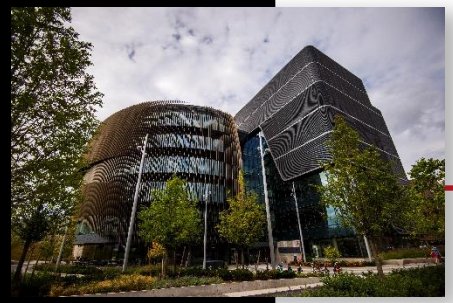

Bioengineering

Research Map

Northeastern University
College of Engineering
Bioengineering

Abraham Joy, Professor and Chair
a.joy@northeastern.edu

Chiara Bellini, Associate Professor and Associate Chair for Research and PhD Programs
c.bellini@northeastern.edu

Michael Jaeggli, Teaching Professor and Associate Chair for Master's Education and Global Operations
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Biomedical Devices and Bioimaging

Saeed Amal
Sumner Barrenberg
Samuel Chung
Qianqian Fang
Christa Haase
Tim Lannin
Mark Niedre
Stephanie Noble
Esin Sözer
Tao Sun
Meni Wanunu
Amir Vahabikashi
Mohammad Abbas Yaseen

Biomechanics and Mechanobiology

Rouzbeh Amini
Chiara Bellini
Guohao Dai
Eno Ebong
Daniel Grindle
Frank Loth
Jessica Oakes
Harikrishnan Parameswaran
Jeffrey Ruberti
Sandra Shefelbine
Tao Sun
Amir Vahabikashi
Ning Wang

Molecular, Cell, and Tissue Engineering

Anand Asthagiri
Ambika Bajpayee
Samuel Chung
Guohao Dai
Eno Ebong
Christa Haase
Michael Jaeggli
Miten Jain
Abraham Joy
Elizabeth Libby
Lee Makowski
Mona Minkara
Mark Niedre
Harikrishnan Parameswaran
Sara Rouhanifard
Jeffrey Ruberti
Shiaoming Shi
Nikolai Slavov
Tao Sun
Meni Wanunu

Systems, Synthetic, and Computational Bioengineering

Anand Asthagiri
Saeed Amal
Chiara Bellini
Ben Gyori
Christa Haase
Miten Jain
Erel Levine
Herbert Levine
Elizabeth Libby
Mingyang Lu
Mona Minkara
Stephanie Noble
Jessica Oakes
Sara Rouhanifard
Nikolai Slavov
Eduardo Sontag
Kiran Vanaja
Lei Wang
Jing-Ke Weng
Raimond Winslow

Engineering Education

Aileen Huang-Saad

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Saeed Amal

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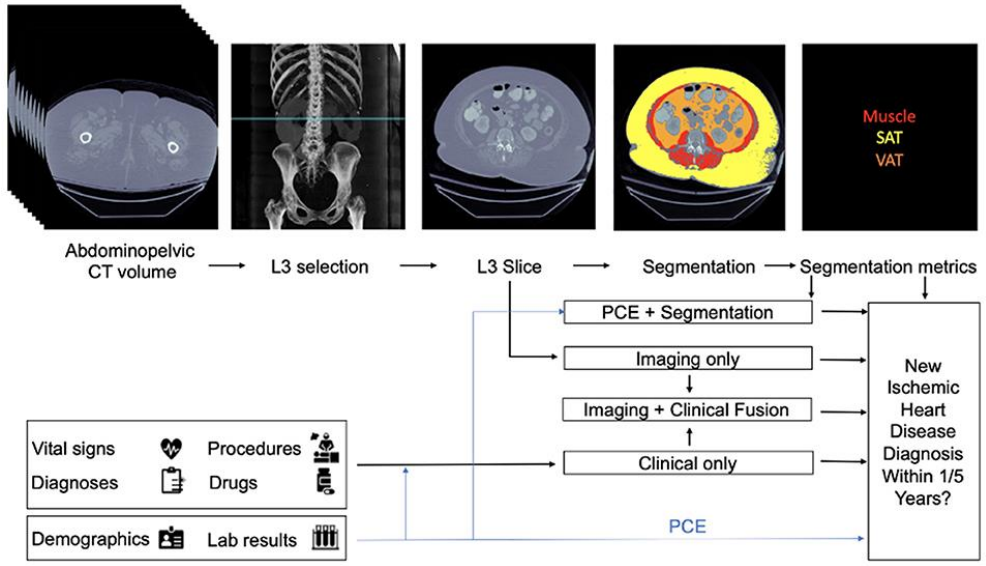
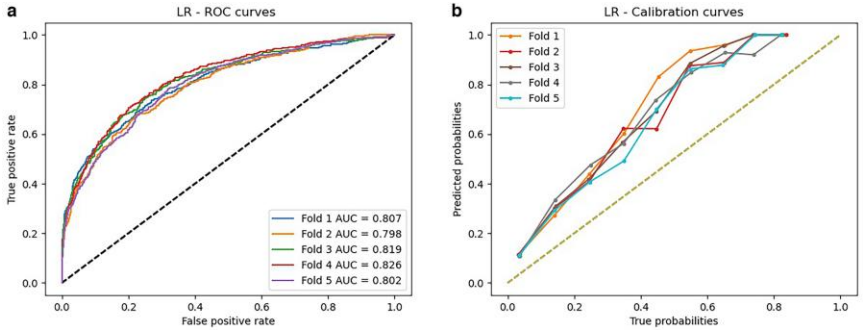
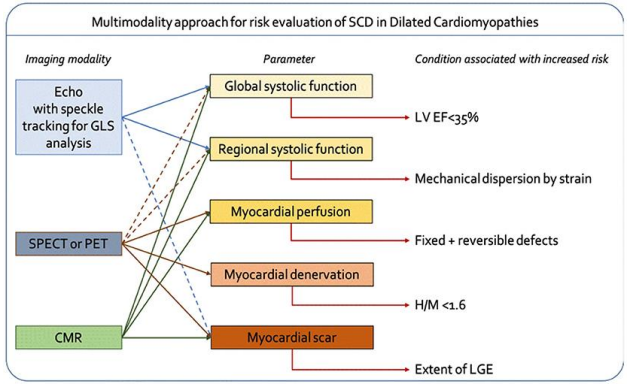
Bioengineering

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Artificial intelligence including deep learning and machine learning for healthcare, natural language processing (NLP) and image processing for healthcare, recommender systems for healthcare







Lab Website: https://amallab.sites.northeastern.edu/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/amal-saeed/

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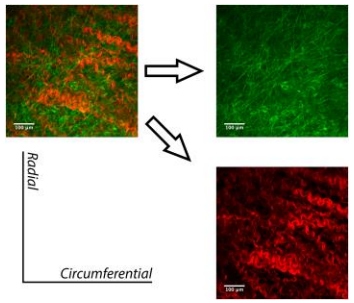
Rouzbeh Amini

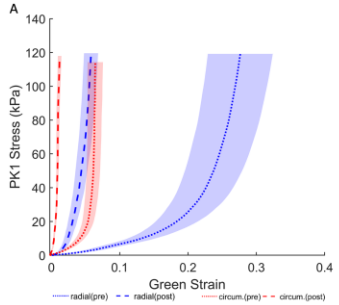
Associate Professor of Bioengineering & Mechanical and Industrial Engineering
r.amini@northeastern.edu

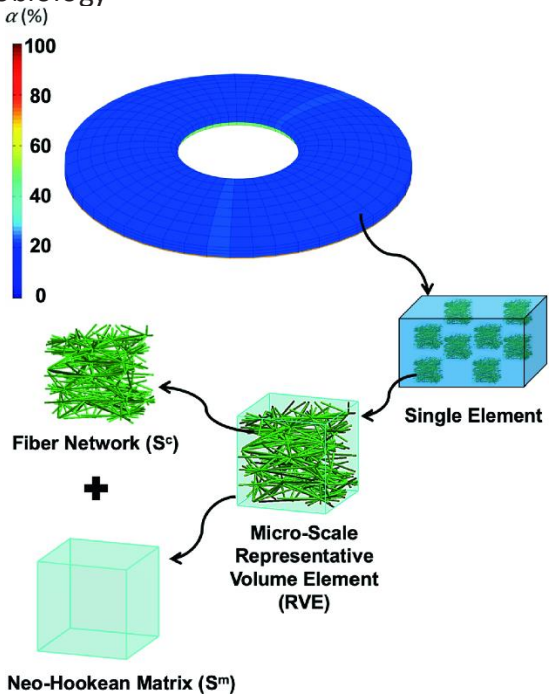
Northeastern University
College of Engineering
Bioengineering

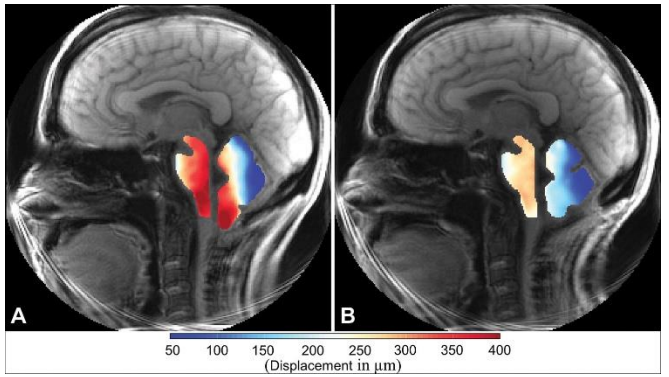
Research Area 2: Biomechanics and Mechanobiology

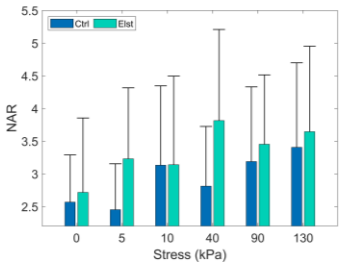
Research Interests: Structural and mechanical Characterization, multi-scale modeling, and image-based biomechanics and mechanobiology

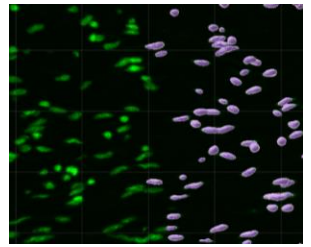












Lab Website: https://ramini.coe.northeastern.edu/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/amini-rouzbeh/

LVX VERITAS VIRTVS

Anand Ashthagiri

Associate Professor of Bioengineering

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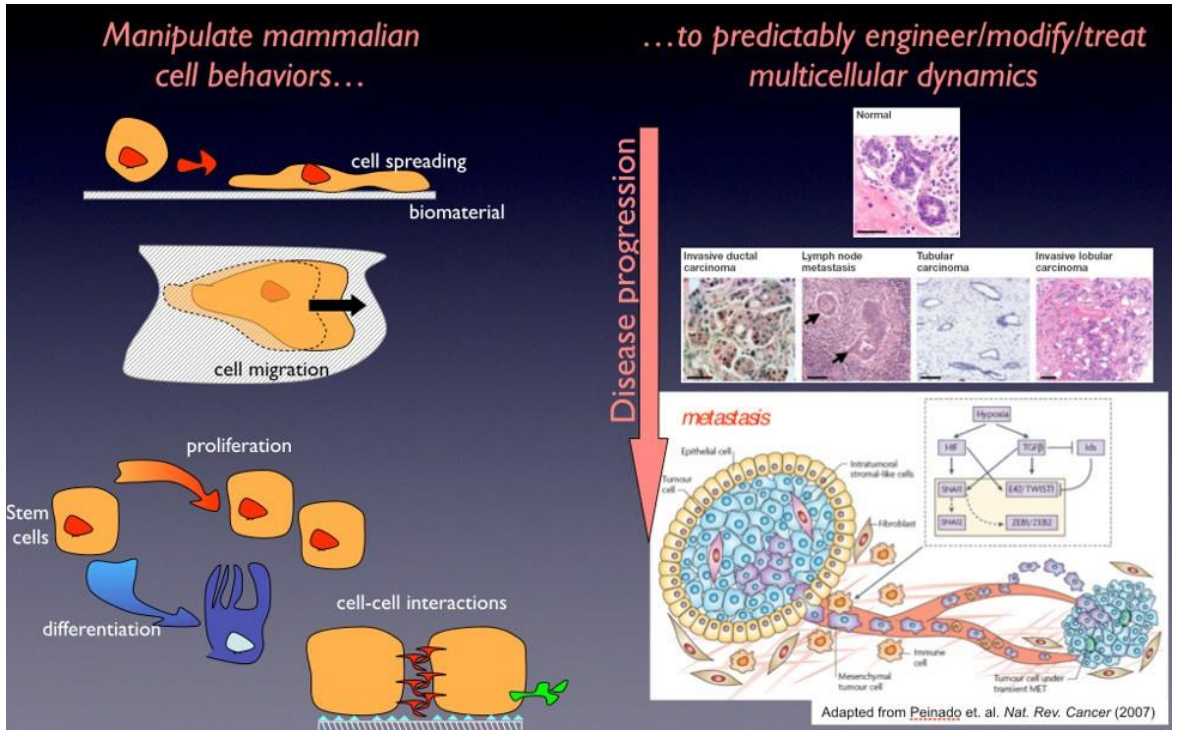
a.asthagiri@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 3: Molecular, Cell, and Tissue Engineering
Research Area 4: Systems, Synthetic, and Computational Bioengineering

*Research Interests: C*ell and tissue engineering, quantitative principles of cancer cell biology and developmental biology



Lab Website: http://www.cell-engineering.org
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/asthagiri-anand/

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Ambika Bajpayee

Associate Professor of Bioengineering

Molecular Bioelectrostatics & Drug Delivery Lab; Affiliated Faculty, Chemical Engineering and Global Resilience Institute
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Northeastern University
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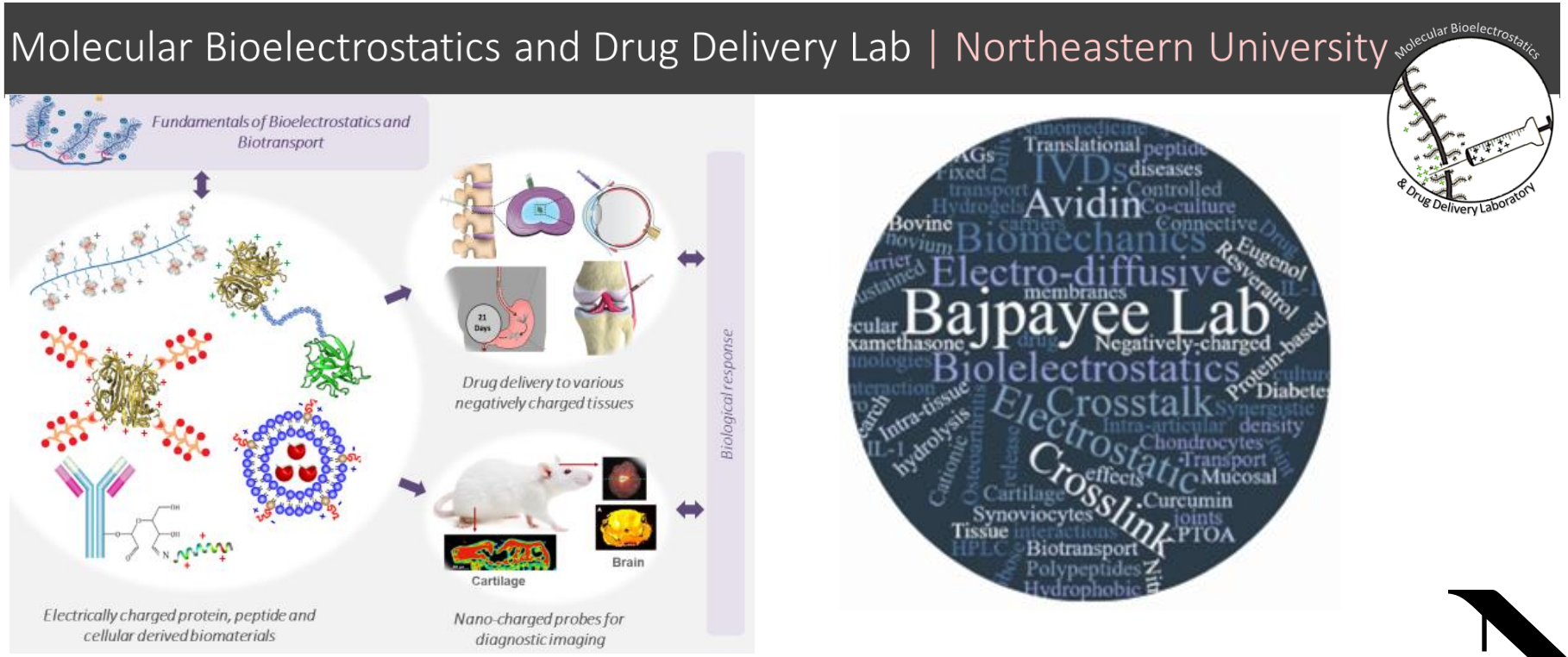
Bioengineering

Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: Targeted delivery of drugs and imaging probes; bio-electrostatics; bio-transport modeling; mechanisms underlying trauma and age induced osteoarthritis



Lab Website: https://web.northeastern.edu/bajpayeelab/

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/bajpayee-ambika/

LVX VERITAS VIRTVS

Chiara Bellini

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Associate Chair for Research and PhD Programs

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Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Cardiovascular mechanics; cell-mediated growth & remodeling of tissues and organs; thoracic aortic aneurysms; arterial stiffness; vascular/skeletal systems interaction; effect of chronic aerosol inhalation on cardiovascular function

1

need – cardiovascular outcomes of chronic vaping?

accomplishment – preclinical exposure model showing inflammation, endothelial dysfunction, and aortic stiffening

impact – inform regulation of e-cig devices

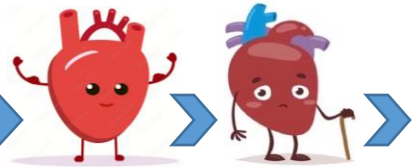
2

need – cardiovascular outcomes of wildfire smoke inhalation?

accomplishment – preclinical exposure model showing declined ejection fraction, aortic distensibility, and vasodilatation

impact – inform occupational standards for exposure and PPE in wildland firefighters

ENVIRONMENTAL STRESSORS



ACCELERATED AGING

CARDIOVASCULAR EVENTS

3

need – endovascular treatment for ascending thoracic aortic aneurysm (ATAA)?

accomplishment – lengthwise mechanical characterization of the human ATAA tissues

impact – criteria for design and testing of stent grafts catering to ATAA

The research program in the Bellini lab aims at predicting and optimizing the treatment of adverse cardiovascular events that occur in response to environmental stressors accelerating the aging process. Key research thrusts in the lab focus on: (1) nicotine/cannabis e-cig vaping, (2) wildland fire smoke inhalation, and (3) aortic aneurysm progression.

