Fighting Disease at the Atomic Level

Walter Chazin

Professor, Department of ChemistryDirector, Molecular Biophysics Training ProgramDirector, Vanderbilt NMR Facilities

CURRENT RESEARCH

Capturing the action of protein machines in health and disease

Disease causing mutations in genes lead to a variety of different diseases. In order to design drugs to fix such malfunctions, researchers must understand how biological systems work at the fundamental atomic level. Dr. Walter Chazin, of Vanderbilt University, works to make sense of the 3D structure and movements of proteins, when alone and when they are in action with other proteins, with DNA, and with drugs and drug-like molecules. His research relies upon a multi-disciplinary, collaborative, and structurally-oriented approach to address key problems in biology and medicine. In addition to enabling the rapid design and testing of lead compounds for the development of drugs, this powerful approach can be applied in the biotechnology arena for the development of new products for consumers ranging from non-toxic detergents to bio-computers.

Dr. Chazin has been integrating the full range of structural biology tools for more than fifteen years. Using his novel approach, his research is able to attack critical biomedical research questions that are very large in scope. Within the Center for Structural Biology that he designed and leads, intergroup collaboration is central to their proven success at producing research that matters. Aside from guiding research in his group and the Center, Dr. Chazin is especially interested in the lives of individuals. Leading the lab with a family-oriented approach, he describes his role with his students saying, "once you work with me, you are always part of my [science] family." The mix of postdoctoral fellows, professional scientists, graduate, and undergraduate students contributes to Dr. Chazin's family-style group mentality where everyone contributes and all are responsible...

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AFFILIATION

Vanderbilt University

EDUCATION

- B.Sc., in Chemistry, 1975 , McGill University
- Ph.D., in Physical Organic Chemistry, 1983 , Concordia University, Montreal
- Postdoctoral Fellow in Structural Biology 1983 ,E.T.H.- Honggerberg (Zurich, Switzerland)
- Postdoctoral Fellow in Structural Biology 1986 ,The Scripps Research Institute

AWARDS

- American Cancer Society Junior Faculty Research Award, 1990-93
- American Cancer Society Faculty Research Award, 1994-98
- Regents Visiting Professor, University of Naples, Italy, 1998
- Fellow, American Association for the Advancement of Science, 2004
- Charles R. Sanders: Hans Neurath Award, Protein Society, 2013
- and 1 more...

RESEARCH AREAS

Life Science, Cardiovascular, Infectious, Oncology / Cancer

FUNDING REQUEST

Your contributions will support the continued research of Dr. Walter Chazin, of Vanderbilt University, as he works to understand how biological systems work at the fundamental atomic level. Donations will support the necessary $1.2M per year for personnel, laboratory supplies, and essential commercial products and services. In choosing to donate, you will enable the highly focused and rational design of drugs to fix the malfunctioning molecules that are produced by disease causing gene mutations.

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