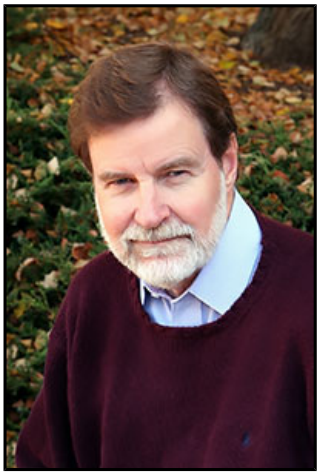
Wilson honored with outstanding science award

By Eddy Ball

NIEHS senior researcher Samuel Wilson, M.D., received the prestigious 2014 SER-CAT Outstanding Science Award during a ceremony April 25 in Rockville, Md., joining just ten other top scientists who have been so honored since the organization established the award in 2005. Wilson, who heads the DNA Repair and Nucleic Acid Enzymology Group, received an award plaque and delivered an invited lecture on the research related to his award.



Wilson has authored and co-authored more than 400 research and environmental health policy publications, and has been on the editorial board of several journals. From 1996 to 2009, he served as deputy director and acting director of NIEHS. (Photo courtesy of Steve McCaw)

The Southeast Regional Collaborative Access Team (SER-CAT) is an organization consisting of 21 member institutions,
(http://www.ser.aps.anl.gov/)
formed in 1997, to provide third generation X-ray capabilities to macromolecular crystallographers and structural biologists in the southeastern region of the U.S. Located at the U.S. Department of Energy Advanced Photon Source
(http://www.aps.anl.gov/)
at the Argonne National Laboratory in Illinois, SER-CAT held its 11th Annual Symposium
(http://www.mid-atlantic.org/)
in conjunction with the 44th Mid-Atlantic Macromolecular Crystallography Meeting April 23-26 at the University of Maryland, at Shady Grove.

Wilson joins a group of distinguished researchers
(http://ser-cat.org/Award_Winners.pdf)
from three other NIH institutes and four major universities with leading biomedical research centers. He is the first NIEHS recipient of the SER-CAT Outstanding Science Award, although the organization honored visiting fellow Matthew Schellenberg, Ph.D., of the NIEHS Genome Stability Structural Biology Group headed by Scott Williams, Ph.D., with its Young Investigator Award in 2013.

In the organization's award letter to Wilson, SER-CAT Assistant Director and Science Award Committee Chair John Rose, Ph.D., of the University of Georgia, wrote, "Your paper, 'Observing a DNA Polymerase Choose Right from Wrong,' by Freudenthal et al., was judged by our review panel to have the highest scientific impact of all of the papers considered" (see story). The award committee also expressed its gratitude for Wilson's time and effort in demonstrating the technical capabilities of the SER-CAT facility in his research.

At the forefront of a rapidly advancing field

As one of the powerful structural biology techniques, X-ray crystallography offers a unique perspective into the world of proteins, enzymes, and nucleic acids.

While much can be learned from amino acid or nucleic acid sequences, the strength of crystallography is in its ability to provide the important third dimension with 3-D snapshots of macromolecules involved in cell signaling, cellular disruption and defense, nucleic acid biology, and cell division. Due to its powerful nature, biochemists have been using crystallography to address questions ranging in size from small chemicals to large intermolecular protein interactions.

Wilson and his colleagues in the NIEHS Laboratory of Structural Biology enjoy an international reputation as leaders in their field, and Wilson's award adds to the prominence of NIEHS in this leading-edge research.

As NIEHS researcher Lars Pedersen, Ph.D., who has collaborated on a number of papers with Wilson's group, explained, "For many years, Sam's group has been on the forefront of using structural biology to understand the molecular details of how DNA polymerases function. The latest work by Bret Freudenthal is a great example of the contributions the Wilson lab has made in advancing the field. This award, along with Matt's award last year, demonstrates the quality of science that NIEHS is performing at SER-CAT. In addition, this work underscores how important it is to NIEHS to be a part of this outstanding consortium."

Citation: Freudenthal BD, Beard WA, Shock DD, Wilson SH.
(http://www.ncbi.nlm.nih.gov/pubmed/23827680)
2013. Observing a DNA polymerase choose right from wrong. Cell 154(1):157-168. Story Summary

The Advanced Photon Source provides the brightest storage ring-generation X-ray beams in the western hemisphere. SER-CAT emphasizes research employing advanced crystallography in the areas of de novo multi-wavelength and single-wavelength anomalous dispersion or MAD/SAD method of protein structure determination, high-resolution structural analyses, large unit cells, drug design, structural genomics, soft X-ray data collection, and next-generation beamline automation. (Photo courtesy of NIH)

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