

Biographical Sketch - Karsten M. Heeger

Karsten Heeger is Professor of Physics, Chair, and Director of the Wright Laboratory at Yale University. His research focuses on the study of neutrino oscillations, neutrino mass, and dark matter. Prof. Heeger received his undergraduate degree in physics from Oxford University and his Ph.D. from the University of Washington in Seattle where he worked on a model-independent measurement of the solar ^8B neutrino flux in the Sudbury Neutrino Observatory (SNO). Before joining Yale University he was on the faculty at the University of Wisconsin and a Chamberlain Fellow at Lawrence Berkeley National Laboratory.

Professor Heeger's research focuses on the study of neutrino oscillations and neutrino mass. He was involved in the resolution of the solar neutrino problem with the Sudbury Neutrino Observatory (SNO), the first observation of reactor antineutrino oscillation with KamLAND, and the first measurement of the neutrino mixing angle θ_{13} with Daya Bay. Heeger is PI and co-spokesperson of PROSPECT, a precision measurement of reactor antineutrinos and search for sterile neutrinos at very short baselines. He is studying the nature of neutrinos with the CUORE double beta decay experiment and is currently the elected international co-spokesperson for CUPID, the CUORE Upgrade with Particle Identification. Prof. Heeger and his group are also performing R&D with Project 8 towards a novel experiment to measure neutrino mass.

Heeger's research work has been recognized with numerous awards. For his thesis work he was awarded the 2003 APS Dissertation Award in Nuclear Physics. In 2008 he received Outstanding Junior Investigator awards from DOE Nuclear Physics for the investigation of neutrino properties with bolometric detectors and from DOE High Energy Physics for the measurement of the neutrino mixing angle θ_{13} at Daya Bay. Heeger was awarded an Alfred P. Sloan Research Fellowship in 2009 and a UW Romnes Faculty Fellowship in 2011. He was named a Kavli Fellow in 2012 and elected APS Fellow in 2013. He shared the 2016 Breakthrough Prize in Fundamental Physics as a member of three collaborations: SNO, KamLAND, and Daya Bay.

Heeger has served on numerous national and international committees including the High Energy Physics Advisory Panel (HEPAP), the Nuclear Science Advisory Committee (NSAC), the Division of Particles and Fields (DPF) Executive Committee, and the American Physical Society (APS) Committee on International Scientific Affairs. He was a member of the 2015 Nuclear Physics Long Range Planning Group, the US ATLAS Project Advisory Group, and has served on review committees for the US Department of Energy, the National Science Foundation, and the Natural Sciences and Engineering Council of Canada (NSERC). He is co-chair of the APS DPF Coordinating Panel of Advanced Detectors (CPAD).

As Director of the Yale Wright Laboratory Heeger oversaw the transformation of the Wright Nuclear Structure Laboratory into a state-of-the-art experimental facility for fundamental physics. This included the decommissioning of its tandem nuclear accelerator facility, a complete building renovation, as well as construction of expanded modern laboratories and shared technical facilities including an Advanced Prototyping Center. The transformed Wright Lab is now home to a broad scientific program at the frontiers of nuclear, particle and astrophysics and recognized for its diversity and inclusive community. Prof. Heeger currently serves as chair of the Yale Physics Department where he has led the development and implementation of the department's first action

plan for diversity, equity, and inclusion, promoted shared governance, and continued the development of the department's graduate program and curriculum increasing its diversity.

At Yale Heeger has promoted instrumentation development as one of the cross-cutting priorities of Yale's science initiative leading to the creation of an Advanced Instrumentation and Development Center to be opened in 2024. Heeger is now one of the faculty co-leaders for the design and planning of the Physical Science and Engineering Building, one of the largest capital investments on campus, which will serve as a hub for quantum science and materials at Yale.

For more information see:

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Yale Wright Laboratory	http://wlab.yale.edu
Yale Physics Department	http://physics.yale.edu