

2004 CURT STERN AWARD ADDRESS Introductory Speech for Neil Risch*

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The Curt Stern Award, established in 2001, recognizes a scientist who has made major scientific achievements in human genetics during the past 10 years. It honors the memory of Curt Stern, a 20th century pioneer best remembered for his studies of the Y chromosome, and of recombination, and of radiation mutagenesis in *Drosophila* and for his classic textbook of human genetics.

As the chair of this year's ASHG awards committee, I am honored to introduce this year's Curt Stern Award winner, Neil Risch. As the former chair of the Human

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Genetics Department at Yale, where Neil took up his first faculty appointment in a department named "Genetics," I am personally delighted to recognize my friend's achievement.

Our awardee began his academic career in mathematics: a Bachelor of Science degree from the California Institute of Technology, a Master of Science degree from the University of Illinois, and a Ph.D. from UCLA. During his first year at UCLA, Neil took a course in human genetics and, within a few weeks, says that he knew that he had discovered his academic discipline. He wrote "I was fascinated by genetics both from the biological perspective and also because of the elegance and importance of mathematical reasoning in its essence." This fascination led logically to his interest in population genetics, genetic epidemiology, and the genetic basis of human disease.

Neil's independent research—first at Columbia, then at Yale, now at Stanford—has been characterized by an increasingly impressive list of scientific contributions. His theoretical work in statistics has provided new tools and study designs and has revealed the value and limits of approaches using linkage, association, and single nucleotide polymorphisms (SNPs). His understanding of human genomics has enabled him to propose ways that the individual genes contributing to the risk for complex traits could be mapped and identified. He has collaborated widely to apply his statistical insights toward a better understanding of the genetics and epidemiology of a long list of genetic diseases which (alphabetically) include: Alzheimer's, autism, breast cancer, depression, diabetes, hemochromatosis, multiple sclerosis, stroke, and torsion dystonia. He has added new insights to our understanding of the role that founder effect plays in diseases of Ashkenazi Jews and has provided new support for the "out of Africa" hypothesis of human evolution through the study of global patterns of linkage disequilibrium. Finally, he has helped restart the scientific debate about the genetics and biology of the word "race."

Curt Stern once described his approach to scientific research as follows: "In my own work there has been no straight line which would represent a single central idea. On several occasions I started new experiments which were no more than minor variations of older experiments which had remained inconclusive. Then, unex-

pectedly, a solution of the old problem would present itself. Looking at a mountain from one angle may not be sufficient to grasp its configuration. Looking at it from several diverse angles may suddenly reveal what had been missed before.” These words, too modest, considering Curt Stern’s accomplishments, aptly connect this year’s awardee with the man whom the award honors.

Neil Risch, too, has looked at the mountain from diverse angles and has both seen things that were missed and discovered new ways of looking.

On behalf of the awards committee and, through it, the American Society of Human Genetics, I am privileged to present this year’s Curt Stern Award to Neil Risch.