written in the memo to the GSA Offices at 9650 Rockville Pike, Bethesda, MD 20814, Attn: Sherry A. Marts, Executive Director.

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research in an ever-expanding number of 'model organisms'. Many of you took the time to comment on the last version of the white paper, and your comments are truly appreciated.

It is going to be a busy year. We all benefit from the enormous hard work done in the last few years by my predecessors and many others. But we need to be more than good stewards of their efforts: we need to expand them. I hope that you will feel free to contact me with your ideas, questions and comments. I look forward to hearing from you soon.

With best wishes,

Scott Hawley, President society@genetics-gsa.org

Welcome

# continued 1 FASEB Welcomes GSA to the Federation

investment in the nation's research enterprise.

As we extol the promise and potential benefits of biomedical research, we must also continually remind policymakers and the public that the benefits of biomedical research. including better health and improved quality of life, are most effectively achieved through strong support for investigator-initiated, basic research. NIH and NSF are being challenged by many groups to concentrate our investigations on specific diseases and processes, but we must educate our nation's leaders and fellow citizens about the essential contribution of fundamental research, such as the work done by GSA members and others on model systems.

At FASEB, policy development begins with the working scientists representing FASEB member societies and reflects the views of a broad cross-section of the research community. GSA President Scott Hawley will serve as your representative on the FASEB board. I look forward to his contributions to our dialogue. Staff scientists in the Office of Public Affairs (OPA) conduct policy research and contribute their experience, communications skills, and strategic intelligence from Congress and federal agencies. This combination of volunteer action

and staff professionalism make FASEB policy statements informed, thoughtful, and effective. Two fulltime staff in our Capitol Hill Office, along with the support of legislative consultants with unique and unrivaled experience on appropriations legislation, ensures that messages from FASEB are delivered in a timely and effective manner.

FASEB's unique structure and approach to public affairs enables the Federation to serve as the leading force in shaping biological research policy. By virtue of our size, diversity, and the active participation of working scientists on our Board and policy committees, we are frequently sought out by legislators, federal agencies, journalists, and other groups developing programs and policies affecting science. FASEB's outstanding reputation, built on decades of sound policy, and backed by the membership of 23 societies and well over 90,000 scientists, assures that our views are heard and respected.

### Here are three easy ways for GSA members to get involved in FASEB's Public Affairs program:

 Sign up for the FASEB e-action list: http://capwiz.com/faseb/mlm/ signup/ to receive e-mail alerts when your voice is needed on major public policy issues.

### 2. **Subscribe to the Washington Update:** http://lyris.faseb.org/ subscribe/ our bi-weekly electronic newsletter about federal policy issues important to biomedical research.

3. Join one of the Science Policy Committee subcommittees: http://www.faseb.org/LinkClick.as px?fileticket=FVvVhCmwKCM% 3d&tabid=103 and volunteer to help formulate policy on issues of concern to scientists.

I also hope that you will make use of our advocacy resources. At http://opa. faseb.org/ you can find data on NIH funding trends, illustrated articles on recent breakthroughs in biomedical research, information on employment and training in the biomedical sciences, and advocacy tools in support of evolution education and animal research.

Thanks in large part to the incredible advances in genetics research, we have entered an era that will yield unprecedented progress in the biological sciences. However, with wars, a weak economy, and a decade of unmet domestic spending priorities, competition for resources is intense, and it will be critical for us to make the strongest possible case for investment in basic research. We are pleased to have the GSA join with FASEB to work toward this goal.

# **Policy Update**

by Lynn Marquis, National Director, Coalition for the Life Sciences

### The Congressional Biomedical Research Caucus: What it is and Why it Matters

The discussion of scientific issues has always been intimidating for nonscientists. This may be especially true on Capitol Hill, where many people who determine the fate and direction of the scientific enterprise are not scientists and have not been exposed to science instruction since college.

To ease the anxiety in discussing scientific topics, the Congressional Biomedical Research Caucus (CBRC) seeks to build bridges between scientists and politicians.

The CBRC presents monthly scientific briefings that not only promote exciting developments in all fields of life science and biomedical research, but also clearly explain the needs of science to legislators. Attendees include Congressional staff (the people who are most likely to craft congressional legislation and who we are most interested in trying to reach), members of the President's administration. biomedical research advocates, and, in smaller numbers. members of Congress themselves.

The CBRC is a bipartisan, bicameral Congressional Caucus. Brian Bilbray (R-CA), Michael Castle (R-DE), Jackie Speier (D-CA), and Rush Holt (D-NJ) serve as co-chairs. Eighty members of the House of Representatives and nine members of the Senate comprise the Caucus membership. The Coalition for the Life Sciences (CLS), with help from a grant from the Howard Hughes Medical Institute, is proud to sponsor these scientific briefings of the CBRC on Capitol Hill in Washington, D.C.

For 20 years, leading scientists have been presenting, in a nonpartisan setting, briefings that highlight their important research discoveries and contributions to the life science enterprise. Among those who have made presentations are GSA member and Nobel laureate Martin Chalfie and Leslie Vosshall, a member of the Drosophila community. The briefings seek to inform and educate Congress about advances in health care that are being made through our investment in scientific research. The briefings also explore future advances that could be achieved with increased support, and could help us maintain our economic advantage in world markets in biomedical research and biotechnology enterprises. As science has become increasingly politicized, the CBRC focuses on both explaining the need for ongoing scientific inquiry as well as demonstrating the value of research.

The CBRC has proved to be an effective vehicle for explaining topics of interests and concern in the life sciences to Congress. As biomedical scientific issues continue to raise political questions, the CBRC will maintain its role as an educational resource for the discussion and exchange of ideas on issues involving biomedical research.

Caucus briefings are videotaped and can be found on the CLS website at http://www.coalitionforlifesciences.org.

### Congressional Liaison Committee: A Call to Action

Members of the biomedical research community are being urged to join the Congressional Liaison Committee (CLC), the advocacy arm of the Coalition for the Life Sciences.

Since 1992, thousands of scientists have joined the CLC, creating a network of biomedical professionals interested in securing necessary research funding from the federal government. In recent years, we have asked our advocates to weigh-in on issues ranging from blunting the Bush cuts to the NIH, to the unprecedented funding for the NIH in the American Reinvestment and Recovery Act. As a result, the CLC has become a vital and critical voice on Capitol Hill.

There are many challenges that lay ahead for the biomedical research field and without an organized advocacy effort, funding growth for research is by no means secure. It is important to mobilize our scientific resources in order to maintain a healthy and vibrant research enterprise.

There is real power in numbers. To join, visit the CLS website at www.coalitionforlifesciences.org. You can also follow us on Facebook!



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# **GSA JANUARY-MAY 2010 CALENDAR**