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/bellini-chiara/

Samuel Chung

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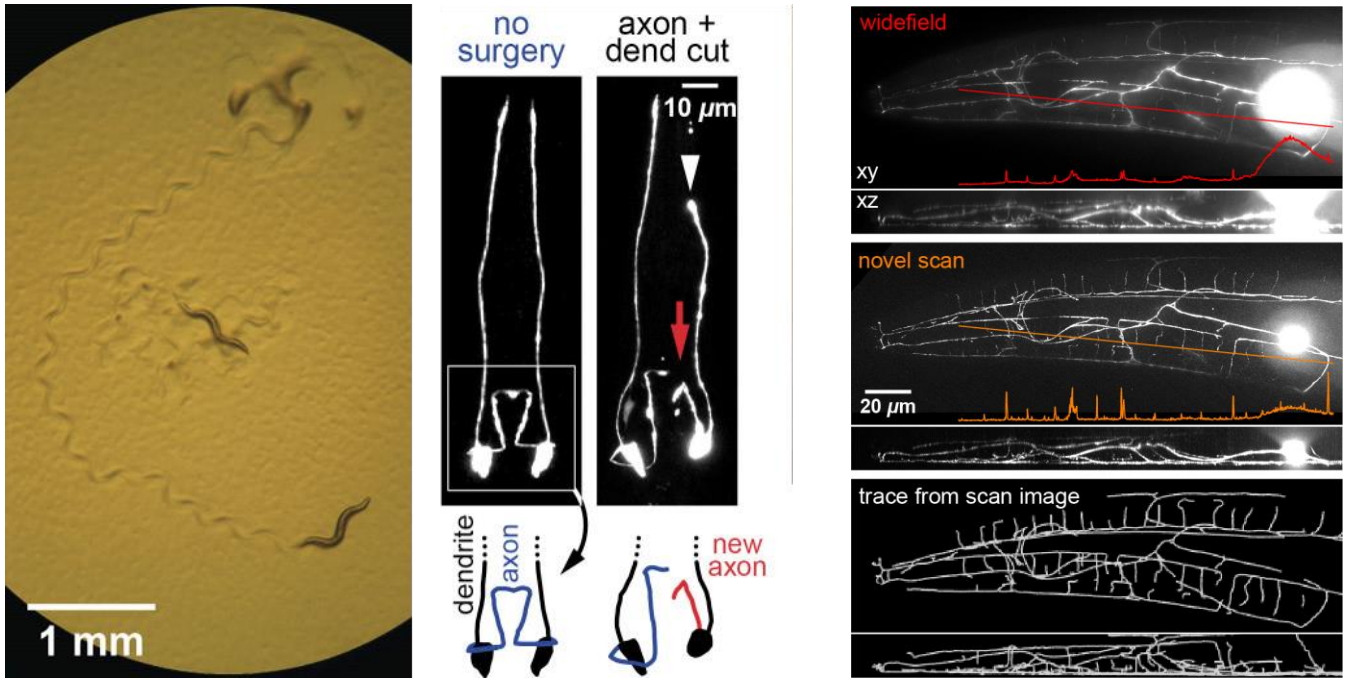
College of Engineering
Bioengineering

Research Area 1: Biomedical Devices and Bioimaging
Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: microscopy automation; subcellular laser surgery; axon regeneration



Lab Website: https://sites.google.com/view/wormneurolab/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/chung-samuel/

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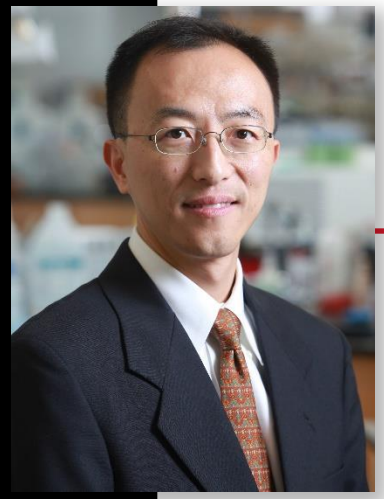


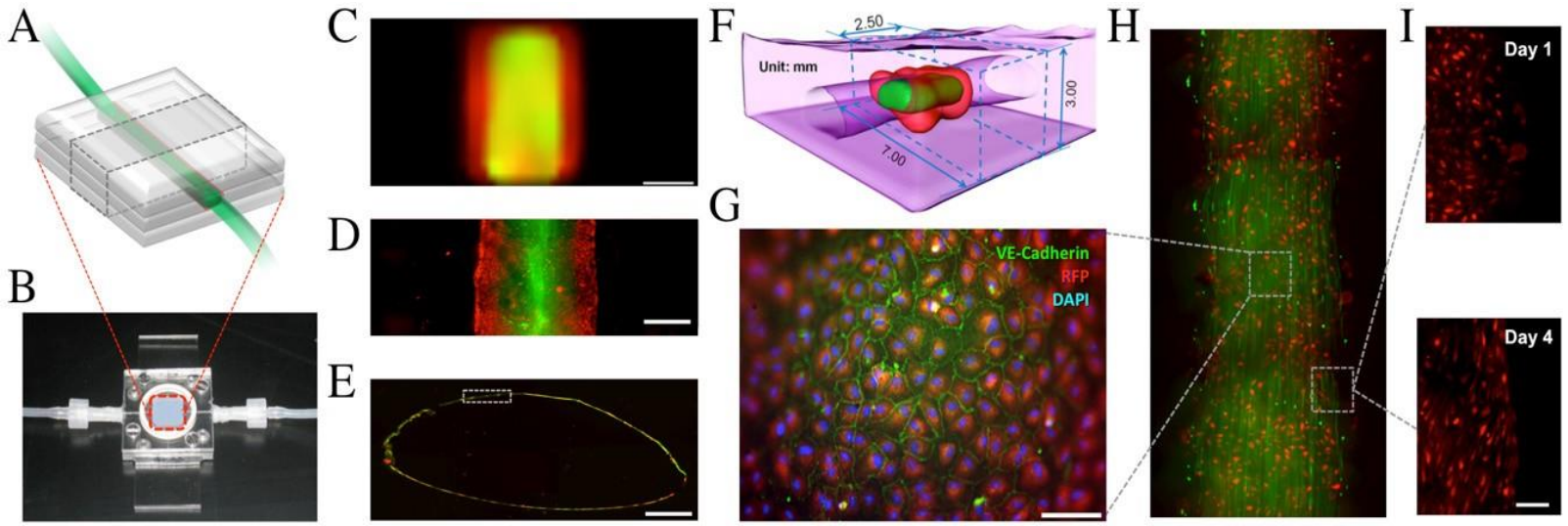
Guohao Dai

Professor of Bioengineering
g.dai@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology
Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: Vascular Tissue Engineering, Stem Cell Engineering, 3D Bioprinting



Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/dai-guohao/

LVX VERITAS VIRTVS

Eno Ebong

Associate Professor of Chemical Engineering & Bioengineering

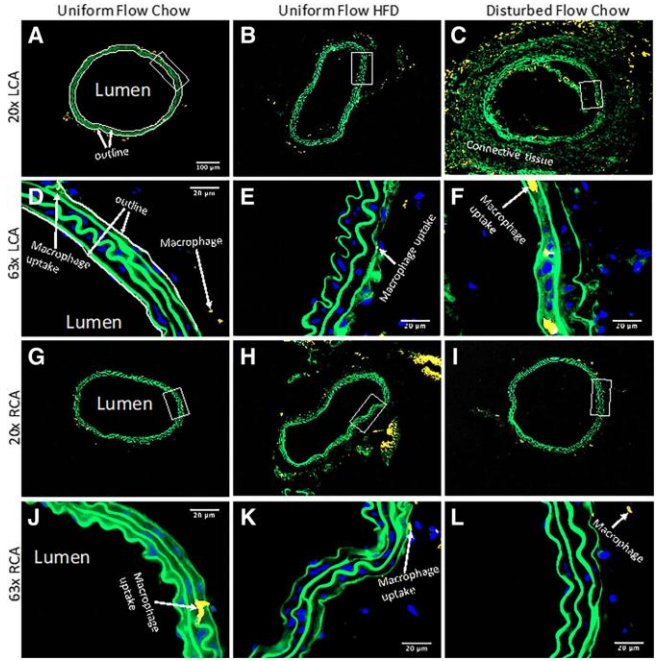
Associate Chair of Graduate Studes; Affiliated Faculty, Biology

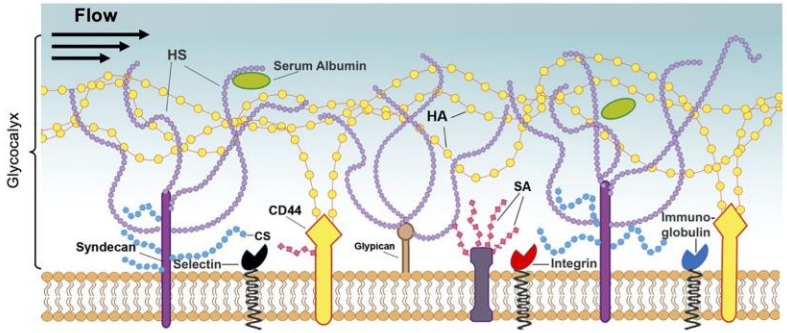
e.ebong@northeastern.edu

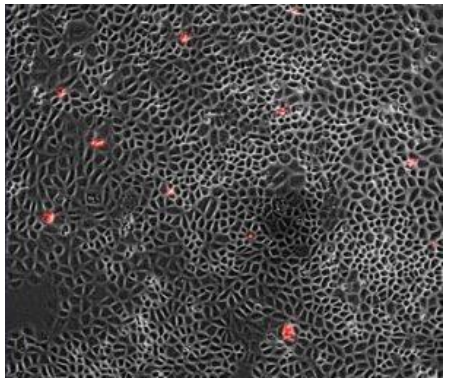
Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology
Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: Studying the means by which endothelial cell mechanotransduction occurs in order to prevent or promote diseases related to blood vessel dysfunction







Lab Website: https://ebonglab.org/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/ebong-eno/

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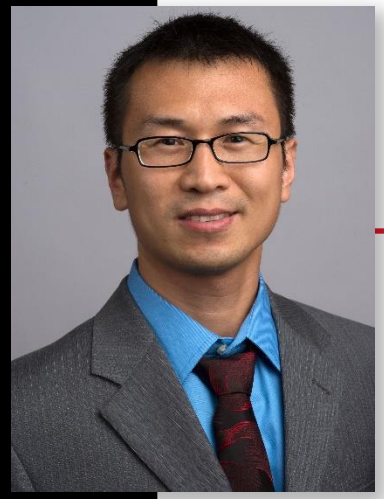


Qianqian Fang

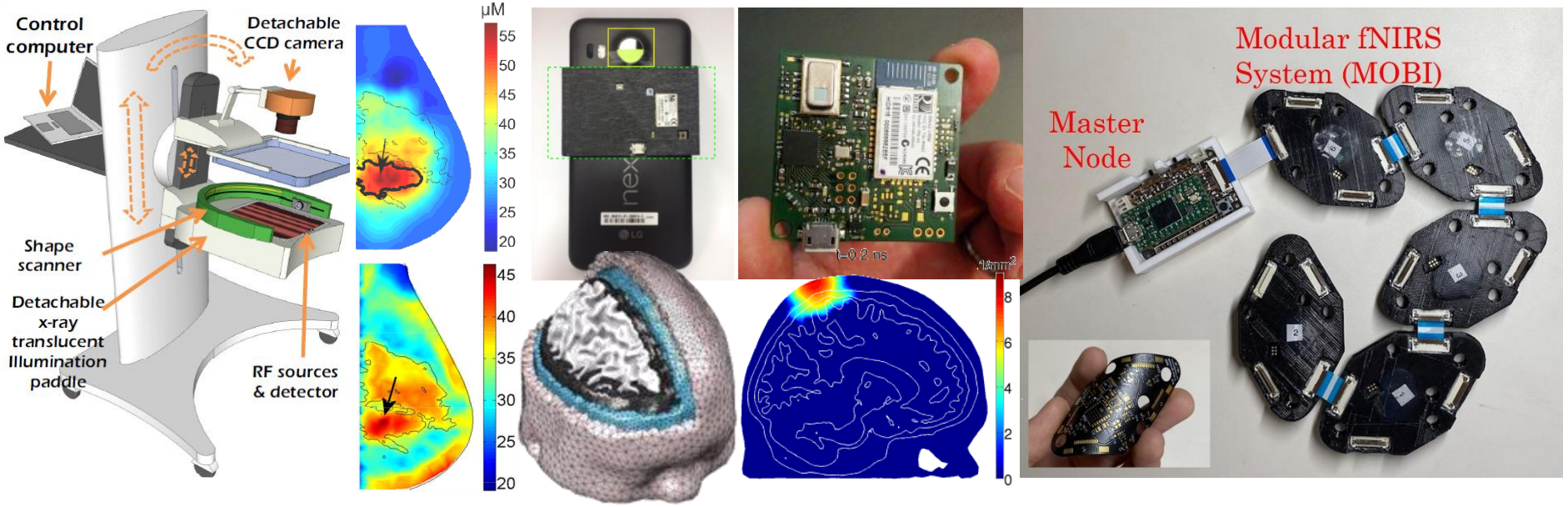
Associate Professor of Bioengineering

Affiliated Faculty, Electrical and Computer Engineering
q.fang@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 1: Biomedical Devices and Bioimaging

Research Interests: Optical tomography, computational optics, optical brain imaging, neuroinformatics



Lab Website: https://fanglab.org; http://mcx.space ; http://neurojson.org
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/fang-qianqian/

LVX VERITAS VIRTVS

Ben Gyori

Associate Professor of Khoury College of Computer Science & Bioengineering

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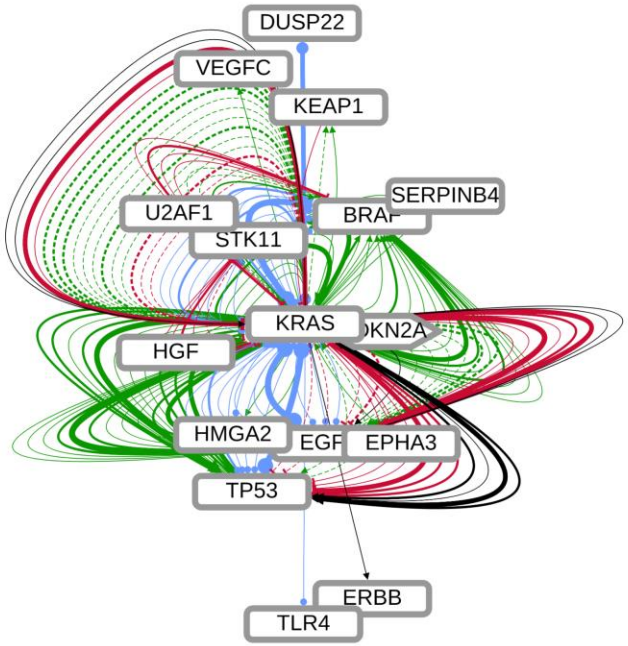
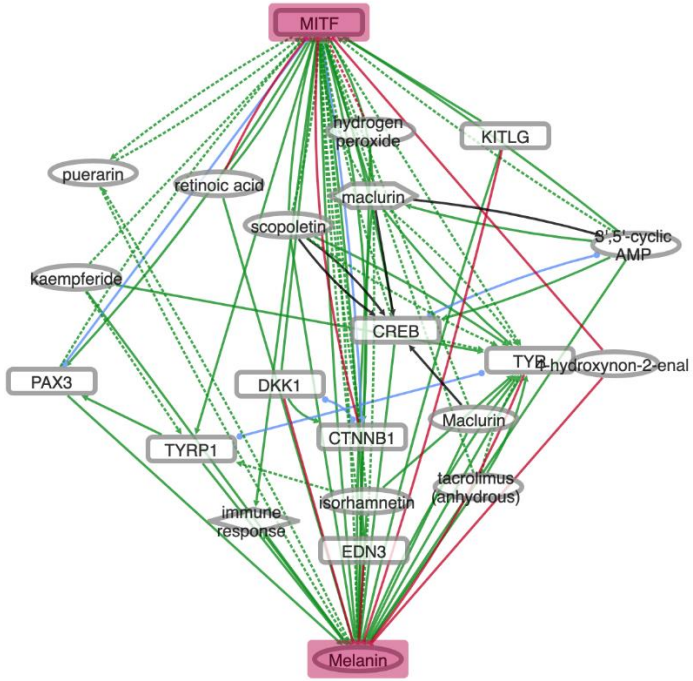
College of Engineering
Bioengineering

