

Genetics

AT UW - MADISON

FALL 2007

Genetics holds its own in a tough funding environment

Chair's Letter

Michael Culbertson

Across the nation, universities and the students attending universities are facing some of the toughest challenges they've experienced in a long time. State legislatures have pursued a long-term trend of funding ever-smaller percentages of the costs of their universities. On top of that, reduced federal funding for investigator-initiated research, primarily from the National Institutes of Health and the National Science Foundations, has dramatically increased the level of competition and the amount of time each faculty member spends writing grant applications as opposed to doing the work of science. Students are under stress with the cost of undergraduate tuition rising 7-8% each year. Furthermore, NIH has imposed caps on the amount of money that can be charged to support students of graduate training grants.

Although this sounds bleak, Genetics is holding its own. Despite the fact that many faculty members have not been funded on the first try with grant applications, most are being funded on the second (or sometimes the third) attempt. Part of my job as Chair is to provide whatever bridge-funding I can to keep labs afloat until they achieve success. This usually involves short-term support for graduate students working in the labs that are under the greatest financial stress. This has repeatedly proved to be a very worthwhile investment. As for students, we have no control over tuition rates, but our undergraduate enrollment in the Genetics undergraduate major remains at peak levels (about 300 majors). Our graduate PhD program continues to thrive. I have great confidence that we can weather the storm.

In order to help with some of these issues at a level that goes beyond Genetics, I have accepted a new role in addition to my role as Department Chair. I was appointed in February as the Director of Graduate Studies and Professional Development in the College of Agricultural and Life Sciences by Dean Molly Jahn. This is a new office whose primary mission will be to help the College manage the financial issues related to graduate education, and also to create new mechanisms to augment areas of graduate training that have traditionally been ignored. Education is not all about money. There is much we can do to make sure our graduates leave the university with the best possible training. This is even more true today than in the past because the career paths available to graduates is much more diversified than it used to be. I plan to use the Office of Graduates Studies and Professional Development to better serve the changing needs of our students.



How can you support Genetics at UW-Madison?

We have established The James F. Crow Professorship in Genetics in his honor. Jim, at 91, comes into his office everyday and continues to write papers, present seminars and attend conferences. To make a tax-deductible contribution, send a check to the University of Wisconsin Foundation, 1848 University Avenue, Madison, WI 53708-8860. Please indicate that the gift is for the "James F. Crow Professorship."

Staffing Developments



Qiang Chang

We very recently added a new faculty member, Qiang Chang, who arrived in August and fills a position in the Translational Neurobiology Cluster. He is our sixth cluster hire. Qiang will have a joint appointment with the Department of Neurology in the School of Medicine and Public Health, and will establish a research laboratory at the Waisman Center. He comes from the Whitehead Institute, and his work is focused on the molecular biology and genetics of Rett's syndrome. Patients with this genetic disorder suffer from severe developmental disabilities. We are certain that he will bring vast new expertise and energy to all of our genetics programs, and his connection with a clinical department is likely to foster new ties between basic science and clinical departments.

National Recognitions

Professor Sean Carroll was elected to the National Academy of Sciences. In addition, his Howard Hughes Medical Institute Professorship was extended for an unprecedented seven year period. Sean has not only excelled in research, but is making quite a name for himself as a book author, including two academic text books "From DNA to Diversity: Molecular Genetics and the Evolution of Animal Design" and "Introduction to Genetic Analysis." Even more notably, he wrote a book for the lay public called "Endless Forms Most Beautiful," which was a top-five finalist for the Los Angeles Times Book Prize in Science and Technology. For this effort, he won the Banta Award from the Wisconsin Library Association. Sean Carroll's book, "The Making of the Fittest," is the recipient of the 2007 Science Award from the Phi Beta Kappa Society.



Sean Carroll

Professor Michael R. Culbertson was named a fellow by the American Association for the Advancement for Science. The honor recognizes him for advances in yeast genetics, including the discovery of the nonsense-mediated mRNA decay pathway, a post-transcriptional mechanisms that regulate yeast gene expression. Fellows are elected annually from the AAAS membership ranks

to recognize significant contributions to advancing scientific research, teaching and communicating science to the public. Also named was Professor of Biochemistry and Genetics faculty trainer Elizabeth Craig.

