Mechanical Engineering
Academy of Distinguished Alumni

Karen A. Thole, Ph.D.

Distinguished Mechanical Engineer, 2004

BSME, University of Illinois Urbana-Champaign, 1982
MSME, University of Illinois Urbana-Champaign, 1984
Ph.D., ME, The University of Texas at Austin, 1992

Department Head and Distinguished Professor
Department of Mechancial and Nuclear Engineering, Pennsylvania State University

Karen A. Thole has spent her career in academia touching the lives of students, leading turbine heat transfer research, and being a role model for women in STEM. Dr. Thole has served as the head of the Department of Mechanical and Nuclear Engineering at Pennsylvania State University since 2006. She also holds the title of distinguished professor at Penn State. She holds two degrees in Mechanical Engineering from the University of Illinois at Urbana-Champaign, and a Ph.D. from The University of Texas at Austin. After receiving her Ph.D., she spent two years as a post-doctoral researcher at the Institute for Thermal Turbomachinery at the Karlsruhe Institute of Technology in Germany. Her academic career began in 1994 as an assistant professor at the University of Wisconsin-Madison. In 1999, she accepted a position in the Mechanical Engineering Department at Virginia Polytechnic Institute and State University, where she was promoted to professor in 2003, and was recognized as the William S. Cross Professor of Mechanical Engineering in 2005.

At Penn State, Dr. Thole founded two laboratories: the Experimental Computational Convection Lab (ExCCL) and the Steady Thermal Aero Research Turbine (START) facility, where she is currently the director. These labs provided the foundation for Penn State being awarded a center of excellence in turbine heat transfer for a major turbine manufacturer. She has published over 200 archival papers and advised 70 dissertations and theses. She and her students have been recognized numerous times by ASME with best paper and best presentation awards.

Dr. Thole has provided service leadership to numerous organizations, including being a member of ASME's Board of Governors, who are chosen from 130,000 members to oversee ASME's affairs, holding full control of the activities of the society. She has also served as the chair of the Board of Directors for the ASME's International Gas Turbine Institute, where she led a number of initiatives to promote communities of women engineers and students. She is a member of NASA's National Aeronautics Committee, and co-chaired a National Academy of Engineering study on low carbon aviation. She also chaired ASME's Mechanical Engineering Department Head Executive Committee and participated in the Vision 2030 Committee defining the future mechanical engineering curriculum. She has served on academic advisory boards at The University of Texas, University of Illinois, Georgia Institute of Technology, and Brigham Young University.

In her roles as an educator, researcher, and mentor, Dr. Thole has received numerous awards, including being recognized by the United States White House as a Champion of Change for STEM for founding the Engineering Ambassador Network in which engineering students, most of whom are female and other underrepresented students, speak to high school students on the ways in which engineers positively impact the health, happiness, and safety of our world. For her administrative contributions, she has been recognized by Penn State's Rosemary Schraer Mentoring Award and Howard B. Palmer Faculty Mentoring Award. She was recognized in 2014 by the Society of Women Engineers Distinguished Engineering Educator Award and in 2016 by ASME's Edwin F. Church Medal. In September 2015, she earned the George Westinghouse Medal from ASME, which recognizes eminent achievement of distinguished service in the power field of mechanical engineering.