

Laboratory of Genetics
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Genetics

AT UW - MADISON

NEWS

Established in 1910

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Genetics Biotechnology Center dedicated April 2005

Chair's Letter

Michael Culbertson

The new addition to the Genetics Biotechnology Center was dedicated on April 14 with an Open House. The dedication marked the celebration of the first stage of BioStar - a public-private partnership between the State of Wisconsin and the University of Wisconsin to fund campus construction. Future construction includes a Microbial Sciences Building, an upgrade to the Biochemistry Building and the Wisconsin Institute for Discovery.



The Genetics Office overlooks the sweeping new entrance way that features a mosaic by artist The Sebastian.

OUR NEW FACILITIES

The 47,000 sq. ft. addition features below ground level expanded facilities for research organisms including a vivarium, plant growth chambers and a new facility to house zebrafish. The Genetics administrative offices are housed on the first floor with a grand entrance

opening onto University Avenue directly across from Randall St. There are two new lecture rooms and ample space for administrating all our undergraduate and graduate student programs. The laboratories are located on four upper floors, and space is shared with the recently formed Genome Center.

OUR NEW FACULTY

To match this physical expansion, more new faculty have arrived in any one year period than in the last 30 years. The new arrivals include Assistant Professors Akihiro Ikeda, Audrey Gasch and Ahna Skop, and Full Professors Richard Vierstra and Jerry Yin. They bring with them a wealth of new experience in the areas of mammalian genetics, neurogenetics, genomics and plant genetics.

As is true in most states, the budget for the University has been an issue. Support for Genetics from College of Agricultural and Life



Assistant Professor Aki Ikeda lectures in new state of the art classroom.



First year graduate student Justin Schleeede tells prospective graduate students about his project.

Sciences and the Medical School were cut approximately 5%, but we have managed to absorb the cuts without major disruption.

OUR LABORATORY SUPPORT

The budget issues, the move, and efforts to launch new faculty labs present challenges, but these are being ably met by the administrative office directed by Kathy Zweifel and an expert team of highly competent academic and support staff including Jean Petersen (student programs), Dr. Peter Leeds (undergraduate lab course), Glenn Laak (building manager), Peter Weil (computer support), and Dave Cox (stock room). We look forward to a much stronger Laboratory with expanded research and teaching capabilities. Having started as Chair of Genetics in 1996, I am now in my tenth year in this role. The demands of the job are high, but I have learned to juggle running a research lab, teaching, and leading the Laboratory. I look forward to the continued opportunity to serve the Laboratory and contribute to

Faculty Updates

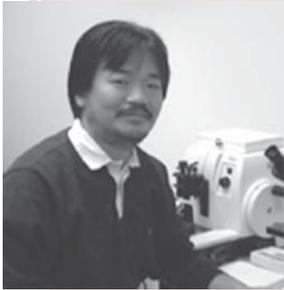
Audrey Gasch

Assistant Professor Audrey Gasch joined the Laboratory of Genetics faculty in 2004. After receiving her bachelor's degree at the UW in the Biochemistry Department, Dr. Gasch completed her doctoral studies at Stanford University, followed by a postdoctoral fellowship at UC-Berkeley. Her research is aimed at understanding the mechanisms that yeast cells use to survive stress. As part of the Genome Center of Wisconsin, the Gasch lab incorporates genomic technology and computational biology to follow whole-genome expression in yeast cells exposed to diverse stressful environments. The goal of this work is to understand the role and regulation of stress-induced genomic expression programs. In addition, the lab is exploring the evolution of stress responses and gene expression regulation by comparing gene expression programs in other fungi as they respond



Akihiro Ikeda

Assistant Professor Akihiro Ikeda moved to the Laboratory of Genetics in September 2003, after finishing his postdoctoral studies at The Jackson Laboratory in Maine. He continues to work with mice as a model organism. His research interest is in understanding the molecular basis of development and maintenance of synaptic structure and function. His study mainly uses "forward genetics" to identify neurological mutants, characterize their phenotypes and clone the responsible genes for their defects, which connects biological phenomenon with molecular mechanisms. His research specifically focuses on answering specific questions: What is the signal to initiate the synaptic structure? How are postsynaptic molecules properly positioned? How is the synaptic function maintained? He is also interested in how defects in these functions cause human genetic disorders.



