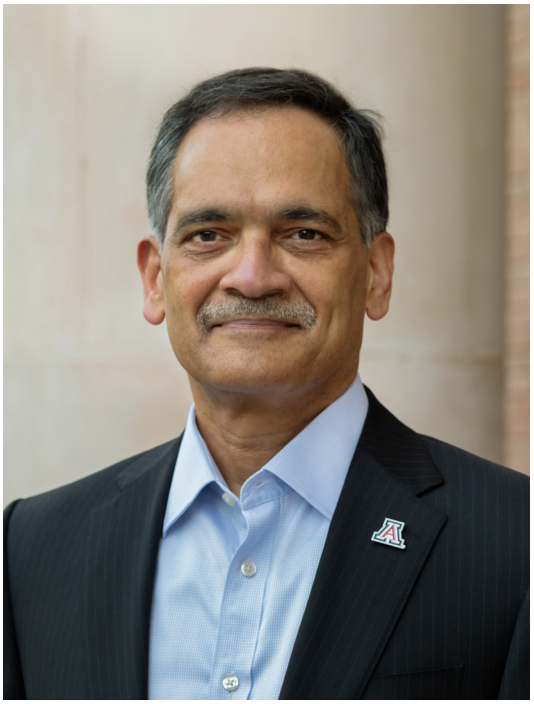
2025 HAWKINS MEMORIAL LECTURE

THE POWER OF PARTNERSHIPS IN ADVANCING FUNDAMENTAL RESEARCH AND TECHNOLOGY

WEDNESDAY, NOVEMBER 12
4:00PM-5:30PM
WALC B066



SURESH GARIMELLA

BIO: Suresh Garimella is the 23rd president of the University of Arizona and University Distinguished Professor in the Department of Mechanical and Aerospace Engineering. Previously, he was president of the University of Vermont (UVM) from 2019 to 2024. At Purdue University, he served as the Goodson Distinguished Professor of Mechanical Engineering and Executive Vice President for Research and Partnerships. Throughout his career, Garimella has emphasized the importance of access and affordability for students, and he has worked to promote excellence in the student learning experience. A highly cited scholar and passionate educator, he has mentored more than 90 graduate students and 50 post-doctoral scholars, 31 of whom are placed in prestigious faculty positions across the world. Garimella has made seminal contributions to the field of electronics thermal management and energy efficiency at micro and nano scales, and in sustainable energy systems technology and policy. He is co-author of more than 625 refereed publications and 16 issued patents and is an elected Member of the National Academy of Engineering and a Fellow of the National Academy of Inventors, the American Association for the Advancement of Science and the American Society of Mechanical Engineers Garimella also has made important contributions to national and international policy. He has served on the National Science Board, which oversees the National Science Foundation and acts as an independent body of advisers to both the President and Congress on policy matters related to science and engineering. He also chairs the research board of Sandia National Laboratories, is a member of the board of directors at Modine Manufacturing and the executive committee for the Council on Competitiveness, and he previously served as a Jefferson Science Fellow at the U.S. Department of State and as Senior Fellow for Energy and Climate Partnership of the Americas.

ABSTRACT: George Hawkins worked on high-pressure and high-temperature steam, and then during World War WII, he directed army ordnance research at Purdue. He went on to serve in a variety of leadership positions, including directing the Engineering Experiment Station, serving as Dean of Engineering, and later as Vice President for Academic Affairs. He wrote five textbooks and many papers, consulted with industry and government, and was elected to the National Academy of Engineering. What a rich set of contributions he made to engineering, higher education, and beyond! I will trace a bit of my own unexpected journey through various roles as a university educator and researcher, in government and in science and technology policy, and in higher education leadership including engagement, global affairs, research and partnerships, and presidency. At a time of unprecedented transformation in higher education and in federal funding avenues in particular, I will share my experience with building a long-standing and resilient industry consortium for thermal management that has stood the test of time and offers a robust model for conducting fundamental research and supporting student mentorship and training, while making lasting contributions to technology advancement. This work reveals the profound power of partnerships. So much of the challenge in electronics thermal management comes from the resistances to transport at solid, liquid and gas interfaces, and our Cooling Technologies Research Center has worked over nearly three decades to overcome these resistances. I will highlight how the Center came into being, the challenges in establishing a common understanding of precompetitive research and its goals among fierce competitors, and the very significant contributions that emerged from this work, including a cohort of fantastic graduates who are the Center's true legacy. I will illustrate the nature of the research we conducted by elaborating on the work done through a large DARPA project as one example. Rapid leaps in AI, biomedicine, space sciences and national security applications have only further underlined the critical need for thermal management in enabling these advances.

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