

Structural Biology: Advancing Medicine through Integrated Technology



**Center
for
Structural
Biology**

Center for Structural
Biology
Walter Chazin

CURRENT RESEARCH

Vanderbilt's Center for Structural Biology is at the forefront of advancing medicine and biology

Understanding the structure and dynamics of proteins, and their interactions with other molecules, is critical to unraveling normal physiological function and identifying the fundamental causes of disease. While DNA sequences provide critical information that can readily be obtained, decoding the functional information stored in genomic data is an immense challenge, in particular for important human protein complexes and membrane proteins that are central to health and disease. The key to addressing the most fundamental problems in medicine and biology is to translate the gene sequences into understanding the biological function of the proteins they code. After the straight forward conversion of the gene into protein sequence, the critical step is to understand the 3D structure of the protein. Due to their extreme complexity, the only way forward for the molecular systems that drive fundamental medicine and biology is to call upon the entire array of techniques available to obtain structural information. The Center for Structural Biology (CSB), at Vanderbilt University, was an early investor in adopting the integration of structural techniques to address this grand challenge. As one of the most comprehensive centers in structural biology in the world, the CSB has a dynamic group of faculty that readily collaborate and integrate multiple methods to tackle challenges in fundamental and biomedical research, therefore making it a hub of translational research.

The CSB ensures that the powerful integrated structural biology philosophy is being successfully applied not only in the labs of structural biology experts, but also in very exciting ways through collaborations with a wide range of biomedical researchers at...

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AFFILIATION

Vanderbilt University

AWARDS

- Richard Armstrong: Arthur C. Cope Scholar Award, American Chemical Society, 2014
- Walter Chazin: Special Structural Biology Symposium in honor of WJ Chazin
- Stephen Fesik: Research Investigator of the Lustgarten Foundation, 2014
- D. Borden Lacy: Margaret C. Etter Early Career Scientist Award, American Crystallographic Association, 2014
- Charles R. Sanders: Hans Neurath Award, Protein Society, 2013

RESEARCH AREAS

Life Science, Infectious, Cardiovascular, Immunology / Inflammatory

FUNDING REQUEST

Your contributions will support Vanderbilt University's Center for Structural Biology as the Center continues to create a unique, world-class program in integrated applications of structural tools to find solutions to the fundamental problems at the forefront of biomedical research. Donations will support the necessary \$1.2M required to operate the Center with the large majority of funds being used to operate the highly sophisticated instrumentation and computer technology, and the rest to support training of the next generation of scientists to use the powerful integrated structural biology approach.

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