In Professor Bingmei Fu’s Microcirculation Laboratory, *in vivo* animal model and mathematical simulation are used to study tumor metastasis in microcirculation, drug delivery across the blood-brain barrier, thrombosis induced by mechanical factors and photodynamic treatment in the brain, and optimization for the radio-immunotherapy for brain cancer, etc. Currently, there are five undergraduate, seven master’s and three Ph.D. candidates working in her lab on these projects.

The Gateway Lab was funded by the Howard Hughes Medical Institute (HHMI) science education program and equipped with major facilities of protein engineering. Research in the Gateway Lab focuses on protein engineering, expression, purification and structural characterization using Nuclear Magnetic Resonance (NMR) and X-ray crystallography.

Left: The 3-D structure of the protein *Aspergillus oryzae* cutinase determined by X-ray crystallography technology, and visualized by the Pymol software. This work was done in the Gateway Laboratory, by undergraduate students Girum Aleme (Class of 2007, Major: Chemistry) and Ziying Lu (class of 2009, Major: Biochemistry), led by Dr. Yuying Gosser, in collaboration with Dr. Xiangpeng Kong of the New York University Medical school and Dr. Richard Gross at the New York Polytechnic University.

Right: The undergraduate researchers trained in the Gateway Lab serve as peerleaders to assist the teaching of the summer bioinformatics workshop for high school students. Above is David Mall (Class of 2009, Major: Biochemistry) giving a demonstration of the DNA electrophoresis experiment.