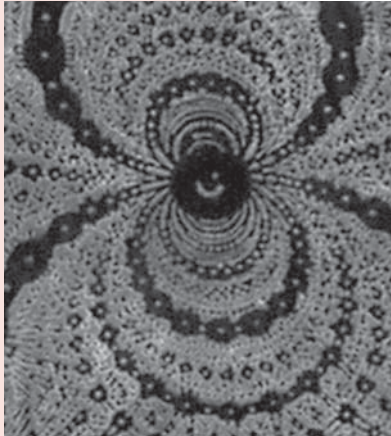


Cross Disciplinary Research is the new Mantra



FROM THE CHAIR: MICHAEL R. CULBERTSON

No matter where one looks, the theme of cross-disciplinary research is evident. The UW campus has been positioning itself to take advantage of this theme starting with “cluster hires” intended to bring new faculty members to campus who work at the boundaries and interfaces of different disciplines. Recently, the Laboratory of Genetics became the administrative home for the evolution initiative. This initiative brings faculty interested in evolutionary biology together for research, journal clubs, symposium and outreach. This environment attracts new students and faculty members interested in evolution to Madison. These collaborative ties will greatly enhance the Genetics Training Program.

The newly established research initiative, Wisconsin Institutes for Discovery (WID), will be funded by both public and private dollars in an effort to make new discoveries and to put them to practical use more rapidly. A new building to house WID will be located on University Avenue directly across from the Genetics - Biotechnology Building. This is possible through the largest gift (\$150 million) ever given to the UW and with matching funds from the Wisconsin Alumni Research Foundation and the State of Wisconsin. The Laboratory of Genetics will be heavily involved in the WID. This initiative will foster cross-disciplinary research and will benefit faculty and future undergraduate and graduate students.

Changes in leadership and staffing

2006 was marked by changes in leadership in the College of Agricultural and Life Sciences (CAL S) and the School of Medicine and Public Health (SMPH). Faculty members in Genetics have ap-

pointments in one school or the other and in some cases in both schools. Dr. Molly Jahn from Cornell University will become the new Dean of CALS and will arrive in August 2006. 50% of Dean Jahn’s appointment will be in the Department of Genetics. Dr. Robert Golden from the University of North Carolina Medical School became the new SMPH Dean on July 1. As Chair, I look forward to working with both new Deans. We have added one more Assistant Professor to our roster, Dr. Bret Payseur, who came to us from Cornell University. Dr. Payseur works in the area of evolution and human population genetics.

Cautious optimism

"These collaborative ties will greatly enhance the Genetics Training Program."

Recently, public funding of biological research has gone into decline. This has put enormous pressure on faculty members who are competing for a shrinking pot of dollars and who are pursuing research projects that are increasingly sophisticated and expensive.

Additionally, there is decreasing support for the university from state government. We are constructing new buildings at a rapid pace, but support of the activities that will occur in these new facilities is dwindling at both the federal and state levels.

So far, the Laboratory of Genetics is fairing well in this difficult environment. With a large number of highly talented new faculty members and the prospect of new cross-disciplinary initiatives and facilities, we remain cautiously optimistic. Despite a difficult funding environment, the Laboratory of Genetics is well positioned to thrive in the rapidly changing research landscape and to provide state-of-the-art training for current students who will become the researchers and teachers of the future.

Genetics
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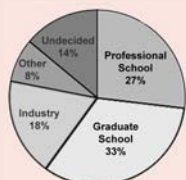
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Laboratory of Genetics Updates

Our Graduating Seniors

In May and December 2006, 82 students will graduate with a degree in Genetics. The graph summarizes their career plans.



2006 Hilldale Awards

\$4000 stipends were awarded to these undergraduate Genetics students for research and \$1000 to their faculty advisers (in parentheses)

- Max Cayo (Herbert Chen)
- Ashvini Damodaran (Richard Vierstra)
- Daniel Kvittek (Andrey Gasch)
- Brian Metzger (Carol Lee)
- Caitlin Sebartner (Philip Anderson)
- Matthew Swedlund (Maureen Smith)
- Mindy Waite (Emery Bresnick)
- Daniel Webster (Aimen Shaaban)

Bret Payseur



Assistant Professor Bret Payseur joined the Laboratory of Genetics following doctoral studies at the University of Arizona and postdoctoral work at Cornell University. Dr. Payseur uses genomic patterns of DNA variation within and between species to understand the relative roles of different evolutionary processes. This approach is becoming more exciting and practical as the ability to survey variation on a genomic scale rapidly improves. Current research is focused on discovering the genetic basis of speciation, identifying recent genomic targets of natural selection, and characterizing the evolution of recombination rate. The Payseur lab uses house mice and humans as model systems for these evolutionary studies.

