#### UNIVERSITY of WASHINGTON

# MECHANICAL ENGINEERING & HEALTH

### **ASSOCIATED FACULTY**

Alberto Aliseda **Michael Bailey** Ashis Banerjee Gador Canton Jae-Hyun Chung Santosh Devasia Sawyer Fuller Dayong Gao Jonathan T.C. Liu Igor Novosselov Jonathan Posner Per Reinhall Eric Seibel Steve Shen Nathan Sniadecki Kat M. Steele Minoru Taya

### **NOTABLE PARTNERS**

Nabtesco Origincell PATH Providence Health & Services Seattle Children's Hospital UW Medicine UW School of Dentistry UW School of Nursing UW School of Pharmacy VA Puget Sound

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There has never been a more opportune time for researchers, engineers, clinicians and entrepreneurs to contribute to the development of health technology for the purpose of lowering costs and improving the quality of care. Our programs and partnerships bridge boundaries between engineers and health-care practitioners by integrating research, student projects, clinical practice and commercialization to train leaders in health-care innovation. The new technological solutions being developed in our labs will help improve the quality and efficiency of health-care while reducing costs.

UW Mechanical Engineering has a rich history of advancements in biomechanics and health technologies, thanks to the work of pioneers in the field, including emeritus faculty Colin Daly and Albert Kobayashi, '52, and alumni Wayne Quinton, '59, and Savio Woo, '71. Today, nearly half of ME's core faculty research in this area.



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- Biomechanics, biotechnologies and human movement
- Bio-microelectromechanical systems (BioMEMs), cell mechanics and nanotechnology
- Blood, tissue and organ interaction
- Cryopreservation and biobanking technologies
- · Innovation in health and biomedical device development
- Nano and biologically inspired robotics
- Photonics imaging, treatment and display technologies
- Point-of-care diagnostics
- Prosthetics and orthotics

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ME researchers are advancing **cancer detection and treatment** through innovations in nanorobotics, optical technologies and biomedical diagnostics.



**The Ability and Innovation Lab** aims to empower human mobility through engineering and design by working closely with patients, clinicians and families.



**Engineering Innovation in Health** is a year-long program in which engineering students and faculty partner with clinicians to design medical devices aimed toward lowering costs and improving care.

### AWARD-WINNING STUDENT PROJECTS

**EpiForAll,** an affordable alternative to the epinephrine auto-injectors currently on the market, developed for use in low-resource communities worldwide.

**MistEase**, a device that makes it easier for elderly people with glaucoma to administer their eye drops.

**PlayGait,**<sup>™</sup> a pediatric exoskeleton that helps children with gait disorders walk more, so they can build muscle strength and increase independent mobility.



ME's 15-year partnership with the **Seattle VA's Center for Limb Loss Prevention & Prosthetic Engineering** has resulted in hands-on research opportunities for students and has helped propel UW biomechanics research in new directions.

### **STARTUPS**

Companies resulting from recent ME faculty and student research include:

**Phoresa** is developing an innovative test for infectious diseases to help doctors better diagnose and treat patients in a single visit.

**Stasys** is commercializing a device to assess platelet dysfunction in trauma patients within minutes, helping emergency physicians save lives.

**VICIS** has developed a helmet designed to mitigate impact forces in NFL, college and youth football.



MECHANICAL ENGINEERING UNIVERSITY of WASHINGTON Box 352600 • Seattle, WA 98195-2600 (206) 543-5090 • mechair@uw.edu www.me.washington.edu