



**BBI**  
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**BBI-Kavli**  
**Distinguished Speaker Series**

# Me to We: Searching for the Genetic Roots of Social Life

## Gene Robinson

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True societies are very rare in biology, but have evolved repeatedly in a group of insects that include the ants, bees and wasps, with the honey bee widely considered a paragon of sociality. This lecture uses the honey bee and other species to show how the science of genomics has given researchers new tools to study the evolution of social life. We have learned that nature builds different types of social capacities in the brains of different species from common genetic blocks, and brain systems that recognize and process stimuli that are personally rewarding can be shaped by evolution to motivate cooperation. Two additional discoveries explain how these are possible: gene activity in the brain is highly responsive to social influences, and gene regulatory networks in the brain are surprisingly malleable. These findings provide the beginning of a framework for understanding social life in molecular terms.

Gene E. Robinson obtained his Ph.D. from Cornell University in 1986 and joined the faculty of the University of Illinois at Urbana-Champaign in 1989. He holds a University Swanlund Chair and Center for Advanced Study Professorship, is director (since 2011) of the Carl R. Woese Institute for Genomic Biology (IGB) and director (since 1990) of the Bee Research Facility, and is a former director of the campus Neuroscience Program (2001-2011). Robinson pioneered the application of genomics to the study of social behavior, led the effort to sequence the honey bee genome, authored or co-authored over 300 publications, and has trained 29 postdoctoral associates and 23 doctoral students, over half with faculty positions in academia. He served on the National Institute of Mental Health Advisory Council and has past and current appointments on scientific advisory boards for companies with significant interests in genomics. Dr. Robinson's honors include: Fellow and Founders Memorial Award, Entomological Society of America; Fellow and Distinguished Behaviorist, Animal Behavior Society; Distinguished Scientist Award, International Behavioral Genetics Society; Guggenheim Fellowship; Fulbright Fellowship; NIH Pioneer Award; Honorary Doctorate, Hebrew University; Fellow, American Academy of Arts & Sciences; Wolf Prize in Agriculture, Wolf Foundation; and member, US National Academy of Sciences.

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