Molly Jahn



Dr. Molly Jahn, a Cornell University expert in plant breeding, gene discovery and genetic mapping of agricultural plants, has been named the new dean of the UW-Madison College of Agricultural and Life Sciences. Dr. Jahn will be joining the Genetics Department. Dr. Jahn has focused her research on breeding new vegetable varieties for use around the world and on gene discovery in crop plants - notably peppers and the cucumber family - with a focus on economically important plant traits. She has been active internationally, with research efforts under way in Asia, Africa and Latin America. "This is an incredible opportunity to lead a world-class agricultural college in a state in which agriculture and life sciences are so central to the economy and to the future," Jahn says.

"agriculture and life sciences are so central to the economy and to the future."

Annual Genetics Retreat

In October, the Genetics community gathered at Devil's Head Resort in Merrimac, WI for its annual day-long retreat. The day featured a series of invited talks, several workshops, a poster session and keynote address by Dr. James Thomson. Genetics trainers Mary Halloran, Bret Payseur, Patrick Krysan, Nancy Keller, Marv Wickens and Karen Wassarman detailed results in neuron development; genomic analysis in humans and *Arabidopsis*; and regulation of mRNA and 6S RNA. "Making Teaching Part of Your Professional Development" and "Intellectual Property" were the workshop topics. Graduate students and postdoctoral associates contributed posters and benefited from the analysis and brainstorming. James Thomson's keynote address focused on the development of stem cell research and its potential.



Genetics Ph.D. students Jason Peters, Pete Chandrangsu, Lisa Farmer, Marcus Miller and Tony Studer attend the poster session at the annual Genetics Retreat.

Beloved Genetics teachers, James F. Crow and Rayla G. Temin, celebrated milestone birthdays this year. Jim upon turning 90, decided to present the department a birthday gift from him. With his viola and Melissa Wei's violin, the attendees at the weekly colloquium enjoyed a 15-minute concert featuring the Passacaglia for viola and violin by Handel and Halvorsen. Jim, who joined our faculty in 1948, is writing papers regularly, teaching, presenting, seminars, and attending conferences and study groups – all in his retirement years.



Rayla Temin celebrated her 70th birthday in May. Rayla continues to teach Genetics 160, a non-majors course in Genetics. Her apparent love of Genetics has influenced many of her students over the years to pursue Genetics as a major. Additionally, Rayla continues her research on Segregation Distorter in *Drosophila*.

Wisconsin Symposium on Human Biology

A banquet honoring Jim and Rayla was held in conjunction with the Wisconsin Symposium on Human Biology in May. The symposium, the fourth one organized by Dr. William Dove, featured a sweep of current issues in human biology, including nutrition and aging; cancer biology; regenerative biology; music and the brain; circadian biology; the evolution of *Homo sapiens*; and race, genetics and disease. A major underlying theme of the gathering was the interactions that occur between the hard-wired genetics of an individual and the various environmental factors that create and modify each person. These interactions exhibit two complementary qualities: robustness and plasticity. This symposium brought together scientists from around the world. Dr. Dove had assembled a cross-disciplinary committee of UW-Madison research leaders to organize the symposium. The symposium highlighted the diversity of research on human biology and incorporated research from many UW departments. Because of the cross-disciplinary nature of the symposium, financial support came from the Office of the Provost, the Graduate School, the Medical School, and other schools, colleges, departments, centers and institutes across campus. ■



Carter Denniston 1938-2005



With great sadness we tell you that Professor Emeritus Carter Denniston died on September 27, 2005. His entire academic career was at the UW, starting with his undergraduate and graduate student days and, after two years as a Captain in the U. S. Army, 35 years as a faculty member (7 of those as chairman of the Laboratory of Genetics). His undergraduate and graduate majors were in anthropology. He then switched to genetics and received his Ph.D. in 1968. He joined the Medical Genetics faculty as assistant professor in 1970 and retired as professor emeritus in 2005. Carter taught more different courses than any other genetics faculty member. His teaching was always characterized by rigorous logic and clear explanation. He was happy to spend many hours with students, explaining

difficult points. He also advised hundreds of Genetics undergraduates. Carter's research in theoretical population genetics was characterized by logical consistency and completeness. He developed an interest in number theory. He was looking forward to further study of this during retirement, which was cut short by cancer. Carter's openness, honesty, and sense of humor are greatly missed. ■

National Academy of Sciences Electees

In April 2006, Genetics Professor Barry Ganetzky and Genetics Trainer Richard Amasino were elected to the National Academy of Sciences.

Ganetzky, Steenbock Professor of Biological Sciences, is widely known for his application of genetics to studies of how cells generate and propagate electrical impulses in the nervous system. His work has contributed to the understanding of human neurological disorders, drug discovery and insecticide development.

Amasino's lab focuses on how plants respond to seasonal cues to prompt flowering. Amasino's discoveries include finding some of the key genes that regulate when a plant flowers and that govern the plant's internal clock.

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2005-2006

Genetics

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