

## ***ISSUES IN BIOMEDICINE RAISED BY STUDIES OF AUTISM***

**Gerald D. Fischbach, MD**

**Scientific Director, The Simons Foundation**

**Dean Emeritus, Columbia University College of Physicians and Surgeons**

On September 25, 2008, **Dr. Gerald Fischbach** presented ***Issues in Biomedicine Raised By Studies of Autism***, at the Neurological Institute at Columbia University. The audience was comprised of more than 100 physicians, students, researchers, and community members. The event was sponsored by the Columbia University Center for Bioethics.

Dr. Fischbach provided an intriguing and informative description of the key contemporary advancements in biomedical autism research. He explained the criteria for clinical assessment of autism, the relationship between mind-body neural systems, and the ongoing search for autism biomarkers in order to achieve more precise diagnostic and classification schemes, develop new therapeutics, and obtain clues about pathogenesis.

Dr. Fischbach emphasized the complexities of tracking the genetics of autism – for example, linkage studies point to loci on 20 chromosomes! Despite the advancement of such technologies as comparative genome hybridization, association studies based on single nucleotide polymorphisms (SNPs) remain confusing, experimental findings are difficult to replicate, and epigenetic factors add further layers of intricacy to the pursuit of genetic findings about autism.

Particularly compelling was Dr. Fischbach's discussion of the obligations of science and society with respect to autism research. Major concerns include pressures toward "normalization" of individuals with autism, the misuse of information compiled during the research process, public education about autism, and the ethical conduct of autism research. Dr. Fischbach projected that future challenges will involve securing more funding for autism research, and cultivating understanding, trust, and respect among stakeholders in the autism clinical and research communities. He concluded by noting that there are many reasons to remain hopeful about the future of autism research, including advances in genetics, imaging, neural circuits, and cognitive science, and the talent of the rising generation of scientists pursuing autism-related research.

Finally, Dr. Fischbach highlighted the universal values of the scientific method that continue to drive biomedical research in autism: objectivity, sharing, democracy, humanism, and education.