

Reflections on Eric Dawson's Scholarship and Contributions to Research at Vanderbilt

"Hi, my name is Eric Dawson. I heard you are involved in this exciting new program in ...structural biology, chemical biology, drug discovery...." One could just fill in the blank and easily visualize Eric bounding into your office, excited, enthusiastic and smiling. Eric thrilled in the excitement of science, loved to interact with people, and was the consummate collaborative scientist.

Eric Dawson, Ph.D., received his B.Sc. in Chemistry from the University of Alabama at Tuscaloosa in 1994 before embarking on graduate studies at Vanderbilt in the Department of Pharmacology. He obtained his Ph.D. in 2001 under the mentorship of Professor Jack Wells for his thesis work entitled, "Determination of Amino Acid Residues that Contribute to an Aqueous Binding Crevise in the Human Adenosine Receptor." It was near the end of his graduate studies that he learned from Lee Limbird, former Chair of the Department and then Associate Vice Chancellor for Research Health Affairs, of the new program in Structural Biology. Eric was one of the very first people to interact with the program when he contacted Jarrod Smith to express his interest in applying structural biology and in particular molecular modeling techniques to research problems in pharmacology. This led to his postdoctoral position with Professor Terry Lybrand and a fruitful association with the Center for Structural Biology (CSB) that ran throughout his career.

Eric's development in computational structural biology began under the tutelage of Professor Lybrand in the Department of Chemistry. From this start he was appointed as a Senior Research Associate in the CSB/Department of Chemistry and also took on overseeing the operation of the College of Arts & Science Molecular Graphics Teaching Laboratory. Over time, Eric grew into a role as the key point person in the CSB Education and Outreach program and was appointed as Research Instructor in the School of Medicine Department of Biochemistry (2005-2008), then Research Assistant Professor in Biochemistry (2008-present). Eric had an incredible knack for reaching out to other scientists and engaging them to explore their interests in Structural Biology. This evolved into numerous direct collaborations. His success and reputation grew to the point that he eventually devoted all of his time to these collaborative research projects. It was at this time that he developed his intense interest and was heavily involved in supporting drug discovery efforts on the Vanderbilt campus, which included a Research Assistant Professor in Pharmacology (2010-2012). In this role, Eric served as the Informatics Core Assistant Director for the NIH Vanderbilt Specialized Chemistry Center before taking on the role of Director of Molecular Modeling and Informatics at the Vanderbilt Center for Neuroscience Drug Discovery.

In 2012, Eric became involved in a new research venture with the laboratory of Dr. H. Charles Manning in the Vanderbilt University Institute of Imaging Science (VUIIS). As a valuable member of the Center for Molecular Probes (CMP), Eric applied his skills towards the identification of novel molecular imaging tracers for positron emission tomography. Eric's valuable contributions as a member of the CMP led to the identification of novel tracers and established new directions in medicinal chemistry around several critical imaging targets in oncology.

During his career, Eric taught many graduate level courses at Vanderbilt and was a collaborator and co-PI for multiple grants totaling many millions of dollars in research funding. He was co-author of more than 35 scientific papers and exhibited an exceptional range of talent with contributions in the areas of homology modeling, small molecule- and protein-protein docking, molecular dynamics, structure- and ligand-based virtual screening, probe design, and collaborative reporting and analysis of structure-activity relations.