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Systems biology, bioinformatics, and artificial intelligence





Lab Website: https://gyorilab.github.io/ ; https://github.com/bgyori

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/gyori-benjamin/

LVX VERITAS VIRTVS

Christa Haase

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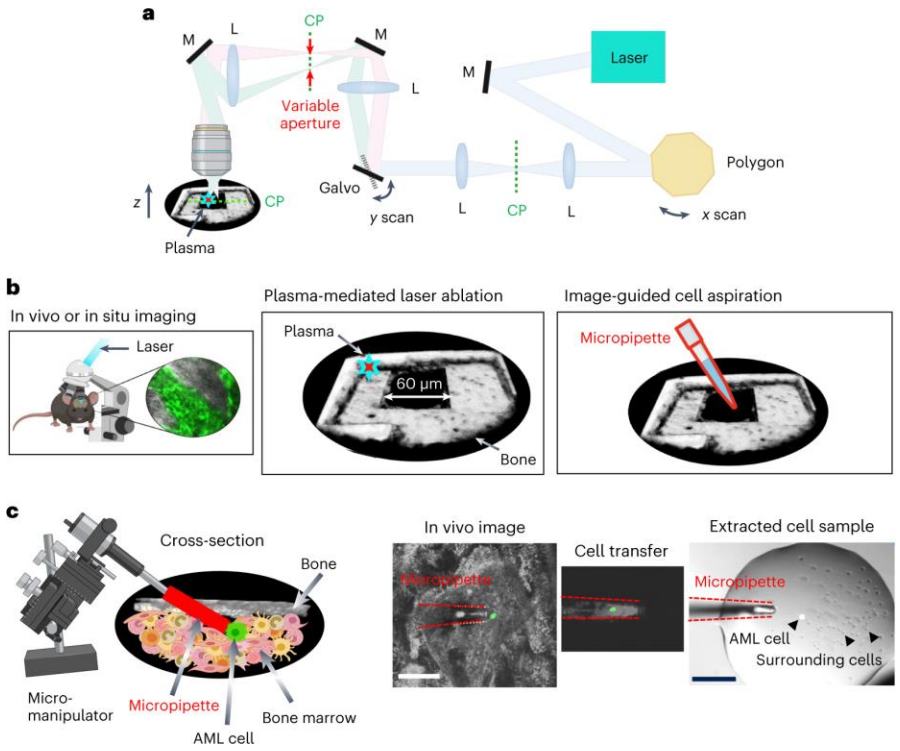
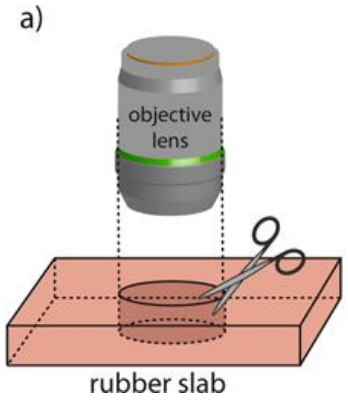
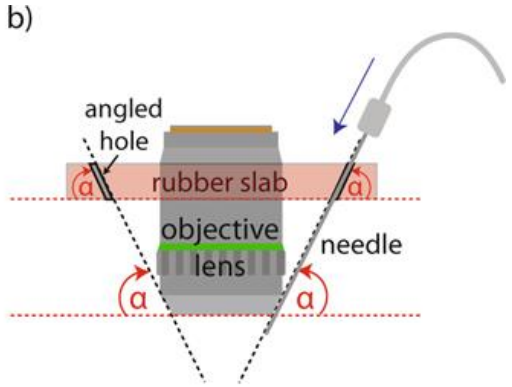
Northeastern University
College of Engineering
Bioengineering

Research Area 1: Biomedical Devices and Bioimaging
Research Area 3: Molecular, Cell, and Tissue Engineering
Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Cellular communications in health and disease; spatial, single cell, and optical technologies







Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/haase-christa/

LVX VERITAS VIRTVS

Aileen Huang-Saad

Associate Professor of Bioengineering

Director of Life Science and Engineering Programs

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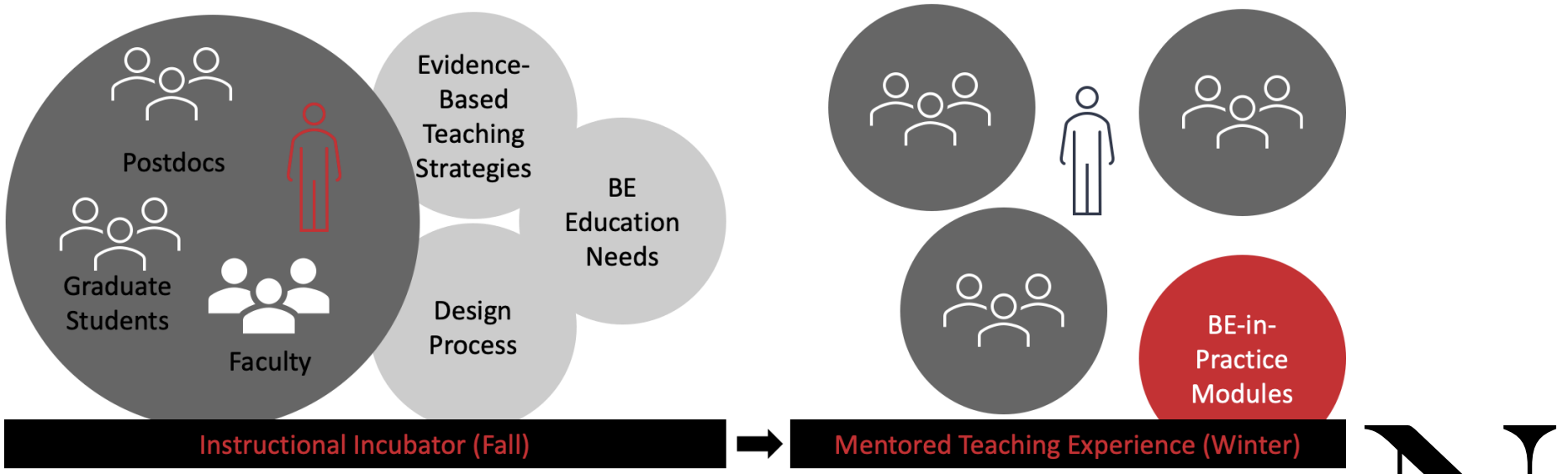
Northeastern University
College of Engineering
Bioengineering

Research Area: Engineering Education

Research Interests: Entrepreneurship education microenvironments and their impact on the engagement of diverse populations, the influence of I-Corps on university ecosystems, and transforming BME education through instructional design

The Instructional Incubator was developed to increase student-centered, responsive teaching.



Lab Website: https://teel.sites.northeastern.edu/

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/huang-saad-aileen/

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Miten Jain

Assistant Professor of Bioengineering & Physics

mi.jain@northeastern.edu

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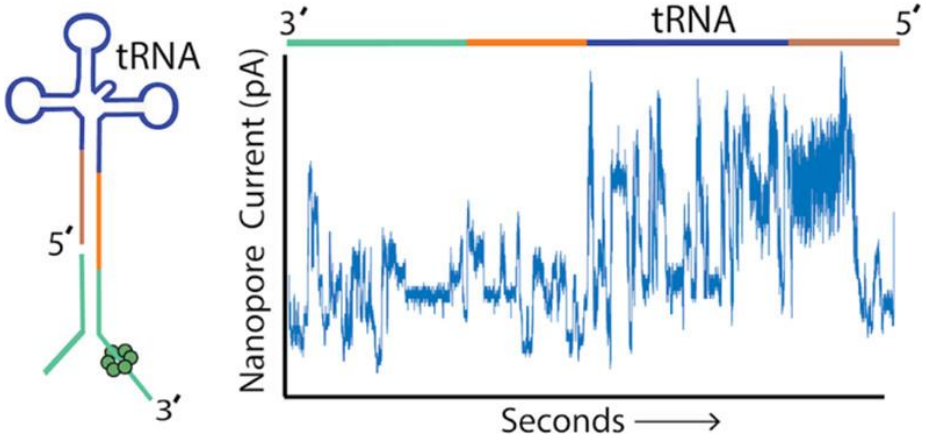
College of Engineering
Bioengineering

Research Area 3: Molecular, Cell. and Tissue Engineering
Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Genome organization and function; long read sequencing of DNA, RNA, and proteins; Nanopore technology; biological methods and deep learning for resolving complex repeats and nucleotide modifications; applying genomics to the clinic; developing therapeutic applications.



Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/jain-miten/

LVX VERITAS VIRTVS

Abraham Joy

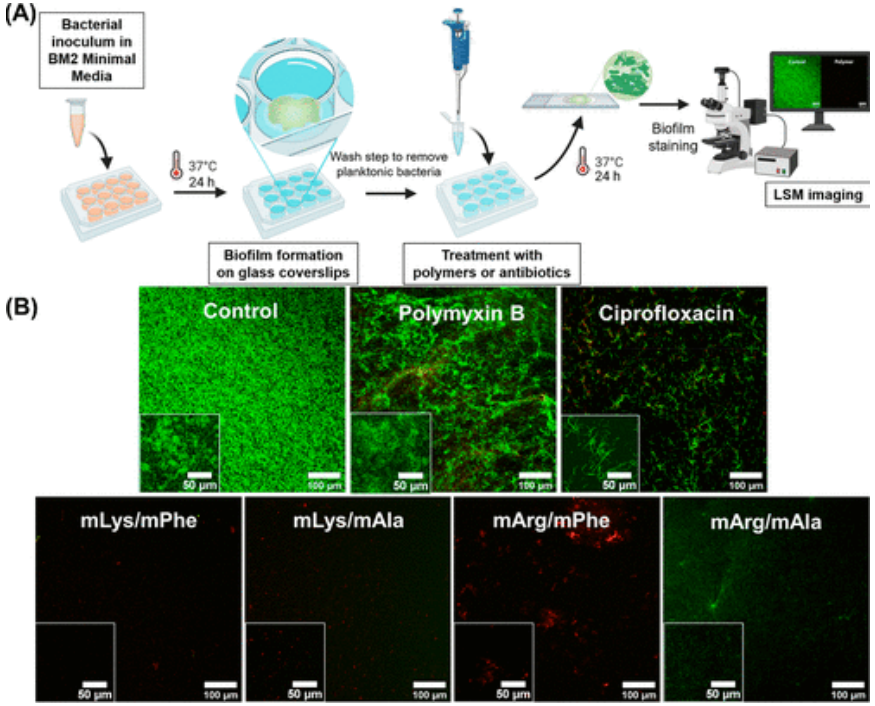
Professor of Bioengineering

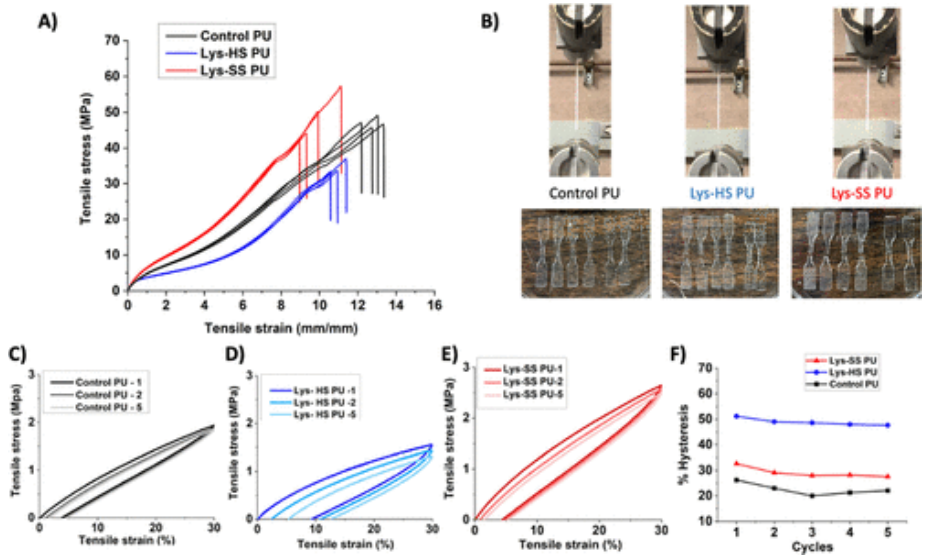
Chair of the Department of Bioengineering
a.joy@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: Design and use of biomaterials for wound healing; antimicrobial/antibiofilm strategies; soft-tissue replacement; polymer condensates; and sustained delivery of therapeutics





Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/joy-abraham/

LVX VERITAS VIRTVS

Erel Levine

Associate Professor of Bioengineering

Affiliated Faculty, Chemical engineering

e.levine@northeastern.edu

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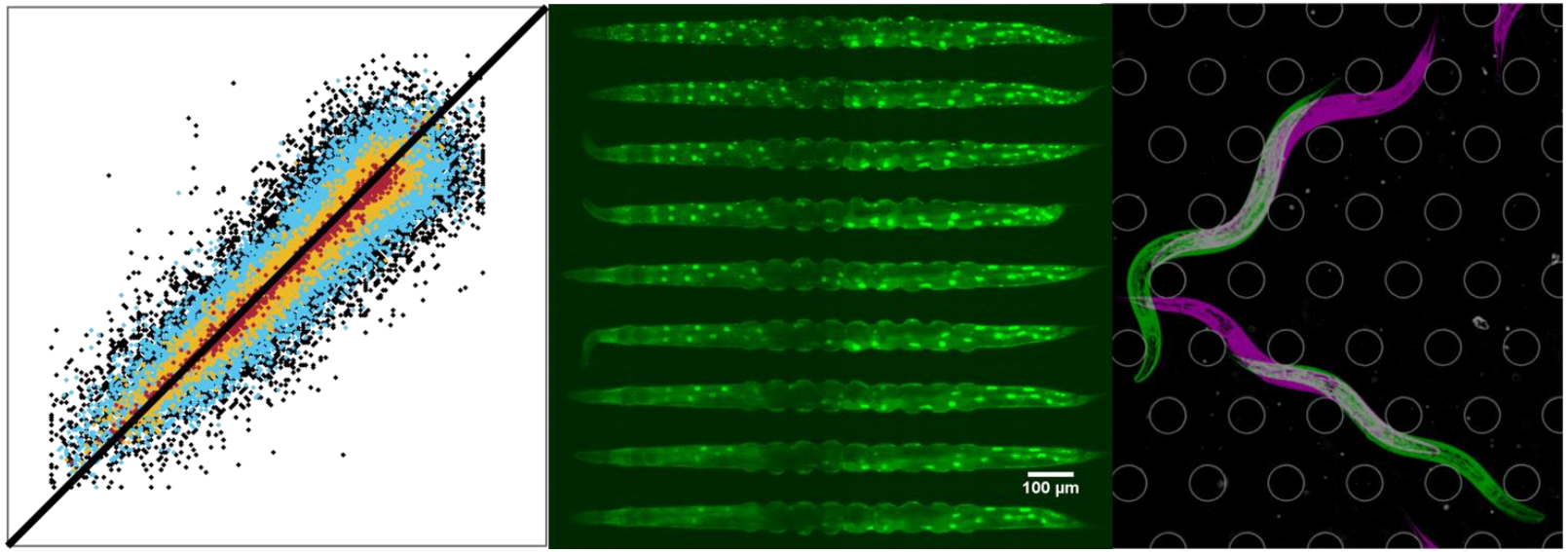
College of Engineering
Bioengineering

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Gut-brain interactions and its effects on health, stress response, and behavior; Statistical and machine learning approaches to biological data; Synthetic biology in multi-cellular organisms