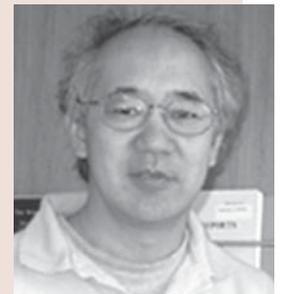
Ahna Skop

Assistant Professor Ahna Skop loved UW-Madison and the city so much as a graduate student in Cellular and Molecular Biology (2000) with John White she jumped at the chance to join the faculty of Genetics in 2004. She did her postdoctoral work at UC-Berkeley, which was a joint collaboration between the laboratories of Barbara Meyer and Rebecca Heald and included proteomics training with John Yates at the Scripps Institute. Her lab is particularly interested in understanding how the cleavage furrow is established, how the completion of cytokinesis is achieved and what roles the spindle midzone and midbody play in cell division. Her laboratory integrates multiple approaches in both mammalian and *C. elegans* systems to identify and characterize conserved factors, taking advantage of proteomics, genomics, genetics, and cell biology and video-microscopy techniques. Her lab is currently focusing on characterizing the function of several membrane-cytoskeletal proteins identified by proteomic analysis of the mammalian midbody that were recently published in *Science*.



Jerry Yin

Professor Jerry Chi-Ping Yin returned to Madison in 2004 with a joint appointment in Genetics and Psychiatry. Dr. Yin earned his Ph.D. with Dr. William Reznikoff in 1986. After finishing postdoctoral training at MIT in 1993, Dr. Yin joined the faculty at Cold Spring Harbor Laboratory. His lab is interested in the molecular mechanisms that are involved in long-term memory formation. What signaling events distinguish the different phases of memory? How are gene expression, transcription and translation coordinated during long-term memory training? These questions have led to an interest in the molecular basis of psychiatric dysfunctions that have attention-based components to the disease. Using *Drosophila* and mice, the Yin Lab's basic approach



Additional Awards 2004-2005

- ◆ Associate Professor Betsy Goodwin received the 2004 CALS Pound Research Award, which honors young scientists and encourages excellence in research
- ◆ Kirsten Bomblies (John Doebley's student) received the Schlingen Award for outstanding Genetics graduate students in 2004
- ◆ CALS Outstanding Student awards were presented to Robert Kirchdoerfer (Sophomore), Laura Kopplin (Senior) and Jamie Meyer (Senior)
- ◆ Hilldale Undergraduate Research Grants were awarded to Tina Bunnell, Bradley Dotson, Nicolas Lanz, Elizabeth Theusch and Korey Wylie

Genetics Fridays-at-Four: Old Ideas in New Contexts

Sometimes in efforts to get all their work done, our faculty and staff struggle to find the time to intermingle with members of their department. Millard Susman, former chair of the Laboratory of Genetics, recalled the days when people in Genetics gathered informally for lunch. On these occasions, individuals discussed their work, the whys and wherefores, and untangled some knotty cerebral or technical problem they were having.

This reminiscence led to the initiation of a new “Lunch Bunch” for the Laboratory of Genetics in Fall, 2003. Helping with the organization of this new activity were Jean Petersen and, especially, Mara McDonald, who has provided logistical support and played a major role in recruiting speakers.

The result of this effort is that Genetics has a venue for members to come together in a casual format, meet others, learn a bit about the history of our discipline, and discuss the future of genetics.



To get the “Lunch Bunch” started, distinguished members of our department were invited to discuss their history in genetics, and younger members were offered an opportunity to present their research. Jim Crow generously agreed to kick of the “Lunch Bunch” series with *two* talks about his life in genetics. Additionally, panels of experts were asked to attack some controversial issue or interesting era in the history of genetics.

