

Health & Biotechnology



Above: A Euclidean distance transform of a confocal microscopy image of microglia. Created by Chad Curtis

The skills of chemical engineers are uniquely suited to developing next-generation solutions to persistent health challenges. UW ChemE boasts strong cross-disciplinary collaborations with medical researchers in the design of smarter therapeutics, targeted drug delivery systems, and improved diagnostics. Our faculty also conduct research in systems and synthetic biology, as well as metabolic, biomolecular, and protein engineering.

Featured research clusters

Biomaterials

With several field-defining visionaries in the biomedical sciences, our department holds one of the longest and richest histories in biomaterial innovation. With creativity more fervent than ever, we employ current tools to engineer functional tissue, guide immune responses to medical implants, and probe stem cell fate in 4D.

Synthetic biology

Deciphering, retooling, and reinventing the tricks of basic biology, our faculty engineer versatile approaches to synthesize industrially and medically important chemicals and materials at scale. These efforts are complemented with advanced computational modeling to illuminate the inner workings of cellular bioprocesses.

Advanced therapeutic delivery

From coercing nanoparticles past the blood-brain barrier, to identifying and treating disease with ultrasound theranostics, to confining therapeutic delivery to tissue-barcoded bodily locations, UW researchers are developing real-world solutions to advance medical treatments in collaboration with partners at UW Medicine, Fred Hutch Cancer Research Center and Seattle Children's Hospital.

More at www.cheme.uw.edu/research/areas



Neda Bagheri



François Baneyx



David Beck



James Carothers



Chun-Long Chen



Cole DeForest



Shuyi Ma



Jorge Marchand



Shachi Mittal



Elizabeth Nance



Jonathan Posner



Lilo Pozzo



Buddy Ratner



Eric Stuve

Campus opportunities



Northwest Kidney Centers | UW Medicine



UW Center for
Synthetic Biology



ISCRM
Institute for Stem Cell and
Regenerative Medicine



CSSAS
Center for the Science of
Synthesis Across Scales



Molecular Engineering
& Sciences Institute



INSTITUTE FOR
NANO-ENGINEERED SYSTEMS



INSTITUTE FOR
Protein Design