Lab Website: https://web.northeastern.edu/sysbioeng/

Profile: https://coe.northeastern.edu/people/levine-erel/

LVX VERITAS VIRTVS

Herbert Levine

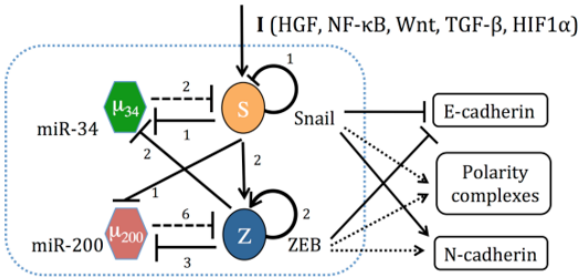
University Distinguished Professor of Bioengineering and Physics

h.levine@northeastern.edu

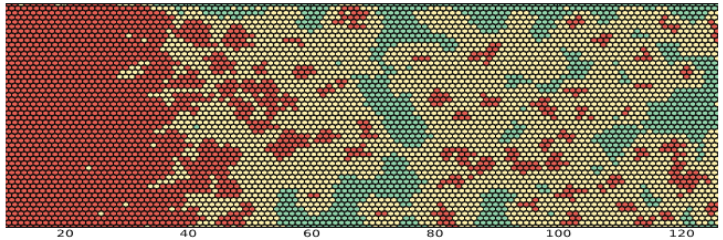
Northeastern University
College of Engineering
Bioengineering

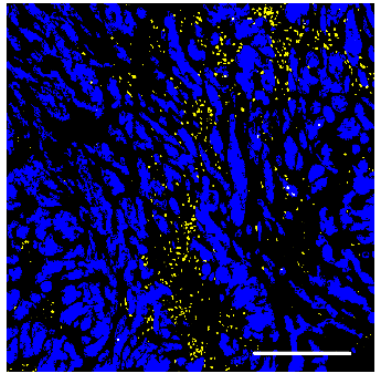
Research Area 4: Systems, Synthetic, and Computational Bioengineering

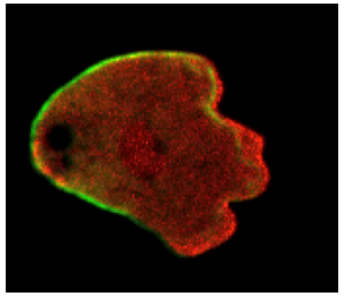
Research Interests: Physical modeling of cancer progression, metastasis and interaction with the immune system. Most recent interests include the role of metabolic plasticity in these processes and the co-evolution of the tumor and the adaptive immune system. Other areas include spatial organization of the actin cytoskeleton, the mechanics of collective cell motility, and the analysis of genetic circuits involved in cell fate decisions.



Basic circuit underlying epithelial plasticity







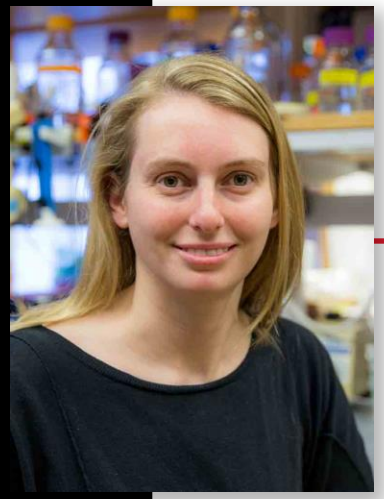
Chemotaxing cell showing actin (red). myosin (green)

T-cells (yellow) failing to invade tumor (experiment)

Spatial patterning of phenotypes (theory)

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/levine-herbert/



Elizabeth Libby

Assistant Professor of Bioengineering

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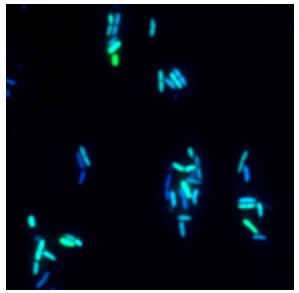
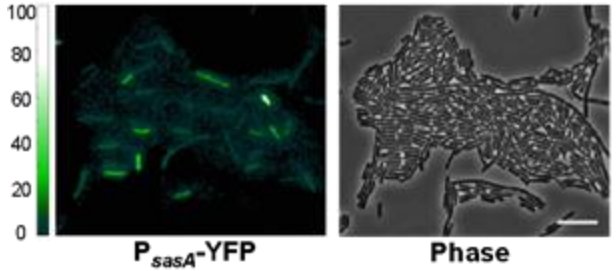
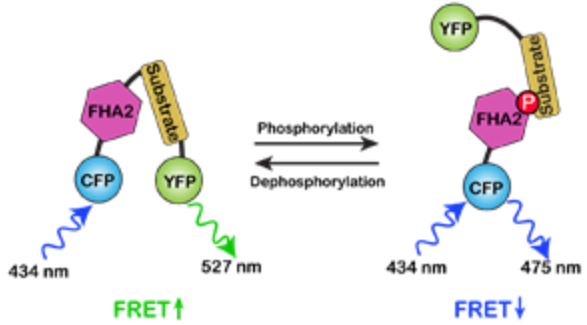
Northeastern University
College of Engineering
Bioengineering

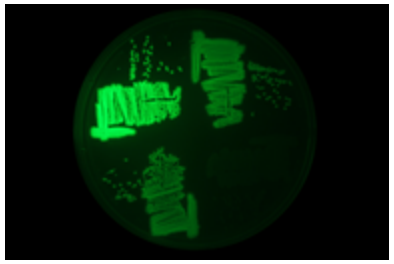
Research Area 3: Molecular, Cell, and Tissue Engineering
Research Area 4: Systems, Synthetic, and Computational Bioengineering

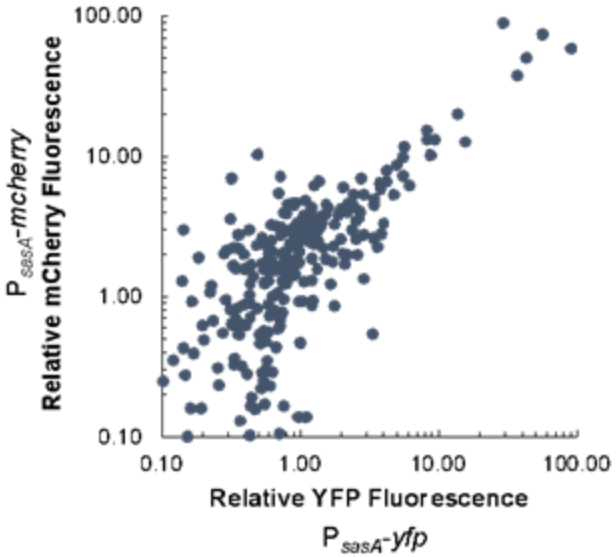
Research Interests: Synthetic biology, microbiology, biosensor development











Lab Website: https://libbylab.sites.northeastern.edu/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/libby-elizabeth/

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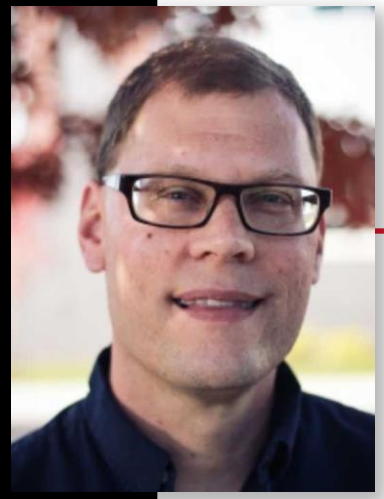


Frank Loth

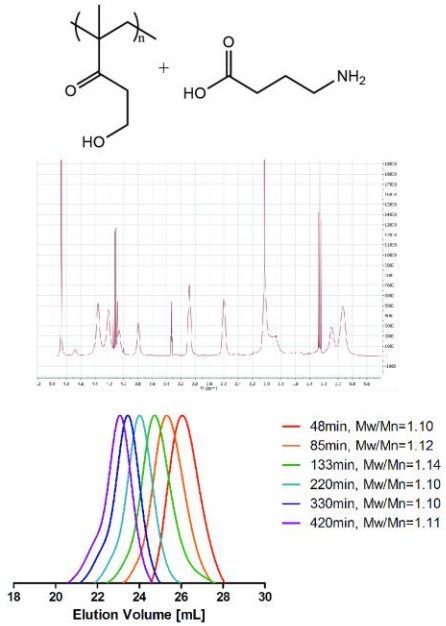
Professor of Mechanical and Industrial Engineering & Bioengineering

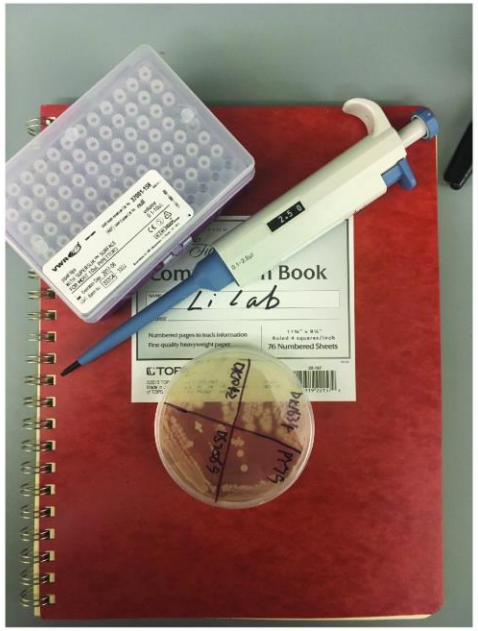
f.loth@northeastern.edu

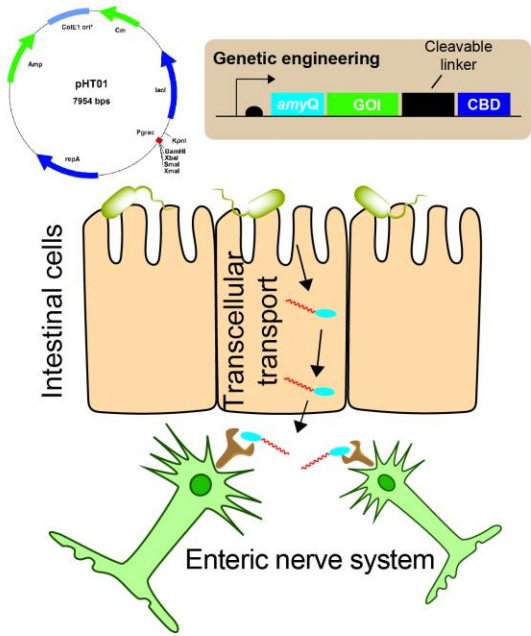
Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology

Research Interests: Biological flows, experimental fluid mechanics, computational fluid mechanics, blood flow simulation, cerebrospinal fluid simulation, Chiari malformation, syringomyelia, medical image processing, magnetic resonance imaging







Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/loth-francis/

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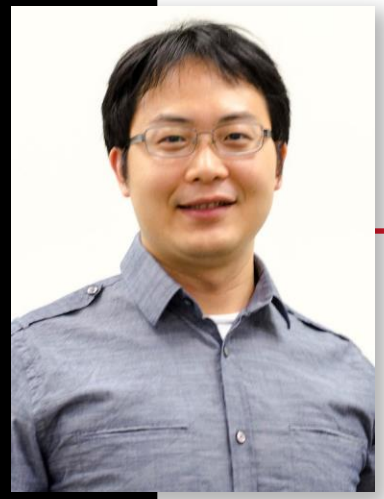


Mingyang Lu

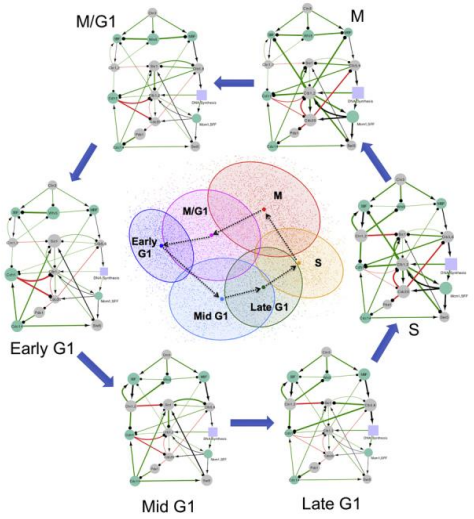
Assistant Professor of Bioengineering
m.lu@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

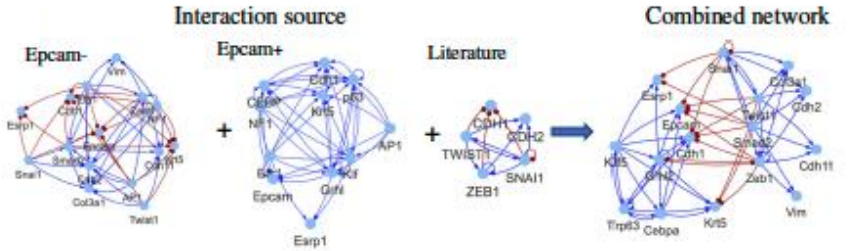
Research Area 4: Systems, Synthetics, and Computational Bioengineering

Research Interests: Computational systems biology, an integration of mathematical modeling and bioinformatics for studying gene regulatory networks, single cell genomics, epithelial-mesenchymal transition, coarse-graining, reverse engineering, machine learning, stochasticity and heterogeneity in gene expression

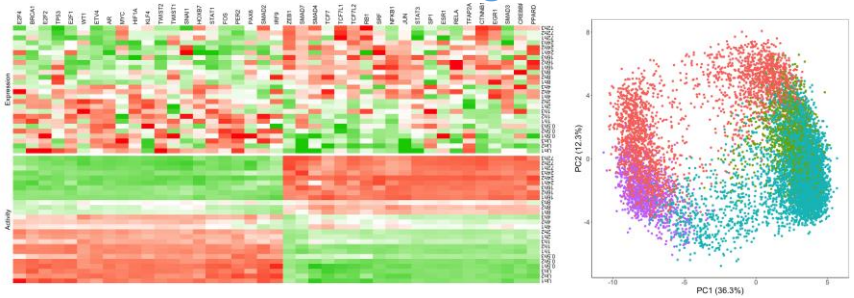
Modeling cellular state transitions



Gene network construction



Genomic data integration



Lab Website: https://lusystemsbio.northeastern.edu
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/lu-mingyang/

Lee Makowski

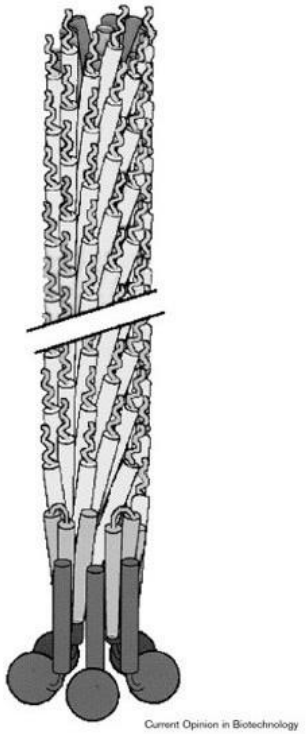
Professor of Bioengineering & Chemistry and Chemical Biology

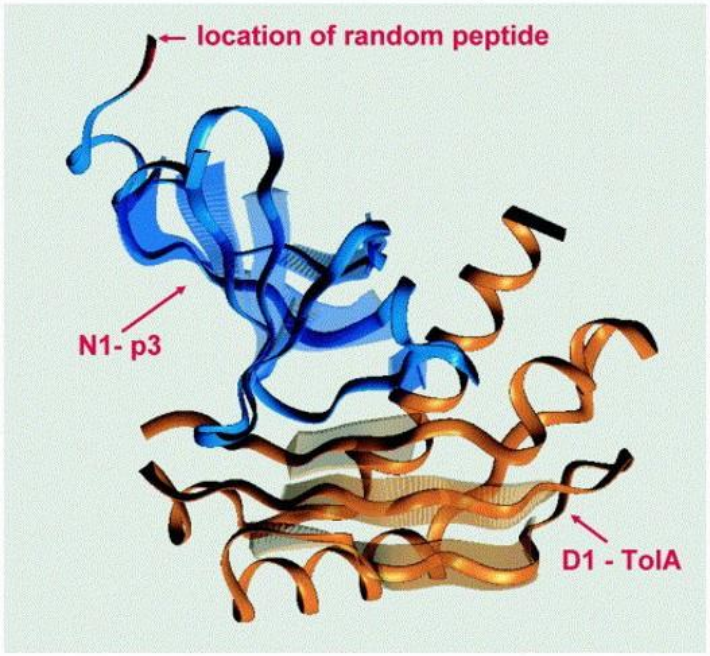
Affiliated Faculty, Electrical and Compter Engineering
l.makowski@northeastern.edu

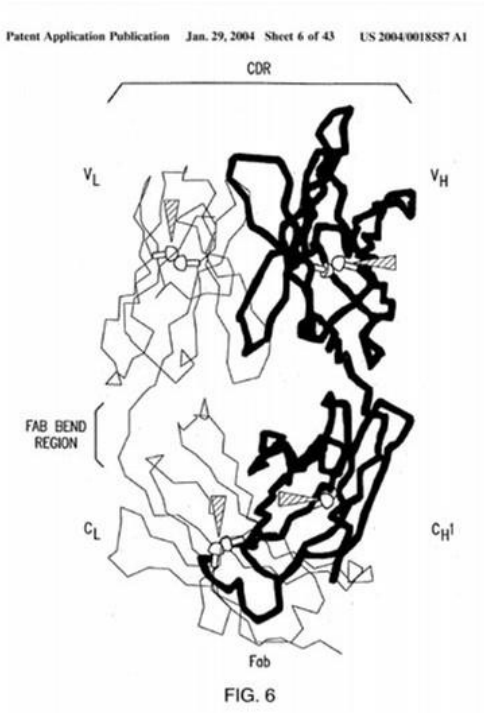
Northeastern University
College of Engineering
Bioengineering

Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: Image and signal processing as applied to biophysical data designed to answer fundamental questions about the molecular basis of living systems.







Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/makowski-lee/

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Mona Minkara

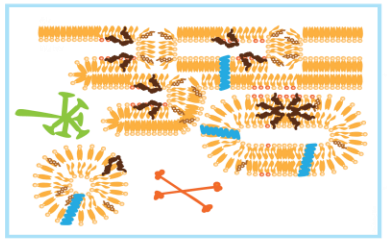
Assistant Professor of Bioengineering

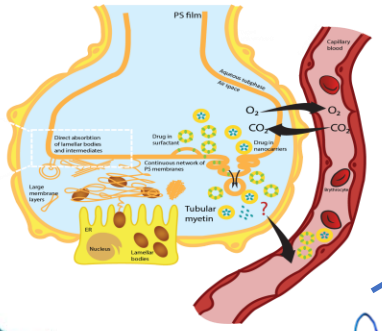
Affiliated Faculty, Chemistry and Chemical Biology
m.minkara@northeastern.edu

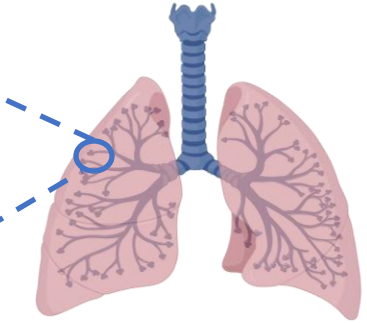
Northeastern University
College of Engineering
Bioengineering

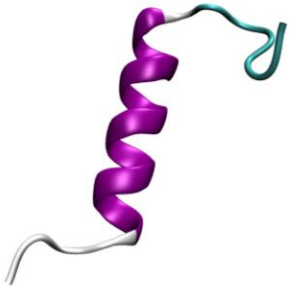
Research Area 4: Systems, Synthetic, and Computational Bioengineering

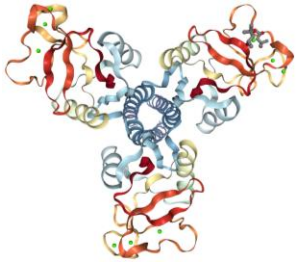
Research Interests: Pulmonary surfactant (PS), Surfactant immunoproteins, Innate immune response, Computational methods, Computational modeling, Molecular Dynamics, Monte Carlo Simulations, Interfacial Phenomena, Biological interfaces, Therapeutics, Molecular Biophysics, Computational chemistry, Bioengineering, STEM Accessibility











SP-A(PDB: 1R13)

SP-B (PDB: 1DFW)

SP-C (PDB: 2YAD)

SP-D (PDB: 4M18)

The pulmonary surfactant system is vital for healthy breathing and acts as the first line of defense against airborne pathogens.

Created with BioRender.com

Lab Website: http://www.minkaracombinelab.com
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/minkara-mona/

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Mark Niedre

College of Engineering Distinguished Professor of Bioengineering

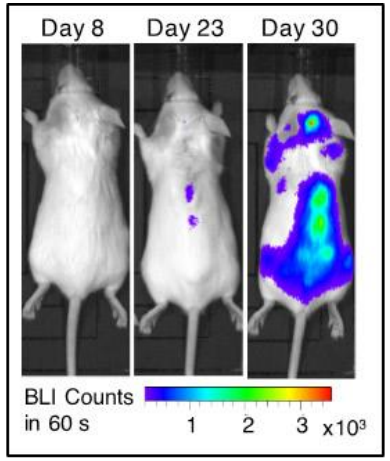
Associate Dean for PhD Education, Office of the Dean

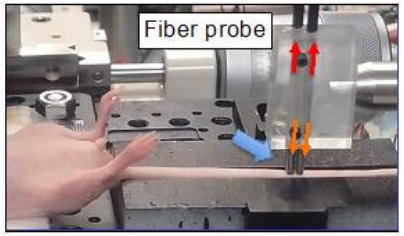
m.niedre@northeastern.edu

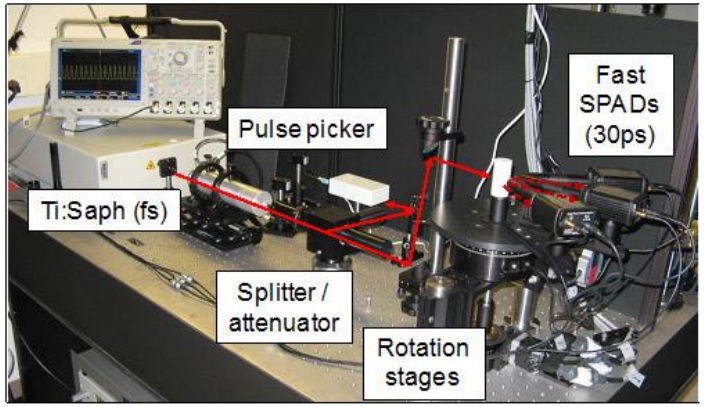
Northeastern University
College of Engineering
Bioengineering

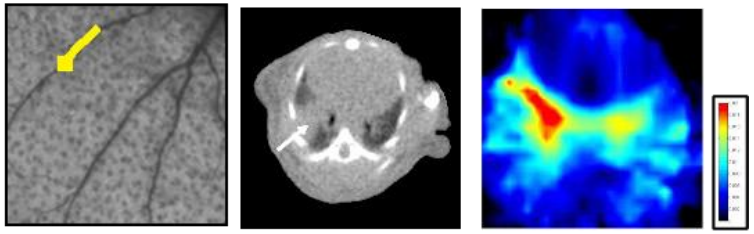
Research Area 1: Biomedical Devices and Bioimaging

Research Interests: Biomedical optics; fluorescence imaging; cancer metastasis; rare cell detection and tracking in the body; ultrafast light-tissue interactions; image reconstruction and signal processing









Lab Website: https://sites.google.com/site/niedrelab/home

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/niedre-mark/

LVX VERITAS VIRTVS

Stephanie Noble

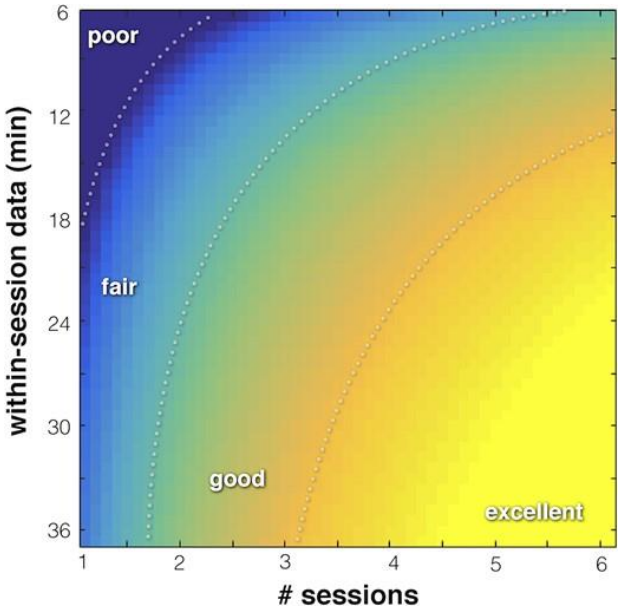
Assistant Professor of Psychology & Bioengineering

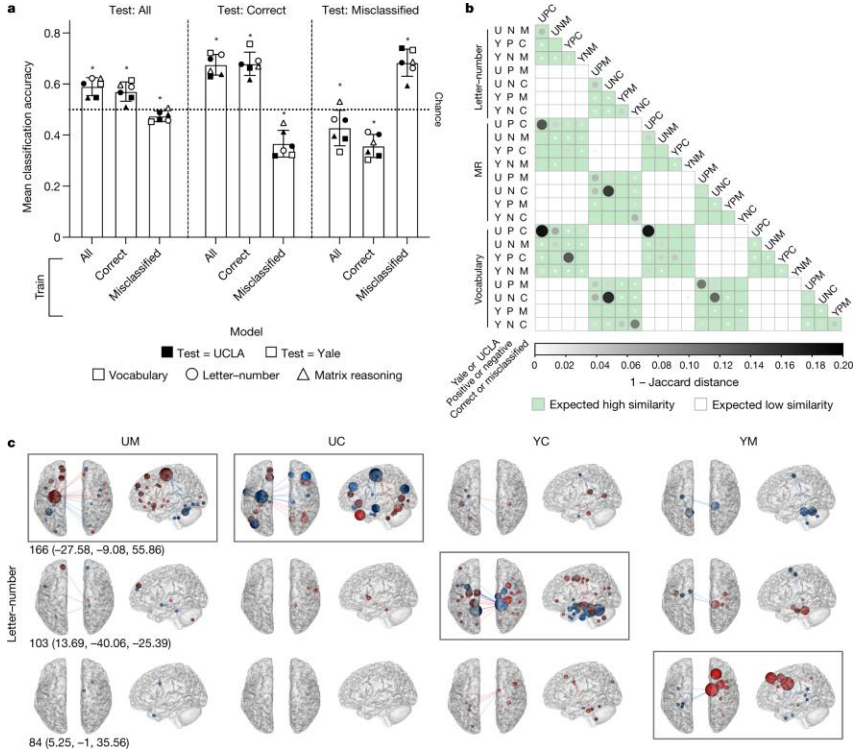
s.noble@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 1: Biomedical Devices and Bioimaging
Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Statistical and computational tools to facilitate more precise human neuroscience inference and prediction





Lab Website: https://sneuroble.github.io/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/noble-stephanie/

LVX VERITAS VIRTVS

Jessica Oakes

Associate Professor of Bioengineering

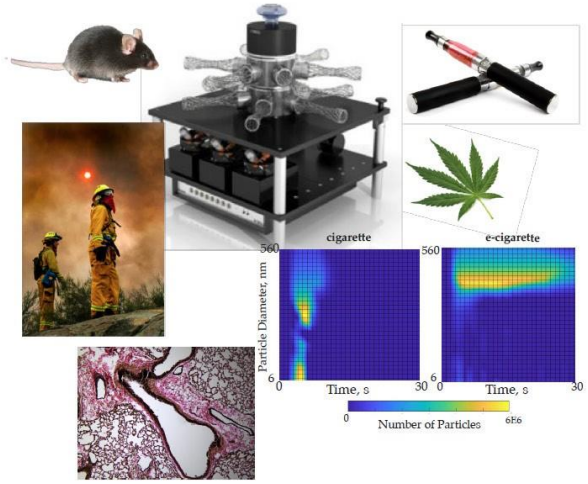
j.oakes@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

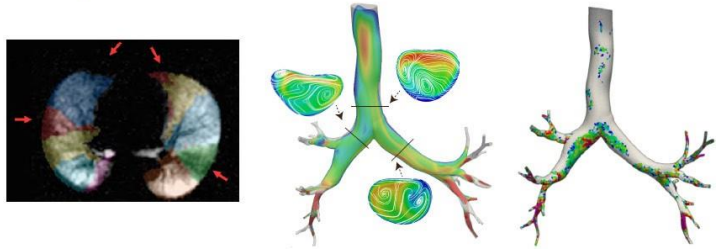
Research Area 2: Biomechanics and Mechanobiology
Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Pulmonary physiology, biofluids and transport phenomenon, computational biomechanics, magnetic resonance imaging, multi-scale modeling

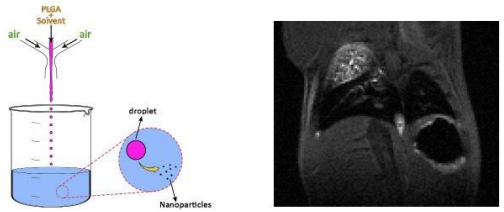
Cardiopulmonary Health Impact Following Chronic Exposure



Coupling Clinical Data with Modeling to Optimize Drug Delivery in Asthma



Targeted Nanoparticle Drug Delivery



Lab Website: https://www.northeastern.edu/biofluids/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/oakes-jessica/

LVX VERITAS VIRTVS

Harikrishnan Parameswaran

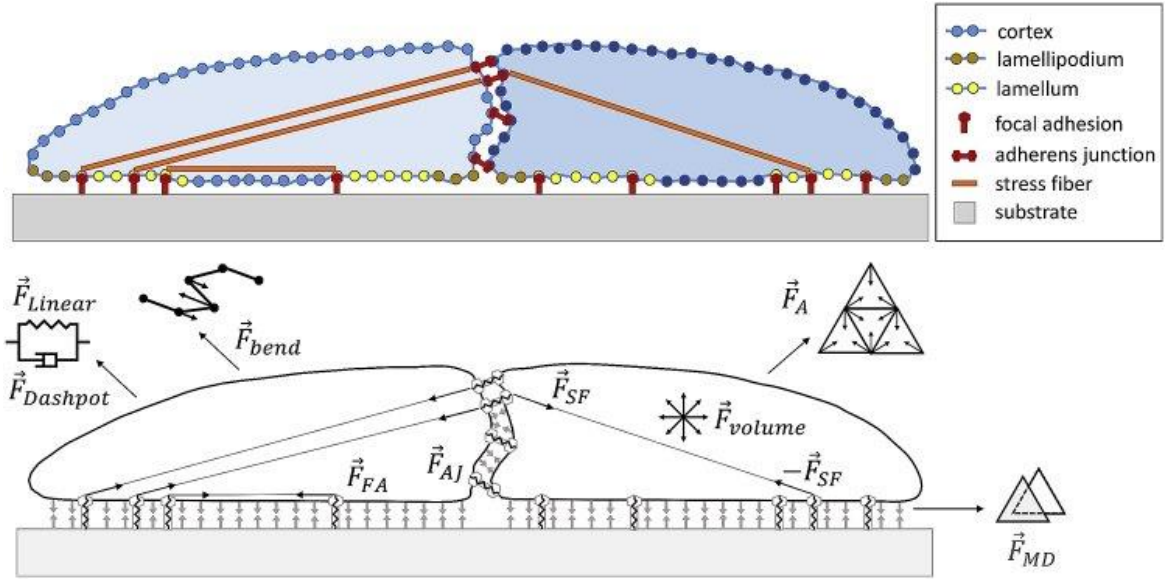
Associate Professor of Bioengineering

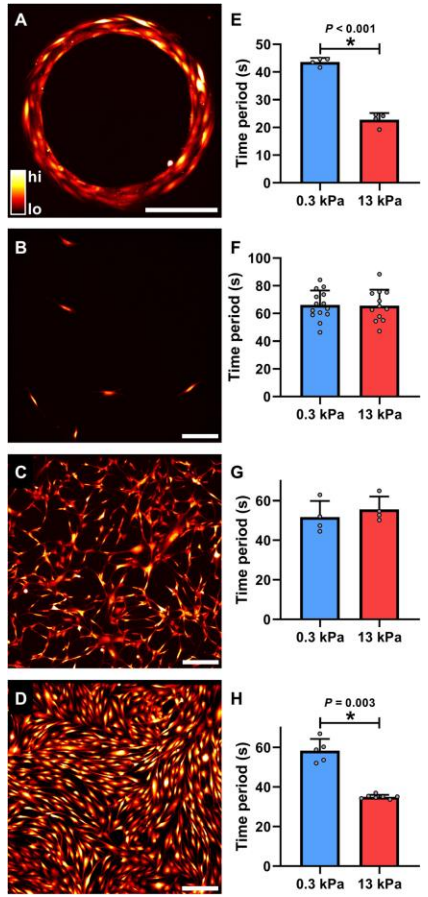
h.parameswaran@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology
Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: Cell-cell and cell-matrix interactions in airways to understand the fundamental mechanisms that regulate airway caliber; asthma; smooth muscle mechanics; computational modeling





Lab Website: https://web.northeastern.edu/breathe/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/parameswaran-harikrishnan/

