Citation of

Professor Karen Troy

for the

2024 Board of Trustees
Chair's Exemplary Faculty Award

The recipient of this year's WPI Board of Trustees Chair's Exemplary Faculty Award is a model colleague whose contributions to the teaching, scholarly, and service missions of the university stand separately on their own as worthy of high praise, and together complement one another in ways that make her a shining example of WPI's most well-rounded campus citizens.

Professor Karen Troy, Professor and Associate Department Head of Biomedical Engineering, is a leader in the biomechanics of musculoskeletal health, and her collaborative style empowers all members of her many research teams. Professor Troy serves as an inspiration to her undergraduate and graduate students by grounding them in the basics of bioengineering, exposing them to the excitement of laboratory experimentation, and mentoring them at all stages of their education. She is active in a range of professional services that draw her externally to the needs of her research community and internally to the workings of WPI's curricular, departmental, and campus administration.

In studying the mechanisms by which bone is influenced by mechanical loads, Professor Troy has developed non-invasive measurement and computational modeling techniques to advance clinical care and perform mechanistic clinical trials in humans, with special attention paid to at-risk populations, those with osteoporosis, and individuals with spinal cord injuries. Her research has been supported by external funding of nearly $13 million; it has resulted in nearly 80 peer-reviewed journal papers and has led to patented technologies for the detection of early fracture healing. Among many recognitions, Professor Troy was elected to the American Institute for Medical and Biological Engineering (AIMBE) and has twice been awarded the Clinical Biomechanics Award from the American Society of Biomechanics, highlighting the clinical applicability of her work.

As a champion of WPI's project-based approach to learning, Professor Troy is well known for her creative use of open-ended group projects that have students build on fundamental concepts to arrive at unexpected solutions. She has mentored more than 130 undergraduate, MS, PhD, and post-doctoral trainees within her lab. For her research with undergraduates, in particular—including NSF-sponsored REU students and WPI-sponsored Early Research Experience in E-Term (EREE) projects—Professor Troy has received the Founders' Award from the American Society of Biomechanics, and the Adele Bodley Award from the Orthopaedic Research Society.

Professor Troy's campus leadership includes the development of a project-based Master of Science degree grounded in WPI's fundamental approach to education. She has served as an active member of the Committee on Governance (COG), the Committee for Graduate Studies and Research (CGSR), and the Board of Trustees' Academic Planning Committee. Externally, she has held positions in the American Society of Biomechanics (ASB) and the Orthopaedic Research Society (ORS), and she has served as an associate editor for *IEEE Transactions on Neural Systems and Rehabilitation Engineering*. She is currently completing a fellowship in Drexel University's Executive Leadership in Academic Technology, Engineering and Science (ELATES) program to promote senior women faculty and faculty allies of all genders to leadership roles within their own universities.

For her personal ethos in which the many faculty roles are of equal importance, for her success in balancing them all while excelling at each, and for her stature as a role model to faculty members and students alike, WPI is proud to recognize Professor Karen Troy as the recipient of the 2024 Board of Trustees Chair's Exemplary Faculty Award.