Millard Susman, recalled for us his colleagues at Caltech and how he came to study the discipline of genetics in fruit flies. In retirement, Millard has kept himself busy serving as the Director of the Center for Biology Education, the Interim Director of the new Institute for Cross-college Biology Education, and, now, a member of the organizing team for the Genetics Fridays at Four



Panelists (l-r) Bob Goodman, Phil Simon, Bill Tracy and Michael Sussman discuss genetically modified organisms (GMOs) at the last Genetics Fridays at Four during the spring semester.

(GF4F). For the finishing touch to our first semester of Lunch Bunches, Al Ellingboe explained why he used plant pathogens and corn as his model system to study the genetics of plant-pathogen interactions.

Lunch Bunch evolved into “Fridays at Four”. Our spring collection of Friday speakers included: Tom Tubon, Richard Clark, Robyn Perrin, Derek Gingerich (all postdoctoral associates), Professor Allen Laughon, a panel (including Janet Mertz, Alex Dove, Bill McClain, Bill Dove, John White, and Waclaw Szybalski) discussing their early training and experiences in the famous MRC lab at Cambridge, England, and a special panel (Bob Goodman, Bill Tracy, Mike Sussman, and Phil Simon) discussing Genetically Modified Organisms. Our panel discussion on GMOs was so well attended, we are considering doing at least one panel a semester.

Jim Crow, who joined our faculty in 1948, fittingly kicked off the “Lunch Bunch” (now Genetics Fridays-at-Four). Jim recalled for us his long professional history. Jim, now long past his 70th year, and still going strong, is writing papers regularly, teaching, presenting seminars, and attending conferences and study groups — all in his retirement years.

How you can support Genetics at UW-Madison
We have established The James F. Crow Professorship in Genetics in his honor. To make a tax-deductible contribution, send a check to the University of Wisconsin Foundation, 1848

Faculty 2004-2005

Julius Adler (Emerita)
Philip Andros
Frederick Blum
Sara Cerra
Nancy Jo Colley
James F. Crow (Emerita)
Michael Culbertson
Robert DeMeo (Emerita)
Cameri Drenth (Emerita)
John Drenth
William Dove
Albert Ellingboe (Emerita)
William Engde
Sally Gersbach
Audrey Gusch
Elizabeth Goodwin
F. Michael Hoffmann
Alicia Hilde
Judith Kimble
Jary Kowale (Emerita)
Ching Kuang
Allan Laugha
Paula Mason
Richard Pauli
Francisco Pelegri
Tamara Probst
David C. Schwartz
Abba Shap
Xia Sun
Millard Summers (Emerita)
Rylee Tamm
Richard Vreeman
Jon Wolff
Jary Yin

Drosophila, Neurogenetics
Cellular, Gene Expression, Molecular Genetics
Genomics, Gene Expression, Microbial Genetics
Drosophila, Population & Evolution
Drosophila, Neurogenetics
Population & Evolution, Drosophila, Human
Yeast & Fungi, Genomics, Gene Expression
Human & Mammalian Genetics
Population & Evolution
Plant Genetics, Population & Evolution
Cancer Genetics, Human & Mammalian Genetics
Plant Genetics, Fungi
Drosophila, Population & Evolution
Drosophila, Gene Expression, Neurogenetics
Yeast, Genomics, Population & Evolution
Cellular, Gene Expression, Molecular Genetics
Cancer Genetics, Molecular Genetics, Drosophila
Mouse, Neurogenetics, Molecular Genetics
Cellular, Molecular Genetics
Plant Genetics, Genomic Instability
Neurogenetics, Parasitology
Drosophila, Gene Expression
Arabidopsis, Molecular Genetics, Genomics,
Clinical Genetics
Zebrafish, Developmental Genetics
Genomics, Human & Mammalian Genetics
Genomics, Optical Mapping
Cancer Genetics, Clinical Genetics
Human & Mouse Genetics, Developmental Genetics
Microbial Genetics
Drosophila
Arabidopsis, Gene Expression
Molecular Genetics, Gene Therapy
Drosophila, Mouse, Neurogenetics

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