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Home > Dr. David Vanderah Wins the NIST Colleagues' Choice Award

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## Dr. David Vanderah Wins the NIST Colleagues' Choice Award

Please join us in congratulating Dr. David Vanderah (Institute for Bioscience & Biotechnology Research (IBBR) and National Institute of Standards and Technology (NIST)), recipient of the 2013 NIST Colleagues' Choice Award. This annual award is given in recognition of non-supervisory NIST employees who, in the eyes of their colleagues, have made significant contributions that broadly advance the NIST mission and strategic goals or broadly contribute to the overall health and effectiveness of NIST. Dr. Vanderah is being recognized "for developing model lipid membranes to enable membrane protein metrologies, building internal and external partnerships, and advancing the careers of young scientists."

Dr. Vanderah, a Research Chemist in the NIST Biomolecular Structure and Function Group based at IBBR in Shady Grove, has established himself as a leader in the field of cell membrane model system development. Specifically, his laboratory applies organic synthesis strategies to develop specialized tethered bilayer lipid membranes (tBLMs) that can be immobilized on surfaces. These tools enable measurements of the structure and function of integral membrane proteins (IMPs), the biological gateways into and out of cells from all domains of life, in biologically-relevant environments by various metrologies, namely, nuclear magnetic resonance (NMR), neutron scattering, surface plasmon resonance (SPR), and electrochemical impedance methods.

In the research community, Dr. Vanderah is well known as an active collaborator. Dr. Vanderah has established numerous partnerships at NIST and with investigators at other research institutes in the U.S. and abroad, including the University of Maryland, Ohio State University, Carnegie Mellon University, NSF, NIH, and Vilnius University in Lithuania. Dr. Vanderah has published extensively and his research has been featured in NIST's Tech Beat newsletter. In addition, Dr. Vanderah's work is foundational to a current project under the NIST Innovations in Measurement Science (IMS) initiative, a program that provides funds to explore high-risk, leading-edge research concepts that anticipate future measurement and standards needs of industry and science. The project, entitled "Neutrons in Biology: Precision Measurement of Reconstituted Integral Membrane Proteins," brings together researchers from MML, the NIST Center for

Neutron Research (NCNR), and the Physical Measurement Laboratory (PML) at NIST to advance measurements of the folding, structure, and dynamics of IMPs.

The impact of Dr. Vanderah's research extends beyond his own work and direct collaborations. His tBLMs have been and continue to be used by a number of researchers at NCNR and outside of NIST, for example at NIH and Sandia National Laboratories, to characterize membrane-associated proteins, including those involved in the pathologies of Alzheimer's and Parkinson's diseases and Dengue virus. It is clear that Dr. Vanderah's work has opened new avenues for other researchers and may ultimately lead to a deeper knowledge of biology and the development of new medical treatments.

Beyond his research accomplishments, Dr. Vanderah stands out as a transformative mentor who has helped advance the careers of many undergraduate students and postdoctoral fellows. He has encouraged and supported his mentees, provided them with a safe environment in which to conduct their work, afforded them opportunities to present their work to others, and is even known to name the lipid anchor molecules they have synthesized after these mentees. One recent undergraduate student credited Dr. Vanderah, extolling "He instilled a confidence in my intellectual, personal, and professional abilities that has carried me through my undergraduate career and will continue to influence me forever."

Finally, Dr. Vanderah's colleagues recognize him as a good-natured person who positively contributes to NIST's culture at different levels. His sustained reputation as an outstanding and interactive researcher and mentor, who models the highest levels of professionalism and always greets his co-workers with "a smile," make Dr. David Vanderah the well deserving recipient of the 2013 NIST Colleague's Choice Award.

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