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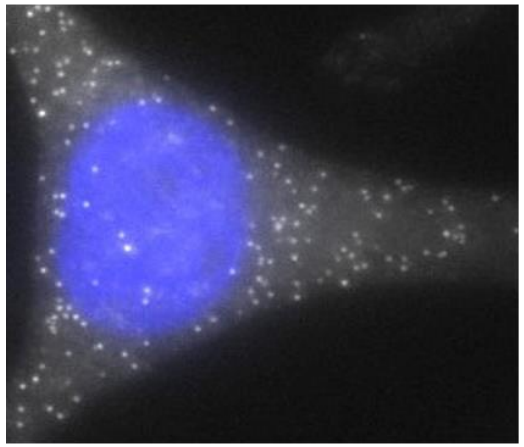
Sara Rouhanifard

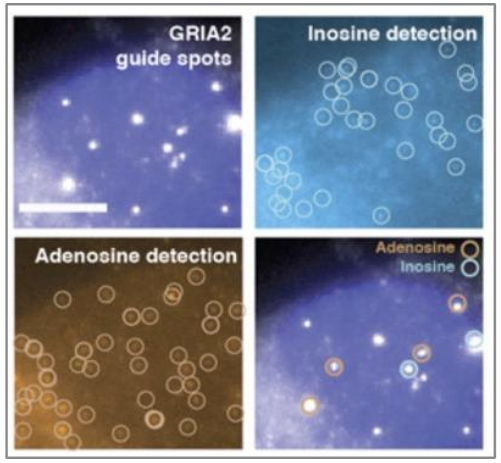
Assistant Professor of Bioengineering
s.rouhanifard@northeastern.edu

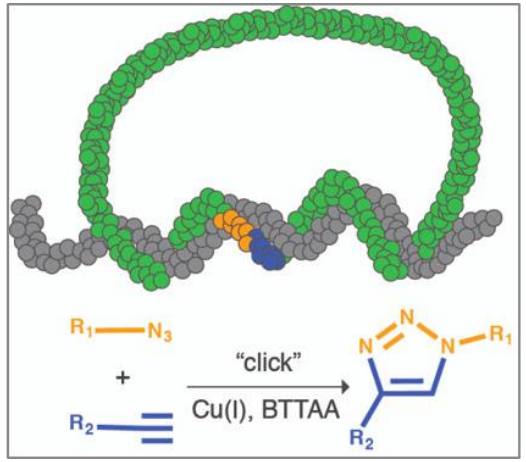
Northeastern University
College of Engineering
Bioengineering

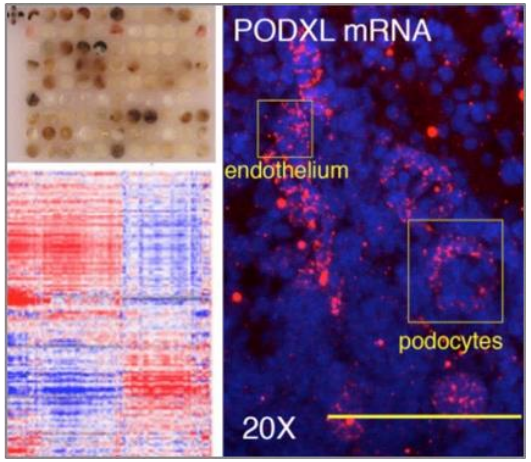
Research Area 3: Molecular, Cell, and Tissue Engineering
Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Development of single-cell technologies for DNA+RNA, Nucleic acid detection as a diagnostic tool, RNA modifications in developing neurons









Lab Website: https://rouhanifardlab.com/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/rouhanifard-sara/

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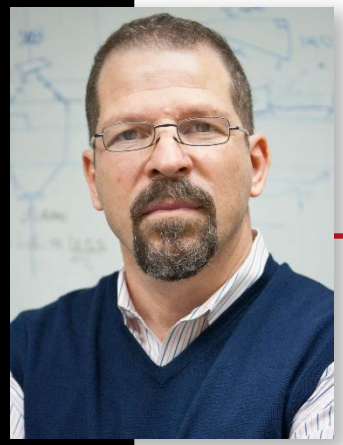


Jeffrey Ruberti

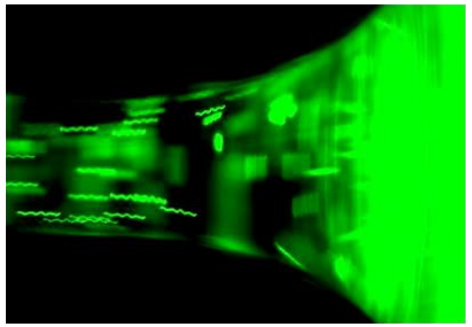
Professor of Bioengineering

Affiliated Faculty, Mechanical and Industrial Engineering
j.ruberti@northeastern.edu

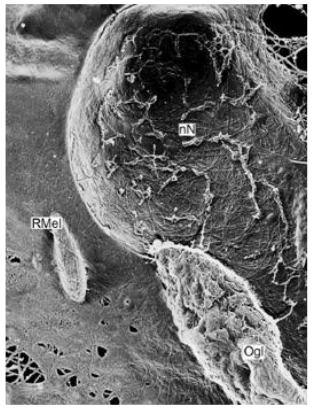
Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology
Research Area 3: Molecular, Cell, and Tissue Engineering

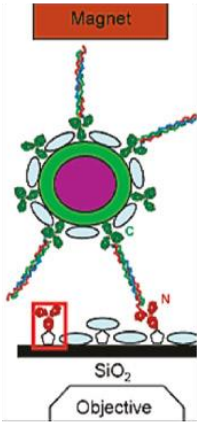
Research Interests: My lab focuses on the role matrix molecules play in the transition of animals from a loosely-connected grouping of cells to a fully-connected, mechanically robust structure. The relevant disciplines are: Mechanochemistry, Mechanobiology, Mechanobioreactor Development, Cell Culture, Single Molecule Light Microscopy, High Resolution Electron Microscopy.



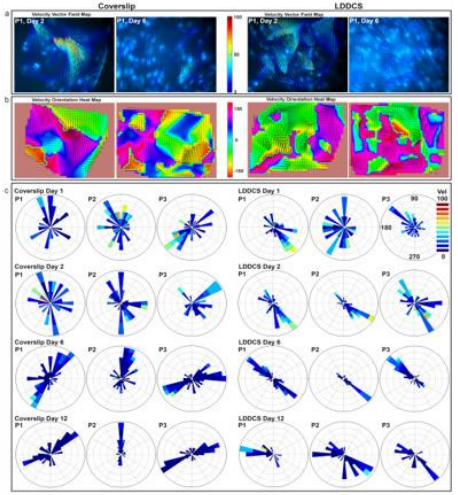
Mechanochemistry:
Extensional strain
drives collagen fibrillogenesis.
Fluorescence images show strain field in fluid
ACSNano 2016



High Resolution Microscopy:
Hole in cell matrix left behind by cell nucleus
Exp Eye Res 2017



Single Molecule Mechanochemistry:
Force slows enzymes
JACS 2011



Mechanobioreactors : Quantifying Cell Mechanodynamics
Tissue Eng A 2016

Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/ruberti-jeffrey/

LVX VERITAS VIRTVS

Sandra Shefelbine

Professor of Bioengineering & Mechanical and Industrial Engineering

Associate Dean for Space and Special Initiatives, Office of the Dean

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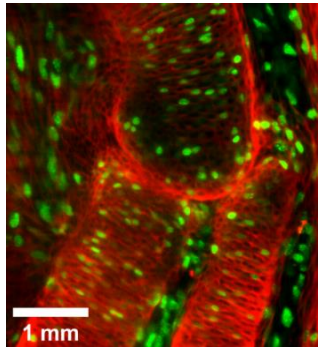
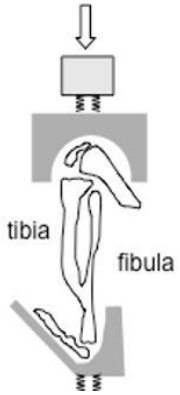
Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology

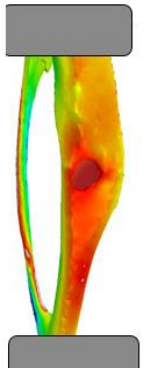
Research Interests: multi-scale mechanics of bones; adaptation of bone to mechanical loading during growth and ageing



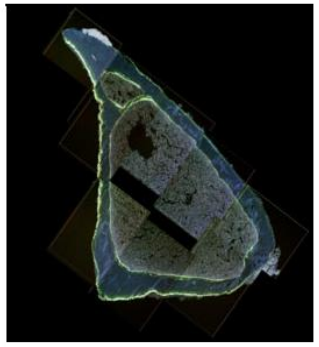
molecular microscopy



in vivo experiments



FEA



histology

musculoskeletal modeling

translational therapies

Lab Website: www.shefelbine.org
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/shefelbine-sandra/

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Nikolai Slavov

Professor of Bioengineering

Affiliated Faculty, Biology & Chemistry and Chemical Biology
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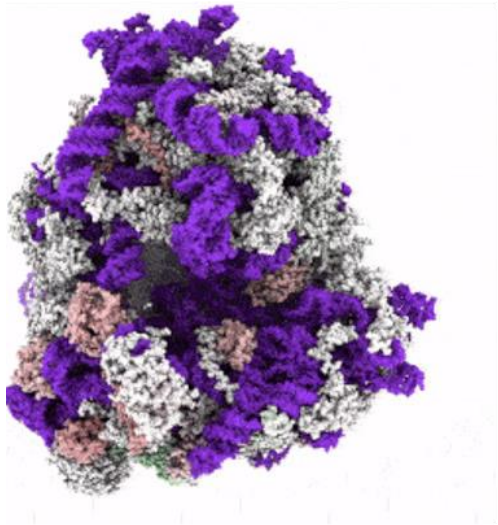
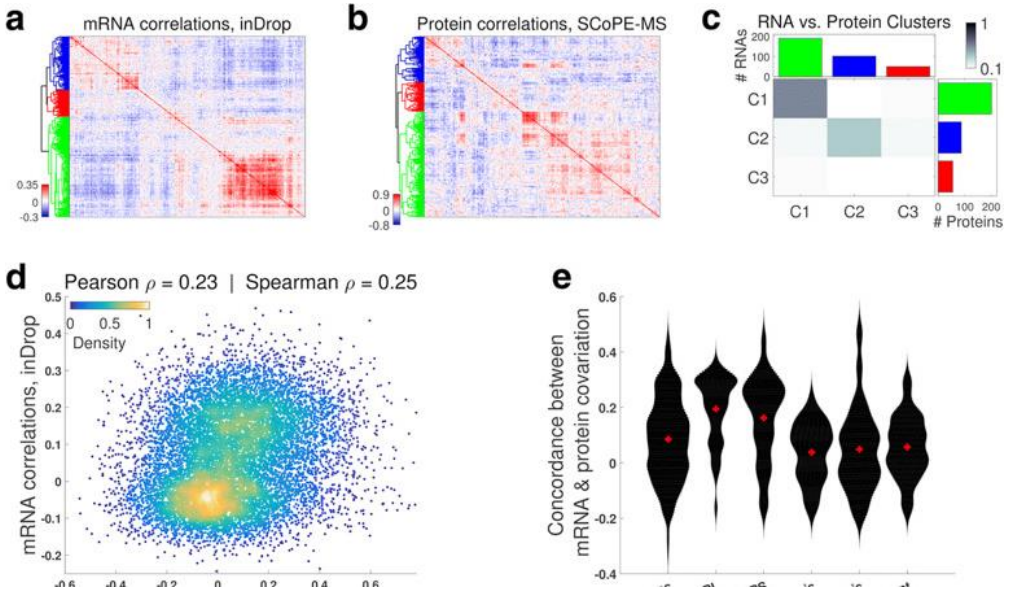
Northeastern University
College of Engineering
Bioengineering

Research Area 3: Molecular, Cell, and Tissue Engineering
Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Rationally engineered directed differentiation, single-cell analysis, ribo- some-mediated translational regulation, proteomics, cell signaling, systems biology





Lab Website: https://slavovlab.net/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/slavov-nikolai/

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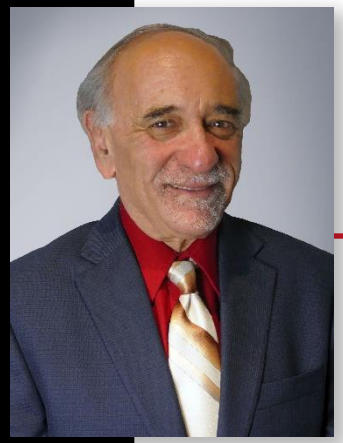


Eduardo Sontag

University Distinguished Professor of Electrical and Computer Engineering & Bioengineering

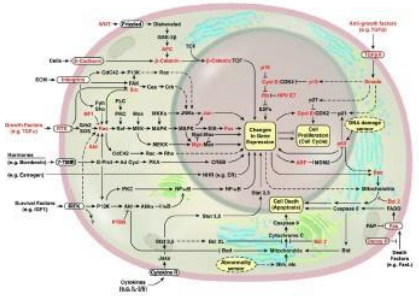
Affiliated Faculty, Chemical Engineering

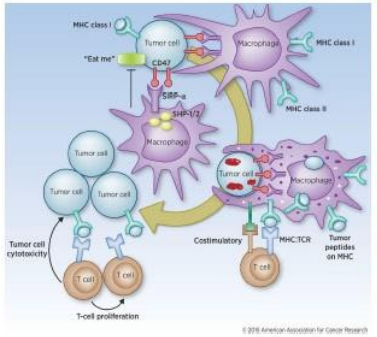
e.sontag@northeastern.edu

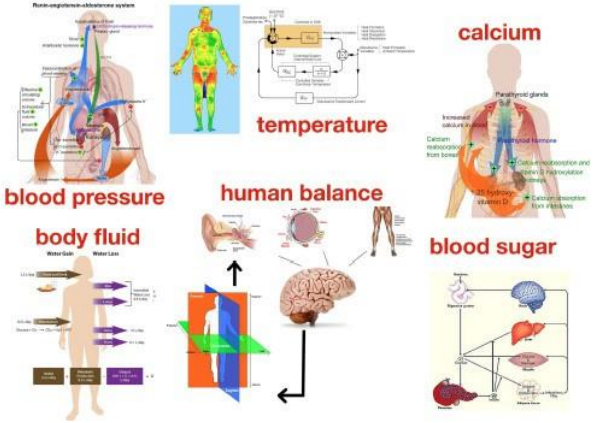
Northeastern University
College of Engineering
Bioengineering

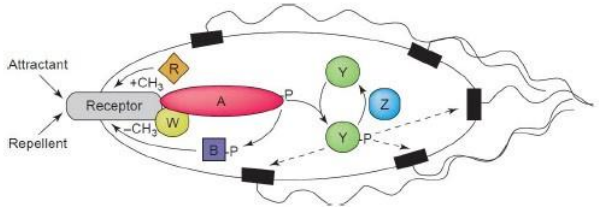
Research Area 4: Systems, Synthetic, and Computational Bioengineering

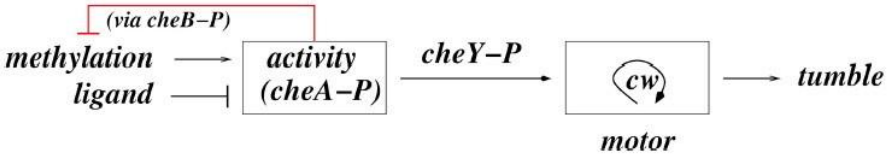
Research Interests: Feedback control theory, systems biology, cancer, and biomedicine











Lab Website: http://www.sontaglab.org/

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/sontag-eduardo/

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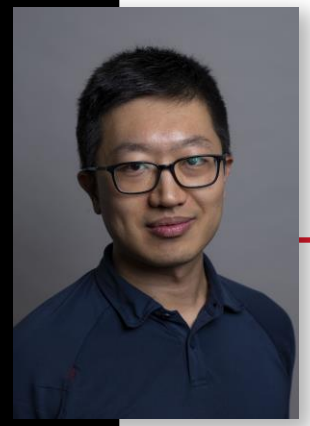

