

BASIC SCIENCE DISTINGUISHED FACULTY LECTURESHIP AWARD

Miriam H. Meisler, Ph.D.

Professor of Human Genetics



During the past 30 years, Miriam H. Meisler has published more than 140 peer-reviewed journal articles in mouse and human genetics. The international scientific community recognizes Dr. Meisler as a leading scholar in both fields.

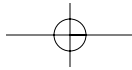
Dr. Meisler's main research uses mouse models to gain insight into the mechanisms by which mutations in ion channel genes produce neurological disorders. By employing an elegant blend of genetic, molecular, biological and electrophysiological studies, Dr. Meisler has identified mutations responsible for ataxia, seizures, tremors, dystonia and paralysis. She also discovered that mutations in the *SCN1A* sodium channel gene area are responsible for an inherited epilepsy syndrome in humans. Dr. Meisler's discovery was prescient because, subsequently, more than 200 mutations in the *SCN1A* gene have been found in patients with epilepsy.

Her laboratory discovered that mutations in a mitochondrial protease result in a neuromuscular disorder in mice, that mutations in a calcium channel subunit are responsible for idiopathic epilepsy and episodic ataxia, and that a mutation of the Wnt inhibitor *Dkk1* is responsible for dysmorphological developmental defects.

Recently, Dr. Meisler's lab identified a mutation in a splicing factor that can modify the severity of disease in a mouse sodium channelopathy. That work appeared in the journal *Science* and is especially notable as it provides an example of gene-to-gene interactions affecting disease severity, which many scientists predict will be a recurring theme in complex genetics for years to come.

In addition to serving on many institutional advisory boards and National Institutes of Health study sections, Dr. Meisler has influenced science policy by serving on the HUGO Mouse Genome Committee, Genome Center Boards and National Institutes of Health Planning Committees, Mouse Scientific Panels and Boards of Counselors. During her six-year tenure as vice president, president and past president of the International Mammalian Genome Society, she established policies in mouse genetics and contributed to the selection of the mouse as an organism for genome sequencing in the Human Genome Project. Her leadership in the mouse genetics community has contributed to the important status of mouse genetics as a genetic model organism for human disease.





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Besides her research, Dr. Meisler is dedicated to graduate education. An important byproduct of her research is the training of an outstanding group of graduate students and post-doctoral fellows who are highly sought after by other research universities. Dr. Meisler also teaches the latest genomic and gene-mapping technologies in the introductory graduate genetics course offered through the Department of Human Genetics and is director of the NIH Genetics Training Program, one of the oldest and largest programs of its kind. Under Dr. Meisler's leadership, the program has evolved into one of the finest graduate training programs at the University.

Dr. Meisler is one of the organizers of the U-M Mouse Club, an interdepartmental forum for researchers using mouse models to present their research and ideas to others in the University of Michigan community.

Widely respected by her colleagues and collaborators for her scientific leadership, graduate students and postdoctoral fellows alike seek her advice and support as a mentor. Dr. Meisler received the Sarah Goddard Power Award in 1995 for her instrumental role in training and mentoring junior women scientists.

Dr. Meisler is a fellow of the American Association for the Advancement of Science. From 2002 to 2005, she was a senior fellow of the Michigan Society of Fellows.

Dr. Meisler says, "In my free time, I enjoy folk dancing, folk music at The Ark, reading the New York Times, and, most of all, spending time with my family.

"I would like to thank my husband, Richard, for many years of support – material and spiritual – and for patience with my long hours in the lab. I thank my children, Josh and Daniel, and daughter-in-law, Laura, for the many good times together. Tom Gelehrter and Sally Camper have been most supportive chairs, and I am grateful to my colleagues in Human Genetics for intellectual stimulation and camaraderie."

