

UR Health Lab

Powering Medicine's Amazing Transformation with Data Science.

“Our mission is to develop predictive early warning technologies that will identify at-risk patients and improve the speed and precision for when healthcare providers intervene.”

— David J. Mitten, M.D.

Imagine a device that can predict when you are at high risk for sudden cardiac arrest—and then alert both you and your doctor. Imagine being able to diagnose and track physical injury progression by analyzing how your body moves in virtual reality space. This is our future, thanks to data science.

At the University of Rochester, the UR Health Lab is transforming the way data science is being used in medicine by developing novel tools that capture new data streams, analyze previously unseen patterns and enable healthcare providers to provide individualized treatments that are more responsive, effective and precise.



Within the UR Health Lab, clinicians and researchers work alongside data scientists, computer scientists and electrical and computer engineers. They devise breakthrough systems that incorporate the most advanced machine learning models, virtual and augmented realities, 3D imaging modalities and wearable multifunction sensors.

The UR Health Lab is a multidisciplinary collaboration between the University of Rochester Medical Center and the College of Arts, Sciences and Engineering. It brings together the teams, expertise and resources needed to develop precision medicine that improves the lives of our patients.

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Advancing Medical Technology Education

The UR Health Lab offers educational programs to University of Rochester faculty and students. These programs help to increase expertise in using medical informatics and electronic medical record technologies. The UR Health Lab also offers internships and full-time employment opportunities to qualified applicants.

Commercial Incubation

Every solution being developed at the UR Health Lab addresses specific challenges within the medical field. The UR Health Lab welcomes the opportunity to collaborate with external corporate partners and academic institutions on research and development projects of mutual interest.

The Innovation Process

- Phase 1: Uncovering Unmet Clinical Needs
- Phase 2: Concept Generation
- Phase 3: Platform Development and Testing
- Phase 4: Commercialization



For more information:

Adam Tulgan
Director, Industry-Academic Collaborations
Goergen Institute for Data Science
Phone: (585) 275-1765
Email: urhealthlab@urmc.rochester.edu
Website: urhealthlab.urmc.edu

Meet the Director



Dr. David Mitten is an Associate Professor of Orthopaedics and Biomedical Engineering at the University of Rochester. Dr. Mitten earned his medical degree and completed his Orthopaedic Surgery residency at the University of Rochester School of Medicine and Dentistry. He then completed a fellowship in Plastic and Reconstructive Surgery at UCLA. Dr. Mitten originally earned a bachelor's degree in chemical engineering from the University of Rochester. Throughout his medical career, Dr. Mitten has used his engineering skills to drive innovation to improve medical care and delivery. Recently, his team adapted the NIH-funded PROMIS patient-reported outcomes tool and operationalized it for the University of Rochester Medical Center (URMC). Used at URMC by more than 1,200 physicians in 20 clinical programs, Dr. Mitten's tool is changing the way physicians engage patients in their care. For their efforts, Dr. Mitten and his team were awarded the university's Meliora Award in 2016.

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