Russ Miller
Distinguished Professor and Director of the Cyberinfrastructure Laboratory

Dr. Miller is world-renowned for his seminal work in areas of parallel algorithms and architectures for the mesh, pyramid, hypercube, and reconfigurable architectures covering domains that include computational geometry, image analysis, and fundamental data movement operations. His publications number ~200, including peer-reviewed papers, chapters, and abstracts of presentations at national or international conferences. He has also published 2 textbooks covering parallel and sequential algorithms. Dr. Miller has played a significant role in bringing ~$0.5 billion dollars to Western New York in the form of peer-reviewed funding, appropriations, and contracts.

Miller's work in parallel algorithms led to a collaboration with world-class scientists at the Hauptman-Woodward Medical Research Institute working on solutions to problems in molecular structure determination. This revolutionary work produced algorithms and community codes that have been used to solve molecular structures several orders of magnitude larger than had previously been possible, as well as solving numerous structures with a wide variety of properties that were previously thought to be unsolvable. This work was recognized by the IEEE with its inclusion in the IEEE poster "Top 10 Algorithms of the 20th Century."

Dr. Miller founded the Center for Computational Research (CCR) at SUNY-Buffalo, where he served as Director from 1998-2006. During his tenure, CCR was continuously ranked as one of the leading supercomputing centers worldwide and served as a model for universities providing key infrastructure to enable 21st century discovery. On an annual basis, CCR supported ~140 projects covering ~40 academic departments, as well as projects from a variety of local and national colleges, universities, non-profit organizations, government agencies, and private sector companies.

Miller was instrumental in the establishment of the $290M New York State Center of Excellence in Bioinformatics. In fact, in establishing the Center of Excellence in January of 2001, New York State Gov. George E. Pataki stated that "This Center [of Excellence in Bioinformatics] will, through the University of Buffalo's Center for Computational Research, create academic and industrial partnerships …"

Dr. Miller maintains appointments as Distinguished Professor of Computer Science, Engineering, Electrical Engineering, and Structural Biology at SUNY-Buffalo.

Miller is an IEEE Fellow for "contributions to theory and practice of parallel algorithms and architectures. Miller was listed on HPC Wire's *2003 Top People and Organizations to Watch*. The computational crystallographic algorithm *Shake-and-Bake*, which is co-authored by Dr. Miller, was listed on the IEEE poster "Top 10 Algorithms of the 20th Century". Miller was elected to the *European Academy of Sciences* (Computer Science) in 2002 with the citation "for an outstanding and lasting contribution to parallel algorithms and computer science education" and was presented with *International Scientist of the Year*.