Tao Sun

Assistant Professor of Bioengineering

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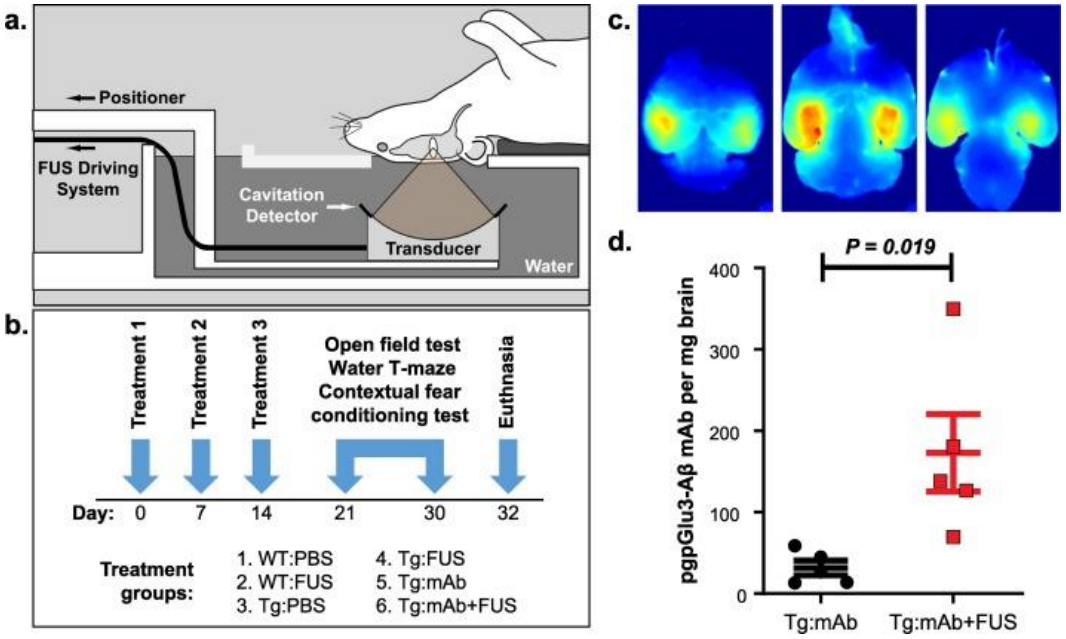
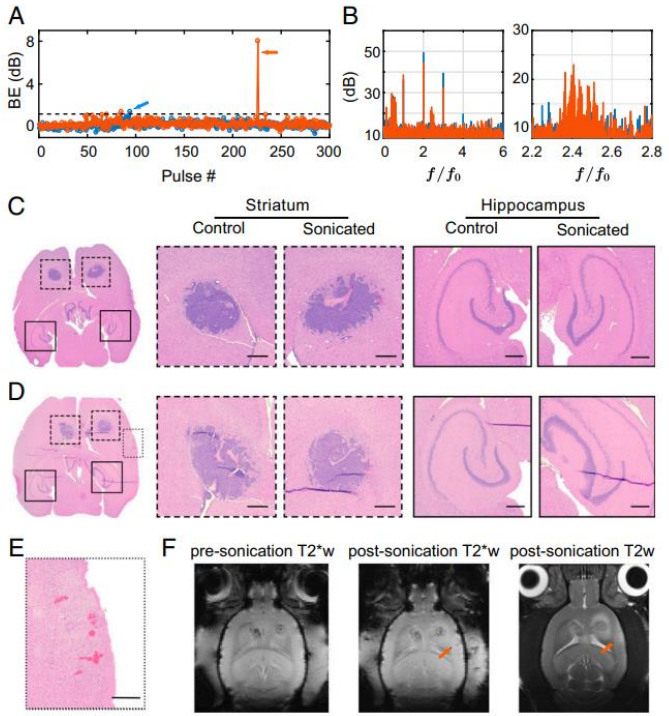
Northeastern University
College of Engineering
Bioengineering

Research Area 1: Biomedical Devices and Bioimaging
Research Area 2: Biomechanics and Mechanobiology
Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: Focused Ultrasound, Ultrasound Imaging, Neuroimaging, Drug Delivery, Immunomodulation and Immunoengineering, Gliomblastoma, Alzheimer's Disease





Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/sun-tao/

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Amir Vahabikashi

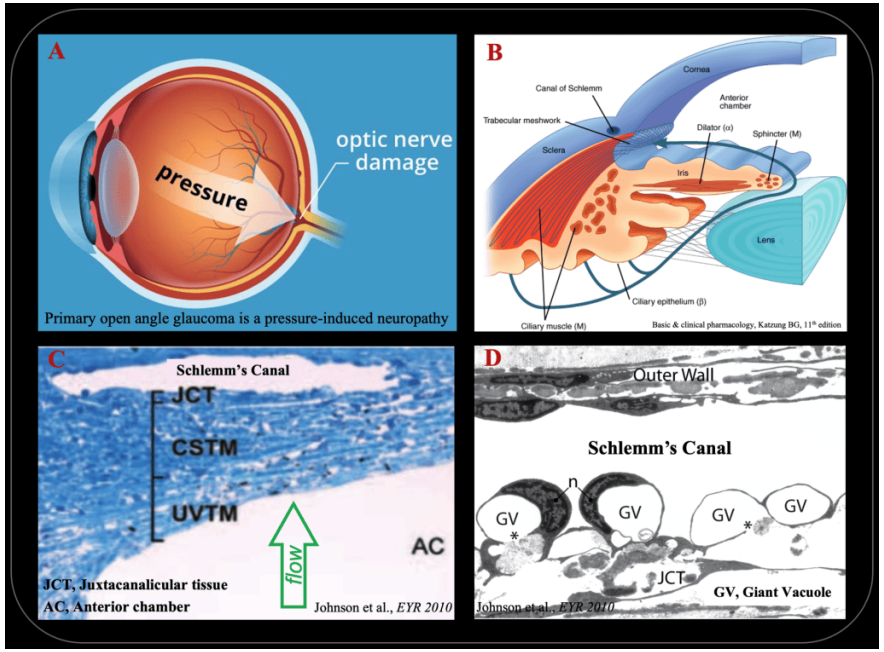
Assistant Professor of Bioengineering

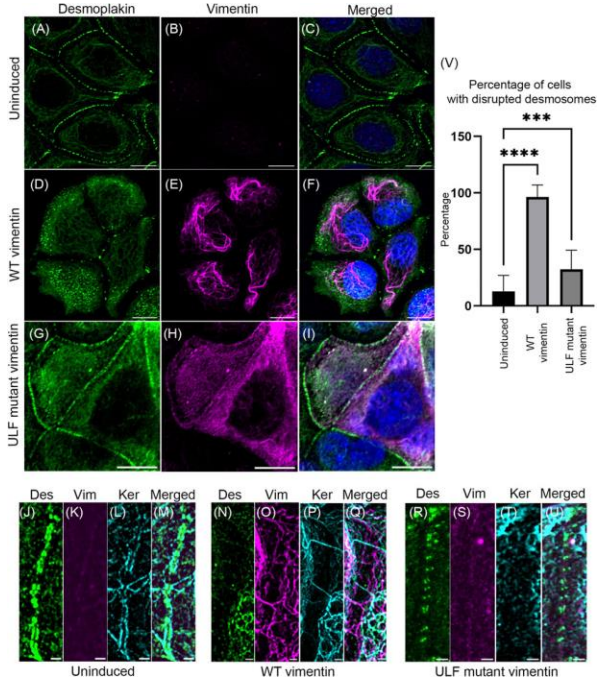
a.vahabikashi@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 1: Biomedical Devices and Bioimaging
Research Area 2: Biomechanics and Mechanobiology

Research Interests: Cell and nucleus mechanobiology, soft bioelectronics for organoid/tissue scale mechanobiology and regenerative engineering, mechanotransduction, implantable bioelectronics





Lab Website: https://vahabikashi-lab.sites.northeastern.edu/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/vahabikashi-amir/

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Kiran Vanaja

Assistant Research Professor of Bioengineering

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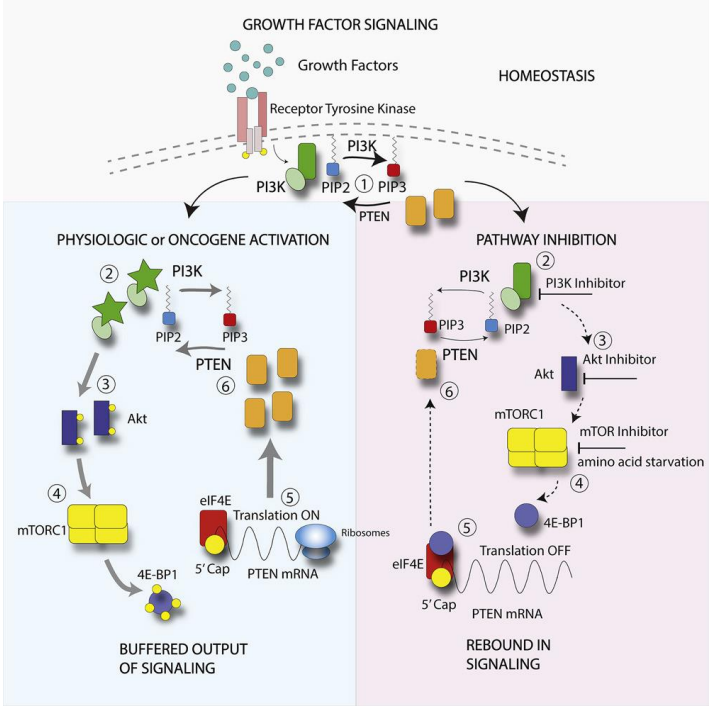
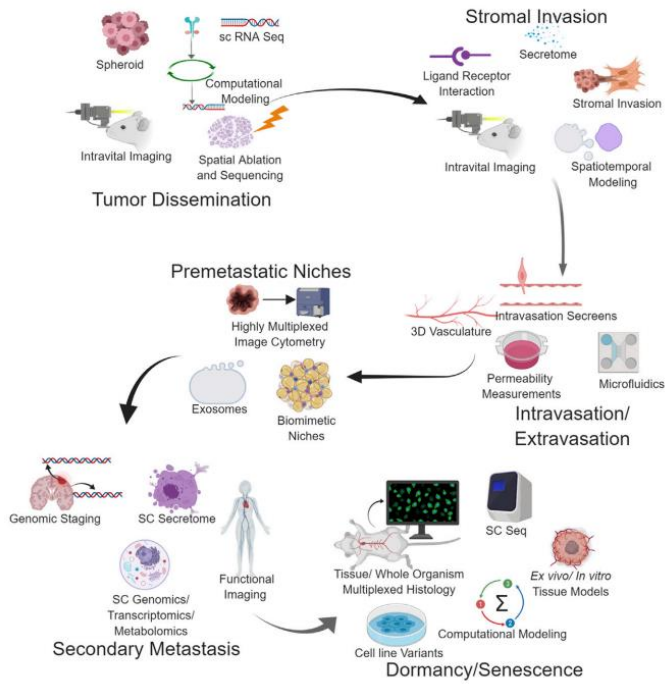
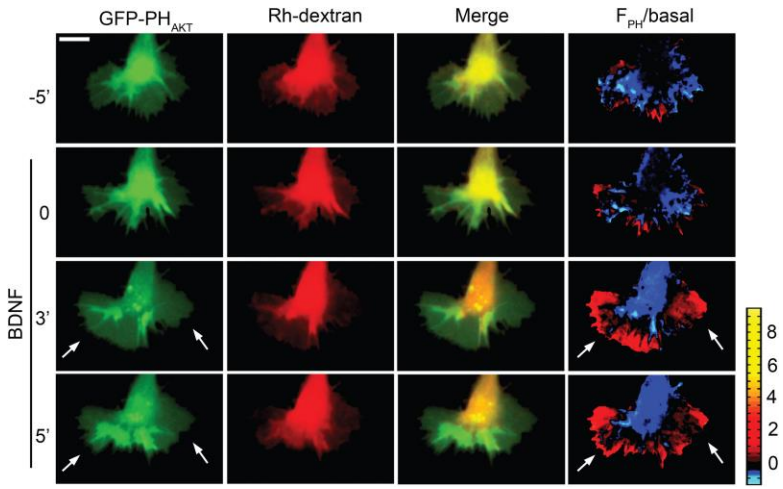
Northeastern University
College of Engineering
Bioengineering

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Systems biology of signaling networks in cancer (and) therapeutics, metastasis and embryonic development







Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/vanaja-kiran/

Lei Wang

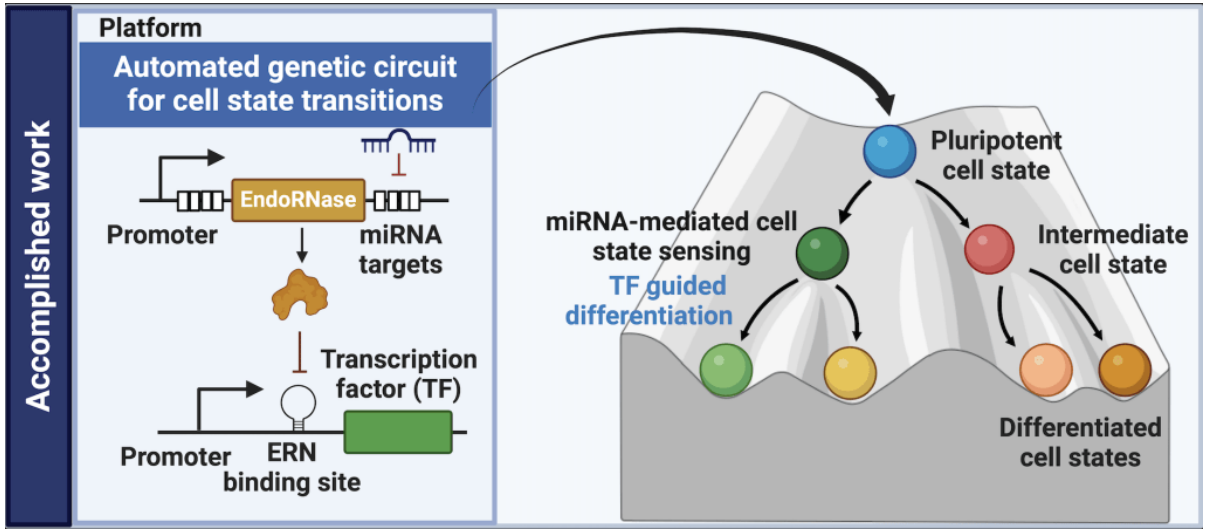
Assistant Professor of Bioengineering & Biology

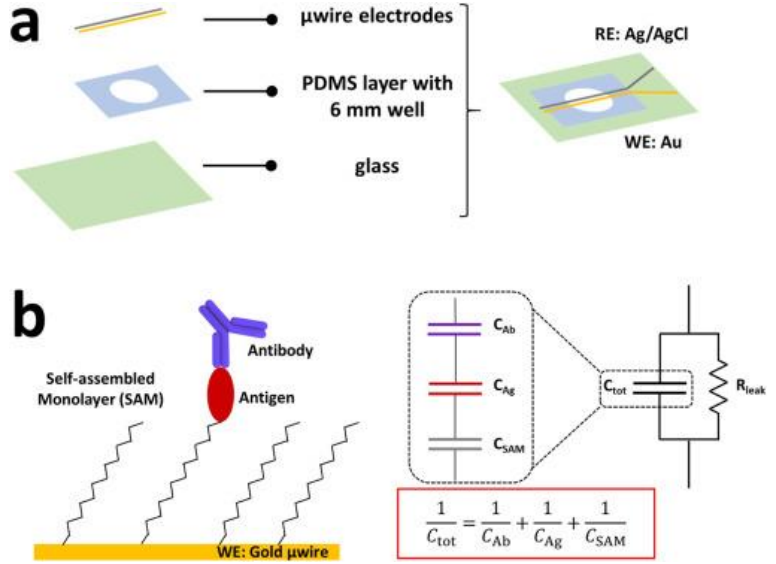
lei1.wang@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Mammalian synthetic biology tools to advance cancer cellular therapy, regenerative medicine, and microfluidic human organ models





Lab Website: https://wang-lab.sites.northeastern.edu/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/wang-lei/

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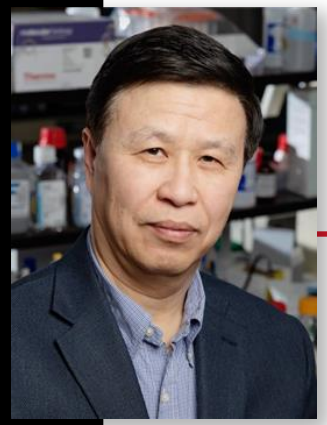