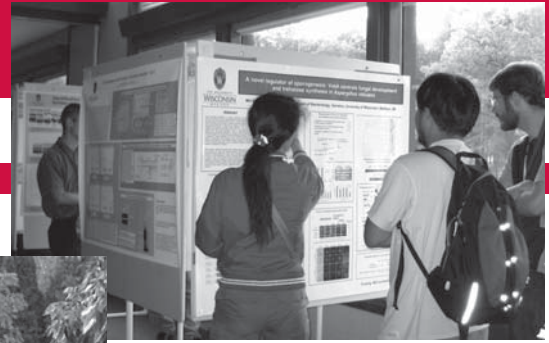
Ahna Skop



Assistant Professor Ahna Skop was awarded the Presidential Early Career Awards for Scientists and Engineers (PECASE) from President Bush in Washington, DC in early November 2007. Each year the National Science Foundation selects nominees for PECASE from among the most meritorious new CAREER awardees. The PECASE program recognizes outstanding scientists and engineers who, early in their careers, show exceptional potential for leadership at the frontiers of knowledge. This Presidential Award is the highest honor bestowed by the United States Government on scientists and engineers beginning their independent careers. Dr. Skop is studying the cell division process of cytokinesis using *C. elegans* and cell cycle proteomics.

Annual Retreat brings Genetics community together

College of Agricultural and Life Sciences Dean and Director, Molly Jahn, was the keynote speaker at the recent Genetics Retreat. Dean Jahn spoke of the impact of CALS faculty and students on world renown scientific advancements and shared with us her research interests: a translation factor and its role in resistance to plant viral disease. Tim Donohue, Director of the newly established Great Lakes Bioenergy Research Center, facilitated a panel discussion on the challenge of turning biomass into energy. UW-Madison was awarded one of three major U.S. Department of Energy research centers. Invited speakers Jiming Jiang, Aseem Ansari, Karl Broman, Qiang Chang, Judith Kimble and Arash Bashirullah detailed results in centromeres, DNA binding molecules, crossover interference, epigenetics and disease, Wnt signaling pathway and developmental timing. Graduate students and postdoctoral associates presented their research during the very interactive poster session. The day long event brings together the diverse genetics community.



above: Students share their research during the poster session at the annual retreat.

left: Faculty and students enjoy visiting during a break at the annual retreat.

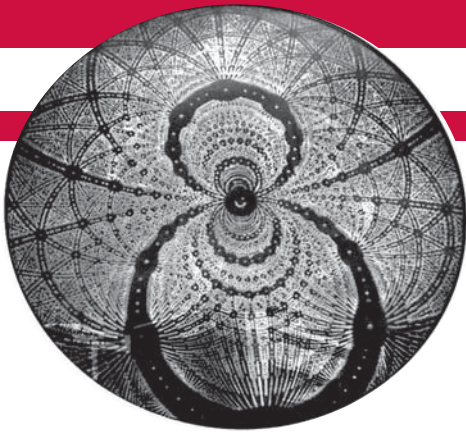
Staff Updates

Two of our faculty retired this year: Rayla Temin, who for many years taught Genetics 160 and Raymond Kessel, who is best known for his innovative teaching initiatives. Rayla chaired our undergraduate curriculum committee and managed all of the changes that took place as the size of the major grew six-fold over the last 15 years. Rayla continues her research on *Segregation Disorder*. Raymond established and directed the Wisconsin Teacher Enhancement Program for K-12 teachers and provided innovative summer courses on topics focused on biology, biotechnology, health issues, and diversity. Raymond continues in a part-time capacity with some of his teaching and outreach activities.

Dr. Chris Day has joined Genetics as a Faculty Associate and brings a wealth of experience in research and teaching. With his high infectious energy level Chris will teach Genetics 160 and provide student advising. In collaboration with the CALS International Studies Office, we are developing an international exchange program for Genetics undergraduate majors, which Chris will spearhead. It is our hope that what we develop will become a model for other departments.

Darwin Days provides community outreach

A group of faculty and students from across campus have been working to strengthen evolutionary research, education, and outreach at UW-Madison. In 2005 the Evolution Initiative became organized through the formation of an Evolution Coordinating Committee (ECC) and by establishing a formal administrative home in the Laboratory of Genetics. Over the last few years, with the help of funding from CALS, L&S, several departments and a few generous donors, the Evolution Initiative has moved forward its agenda. A weekly evolution seminar series was initiated, meeting at Thursday noon in the Genetics/Biotechnology building. This seminar series routinely attracts more than 50 participants and features engaging presentations and lively discussions of evolutionary research. The ECC formed an outreach committee, which organizes the "Darwin Day Outreach Symposium" the second of which was held in February 2007. The Darwin Day events feature talks and interactive posters and displays for the general public on evolutionary topics. Additionally, the ECC conducted a thorough curriculum review to ascertain how course offerings on campus need to be enriched and rationalized to allow students at all levels access to the very best evolutionary education. Other ongoing initiatives include the defining of an Evolutionary Biology certificate for Genetics graduate students, attempts to raise funds for additional educational and outreach activities, and efforts to hire a cluster of faculty conducting research in critical areas of evolutionary biology.



**2007-2008
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