

David Mark Kingsley Awarded 2009 Edwin G. Conklin Medal

David Mark Kingsley has received the 2009 Edwin G. Conklin Medal for his work clarifying the foundations of bone and skeletal growth, and the developmental mechanisms that drive evolutionary change, using the three-spine stickleback fish as a model organism.



Dr. Kingsley is a professor in developmental biology at Stanford University, a position he has held since 2003. He is also a Howard Hughes Medical Institute (HHMI) investigator, since 1997, first as an assistant investigator, then, in 2002, as an investigator.

Dr. Kingsley's research currently focuses on three areas: the genes that control bone and joint formation in mice; skeletal disease; and the genetic control of vertebrate evolution. In studies aimed at clarifying the molecular underpinnings of the development and patterning of the vertebrate skeleton, Dr. Kingsley has identified a number of gene sequences that work with

corresponding bone morphogenetic proteins to activate the initial development of bones and joints, as well as help determine their eventual size and shape. In his studies of the genetics underlying skeletal disease such as arthritis, Dr. Kingsley's work on the progressive ankylosis (ank) gene in mice has determined that the gene encodes a protein that triggers the inhibition of mineral deposition. In other studies on the genetic control of vertebrate evolution, Dr. Kingsley's lab, in collaboration with investigators in the U.S. and Canada, has developed an extensive array of tools to identify the genetic pathways of evolution in the three-spine stickleback fish, which has undergone a relatively recent series of evolutionary adaptations.

A member of the Phi Beta Kappa Honor Society, Dr. Kingsley graduated *summa cum laude* from Yale University in 1981, with a degree in biology. In 1986, he earned his Ph.D. in biology from the Massachusetts Institute of Technology (M.I.T.), where he did his thesis research on LDL-receptor mutants with Dr. Monty Krieger, and with whom he spent the next year as a postdoctoral associate. From there, he joined Drs. Neal Copeland and Nancy Jenkins at the National Cancer Institute-Frederick Cancer Research and Development Center, where he spent the next four years as a postdoctoral associate.

His honors and awards include the prestigious *Science* Scientific Breakthrough of the Year, which he won in 2005 for his paper "Evolution in Action"; Yale University's Belknap Prize in Biology and Chittenden Prize; post-doctoral fellowships with Whitaker Health Sciences and the American Cancer Society; Lucille P. Markey Scholar in Biomedical Science; Stanford's William Hume Faculty Scholar; NIH Merit Award from 2002 to the present; Washington University, St. Louis, David M.

Kipnis lecture; American Academy of Arts and Sciences Fellow; and Harvard's John M. Prather Lectures in Biology.

Dr. Kingsley's serves on the National Institutes of Health Human Genome Research Institute's coordinating committee for choosing genome sequencing targets, the Federation of American Societies on Experimental Biology's advisory panel on Educating about Evolution and directors the NIH Center of Excellence in Genomic Science at Stanford University. Previously, Dr. Kingsley served on the Chromosome 9 Mapping Committee of the International Mouse Genome Mapping Workshops IV, V, VI, VII, for which he was chair; *Current Biology*'s editorial board; the National Cancer Institute Advisory Committee's Mouse Genomics and Genetics Subgroup; *Genetics*, for which he was associate editor (mouse and vertebrate genetics); *Annual Review of Genetics*' Editorial Board; Genetics Society of America, Board of Directors; and 2005 Howard Hughes Medical Institute Lectures on Science, with Sean Carroll ("Evolution: constant change and common threads)."

This summer, Dr. Kingsley will be co-teaching a practical lab course in stickleback molecular genetics for graduate students, postdoctoral scientists, and principal investigators. The course, which he founded in 2003 and has since directed, runs from July 26th to August 5th at Stanford University. For more information or to register, contact David Kingsley, Beckman Center B300, 279 Campus Drive, Stanford, CA 94305-5329, or send email to: kingsley@stanford.edu.

Each year since 1995, the SDB has awarded the Edwin Grant Conklin Medal to an eminent scientist with a significant research program in developmental biology and a strong commitment to mentoring young scientists. Edwin Grant Conklin (1863-1952) spent most of his distinguished career in the Department of Biology at Princeton University where, as chair for a quarter of a century, he played a key role in the department's growth and development.

For more information about Dr. Kingsley's research, view his Stanford University homepage at: <http://kingsley.stanford.edu/>.

by Anne Blank