I'm Scientific Director at the NIH National Institute of Mental Health (NIMH). I came to NIH from my PhD work at the State University of New York at Stony Brook. I began conducting, essentially, information processing research in primates. I worked on that for about 15 years and gradually converted to more administrative and program positions at NIMH, where I started over 30 years ago. I’m going to talk to you about some of the observations over that period of time on animal models.

Our second speaker will be Dr. Linda Cendales, an assistant professor of surgery in the Division of Plastic and Reconstructive Surgery and Division of Transplantation, Department of Surgery at Emory University School of Medicine. She is also Director of Vascularized Composite Allotransplantation and the Laboratory of Microsurgery at the Emory Transplant Center. She has been formally trained in hand microsurgery and transplant surgery.

The last speaker will be Dr. Michael Kurilla, Director of the Office of Biodefense Research Affairs and Associate Director for Biodefense Product Development for the NIH National Institute of Allergy and Infectious Diseases here in Bethesda. His primary role is to provide overall Institute coordination for product development for medical countermeasures against bioterror threats. He received his undergraduate degree in chemistry from California Institute of Technology, earned his PhD-MD from Duke, and did postdocs at Harvard. He was an assistant professor at the University of Virginia and worked at three major pharmaceutical companies before joining the NIAID.

Richard Nakamura

I am going to talk about animal models for mental health and biology. Mental illnesses have a tremendous disease burden. Harvard University, the World Bank, and the World Health Organization did an analysis of disease burden by illness, using disability-adjusted life year, which balances chronic diseases with diseases that are acute and cause death. They looked at the top ten disease conditions that cause disease burden around the world in 2000 across all ages. [They found that] lower respiratory infections had the greatest disease burden, perinatal conditions the second most, HIV/AIDS third, and unipolar depressive disorders fourth. [The remaining top ten were] diarrheal diseases, ischemic heart disease, cerebral vascular disease, road traffic accidents, malaria, and tuberculosis.

They did a number of different kinds of analyses, one of which was the analysis of disease burden in 15- to 44-year-olds. They [wanted to determine] what caused the most disease burden in the segment of the population around the world in which society had made a critical investment in development—through parental investment and education—and was expecting some yield on that investment. I suspect that one of the key reasons they picked this segment was not only what was affecting the population expected to be most productive but also what was the effect of HIV/AIDS on the world burden. Clearly HIV/AIDS was by far the most significant disease burden for this population. We were very interested in the fact that unipolar depressive disorders and many behavioral conditions suddenly emerged as important disease burdens. Road traffic accidents, alcohol use disorders, self-inflicted injuries or suicide, schizophrenia, bipolar disorder, and violence also ended up in the top ten conditions causing disease burden for this population worldwide.

For the same age group in the United States, Canada, and Western Europe, where contagious illnesses became less significant, unipolar depressive disorder and a number of other mental and behavioral conditions became the diseases with the greatest burden. Depression was number one, alcohol use disorders, self-inflicted injuries or suicide, schizophrenia, bipolar disorder, and violence also ended up in the top ten conditions causing disease burden for this population worldwide.