

2008 American Society of Naturalists Awards

Sewall Wright Award

Spencer Barrett

In 2008, the American Society of Naturalists honored Spencer Barrett with the Sewall Wright Award, which recognizes an active midcareer or senior investigator who has made major contributions to the conceptual unification of the biological sciences. Spencer Barrett has contributed enormously to our understanding of the forces driving evolutionary transitions in plant mating systems. He has carried out extensive field studies on the evolution of selfing, dioecy, and mechanisms involved in pollen donation, receipt, and mating compatibility. This work has greatly broadened our understanding of floral evolution, the origins of dioecy, and the evolution of plant breeding systems. He has elegantly shown that floral characteristics can evolve through mechanisms that increase the efficiency of pollen transmission or receipt as well as through mechanisms that regulate different levels of outcrossing.

In the true tradition of Sewall Wright, he has shown that knowledge of both genetics and population substructuring are absolute prerequisites for understanding the evolution of mating systems. His work on the evolution of floral polymorphism in water hyacinths is a tour de force showing how population differences are determined by the direct interplay of pollinator activity, the magnitude of genetic drift in founding populations, and the underlying genetics of the polymorphism. This work on the pathways of breakdown of tristylous to different distylous and monomorphic populations constitutes perhaps the most complete example of the real-world operation of processes central to Sewall Wright's shifting balance theory.

He has also made important contributions to our understanding of species invasions, especially the idea that these invasions are likely to be accompanied by substantial genetic change. Indeed, this pioneering work was crucial in bringing the impact of plant invasions to the forefront of the consciousness of biologists and the general public.

Spencer Barrett is a Fellow of the Royal Society of London, a Fellow of the Royal Society of Canada, and a recipient of a Merit Award from the Botanical Society of America. Recently, he received the Lawson Medal from the Canadian Botanical Association in recognition of his lifetime contributions to Canadian botany. He has also been a recipient of an outstanding teacher award at the University of Toronto and has mentored numerous graduate students and postdocs who are now leading researchers throughout the world. Throughout his research, he has combined a thorough mix of field observations, experiments, and theory, all of which have been strongly grounded in a broad knowledge of natural history. He incorporates rigor and imagination, combines theory with empiricism, and has a breadth that reflects a true integration of population genetics, ecology, systematics, and applied biology. For these many reasons, the American Society of Naturalists considers him to be an ideal recipient of the Sewall Wright Award.

Janis Antonovics, University of Virginia

E. O. Wilson Naturalist Award

Ulrich G. Mueller

Dr. Ulrich G. Mueller, the W. M. Wheeler Lost Pines Professor in the Section of Integrative Biology at the University of Texas at Austin, is the 2008 recipient of the E. O. Wilson Naturalist Award, which honors an active investigator who

has made significant contributions to the knowledge of a particular ecosystem or group of organisms. Dr. Mueller has made enormous contributions to the study of fungus-growing ants and to theoretical issues in sociobiology, sym-

biosis, and the evolution of cooperation. His work tackles the seemingly enigmatic widespread occurrence of cooperation. He is at once a consummate field biologist and an accomplished evolutionary theoretician. Dr. Mueller's research has greatly expanded our understanding of the mutualistic interactions involving not just ants and fungi but also associated bacteria, and he has shown that this set of interactions is richer and more surprising than previously believed. His work has shown an unexpected lack of congruence between fungus-growing ants and their fungal cultivars, a result that sheds light on the evolution of

this symbiosis. He has shown that ants reacquire fungi from wild sources and from gardens of other ants. Like Dr. E. O. Wilson himself, Dr. Mueller is a curious and enthusiastic naturalist, possessed with deep knowledge of organismal biology. He has focused these qualities on research that has taught us a great deal about some of the central issues in evolutionary biology: cooperation versus conflict, the role of the individual in the society, and the evolutionary lineages of interacting species.

Robert Sterner, University of Minnesota