Ning Wang

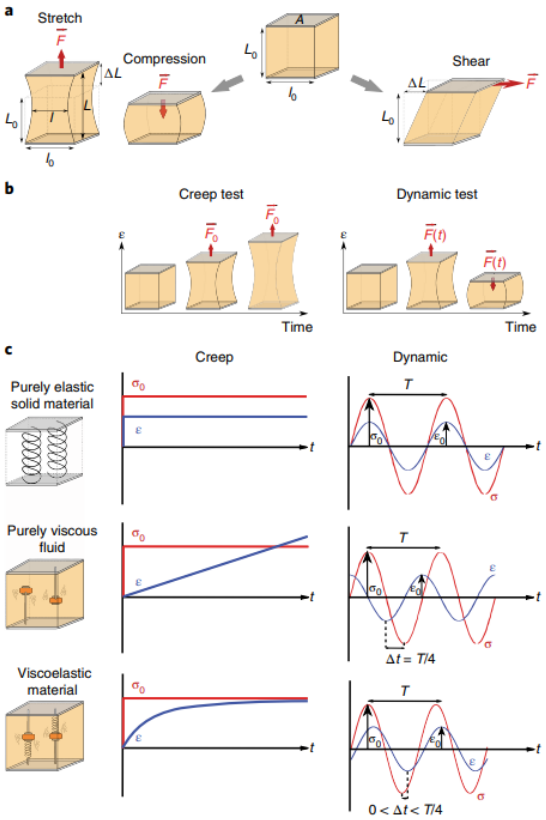
Professor of Bioengineering

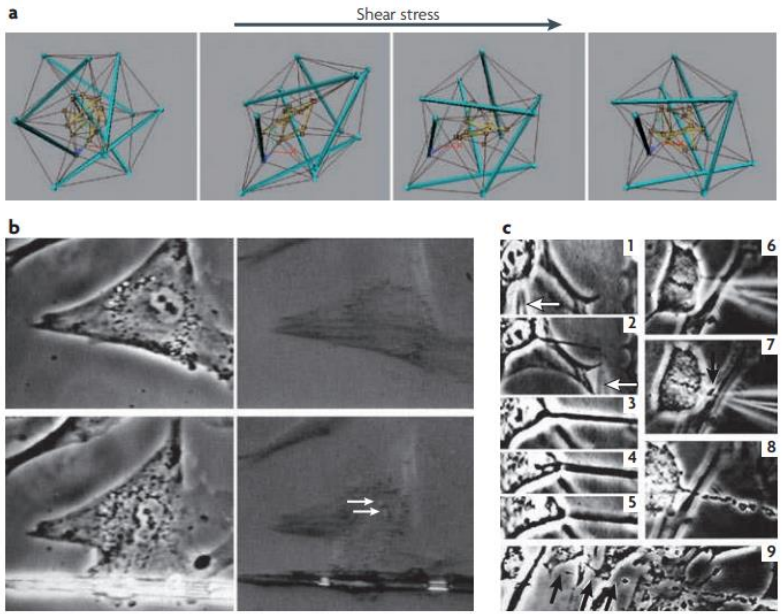
Director of the Institute for Mechanobiology
ni.wang@northeastern.edu

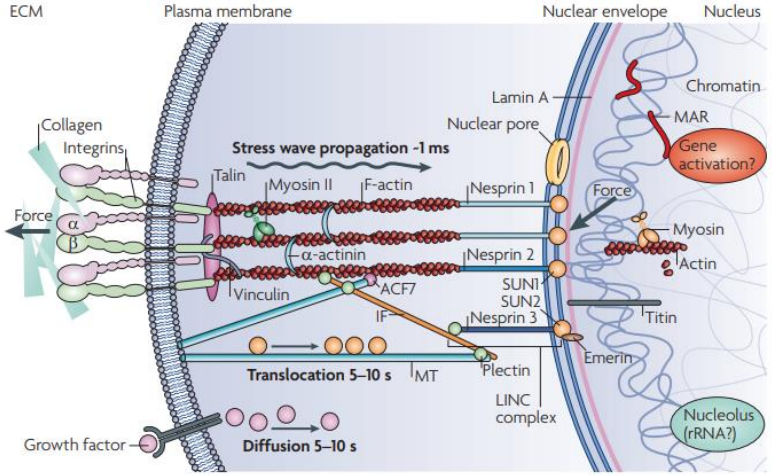
Northeastern University
College of Engineering
Bioengineering

Research Area 2: Biomechanics and Mechanobiology

Research Interests: Cellular and molecular mechanobiology, mechanomedicine, and mechanohealth; cancer cell biology and mechanics; stem cell biology and mechanics; mechanomemory and mechanoresilience, mechanobiotechnologies and their applications to cells, tissues, and organisms







Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/wang-ning/

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Meni Wanunu

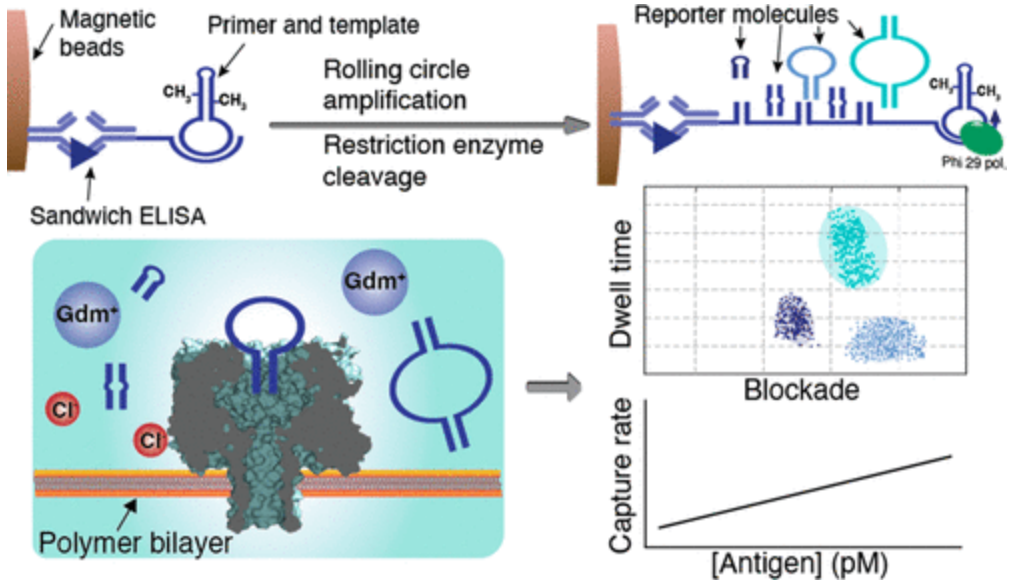
Professor of Physics & Bioengineering

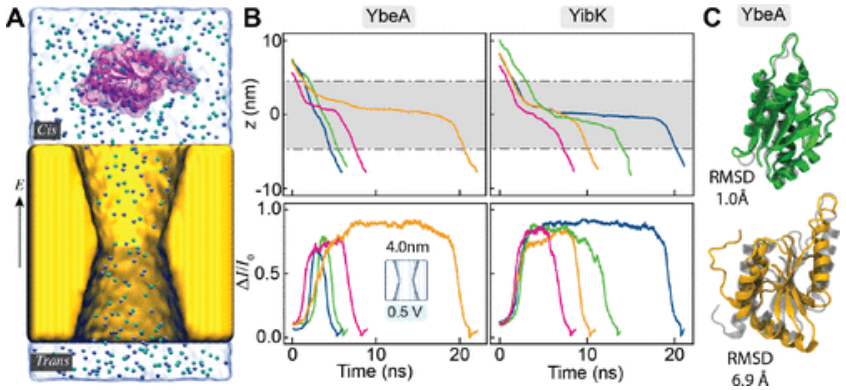
Affiliated Faculty, Chemical Engineering
m.wanunu@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 3: Molecular, Cell, and Tissue Engineering

Research Interests: biomolecules and biomaterials; nanotechnology; single-molecule proteomics;





Lab Website: https://wanunu.sites.northeastern.edu/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/wanunu-meni/

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Jing-Ke Weng

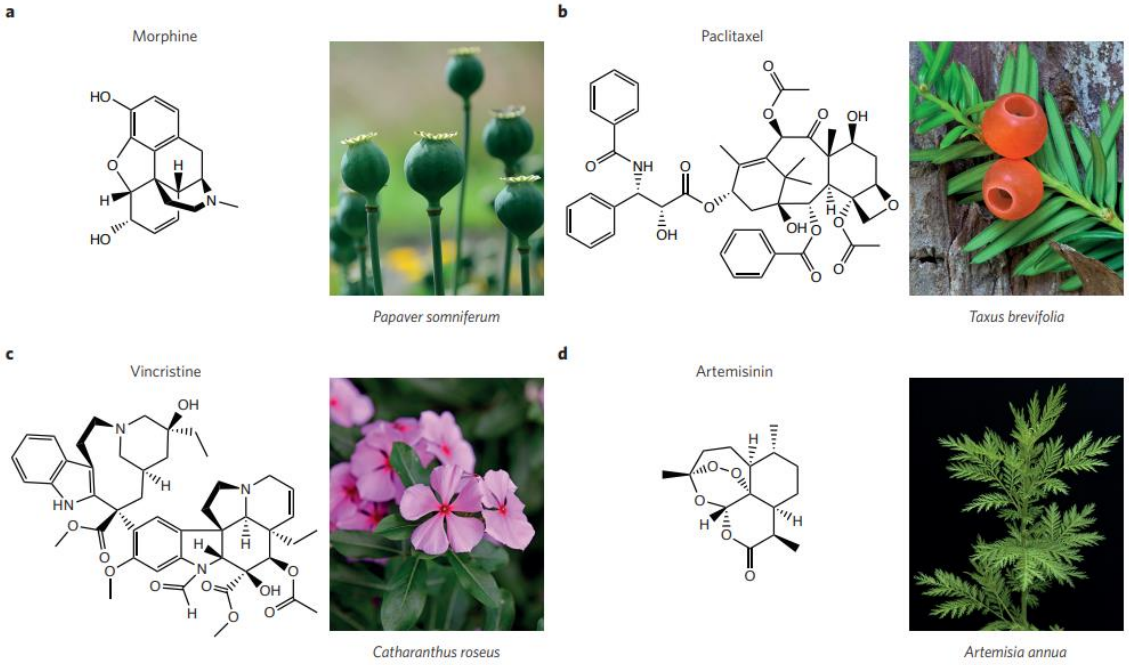
Professor of Chemistry and Chemical Biology & Bioengineering

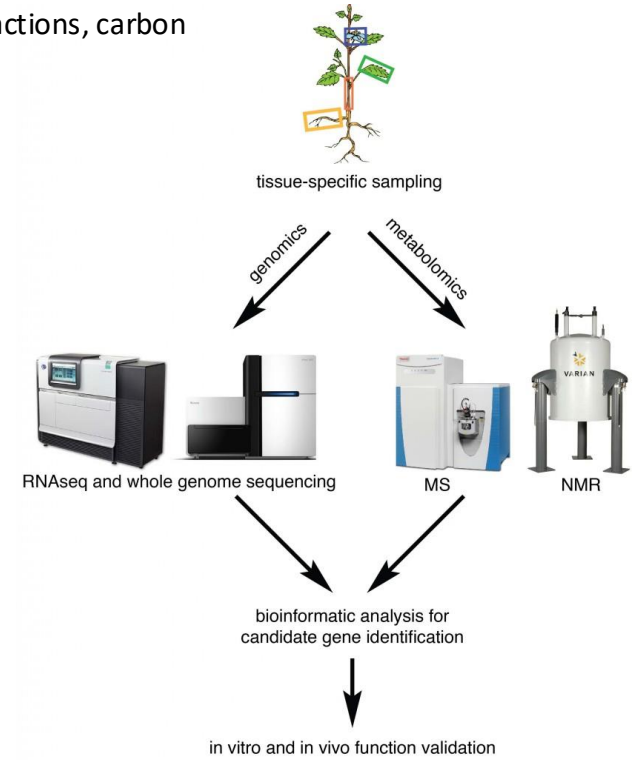
Affiliated Faculty, Chemical Engineering & Director of the Institute for Plant-Human Interface
jingke.weng@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Natural product biochemistry, plant abiotic and biotic interactions, carbon sequestration, agricultural biotechnology, food allergy, drug discovery





Lab Website: https://wenglab.net/
Publications: Google Scholar
Profile: https://coe.northeastern.edu/people/weng-jingke/

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Raimond Winslow

Professor of Bioengineering, Khoury College of Computer Sciences, & Clinical and Rehabilitation Sciences

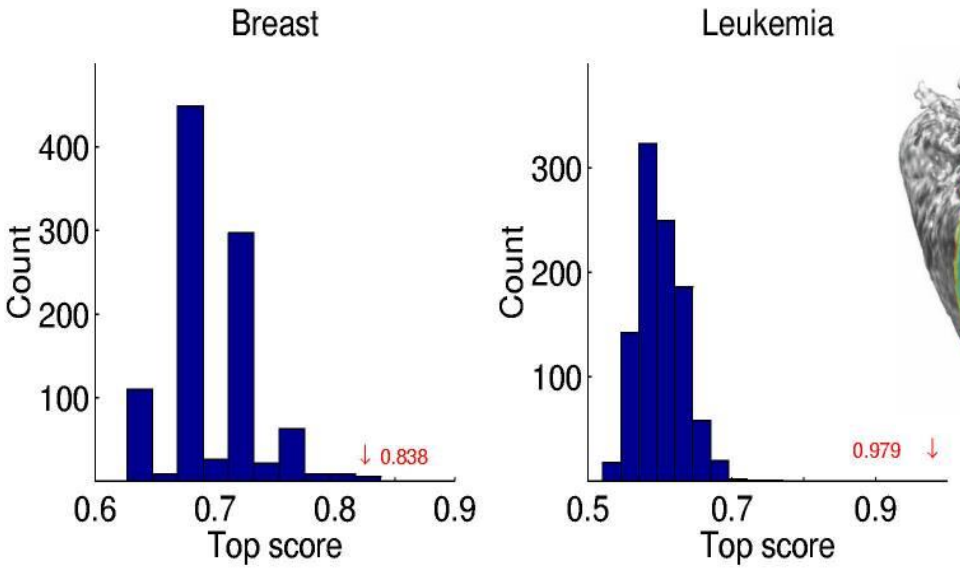
Director of Life Science and Medicine Research, Roux Institute

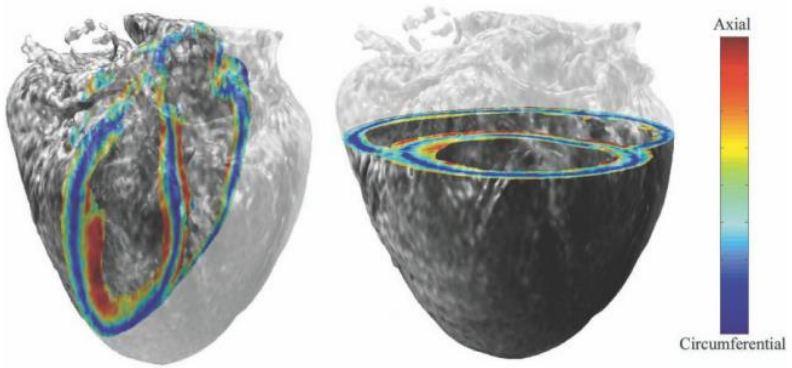
r.winslow@northeastern.edu

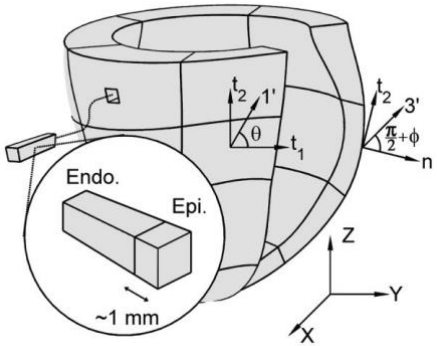
Northeastern University
College of Engineering
Bioengineering

Research Area 4: Systems, Synthetic, and Computational Bioengineering

Research Interests: Computational modeling of the cardiac myocyte to understand the molecular basis of arrhythmias; machine learning in critical care medicine to identify those patients who require urgent care

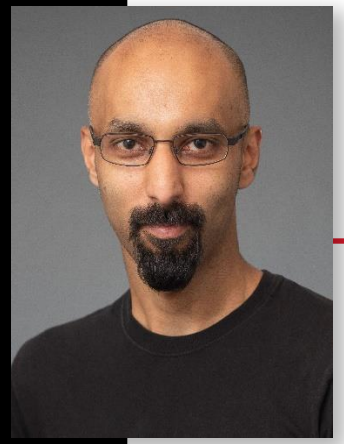






Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/winslow-raimond/



Mohammad Abbas Yaseen

Assistant Professor of Bioengineering

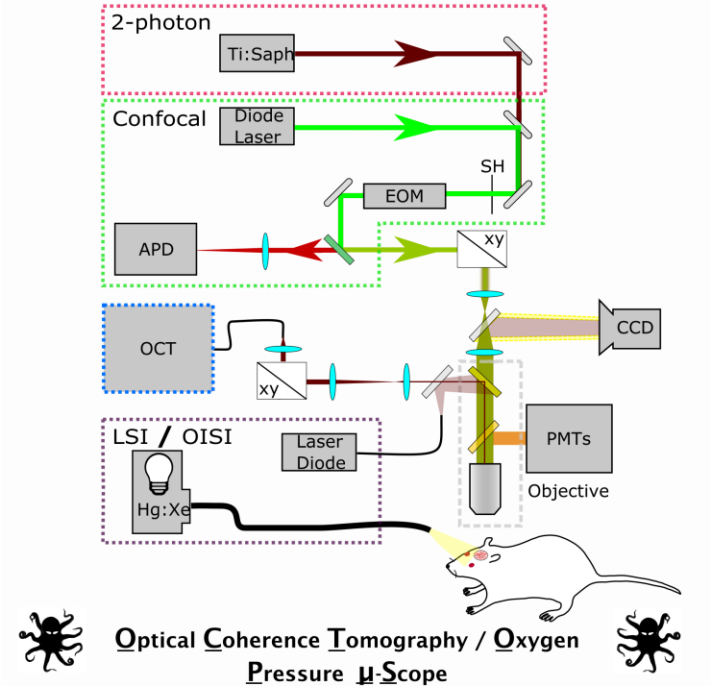
Optical Microscopy and Neuro-Imaging Lab

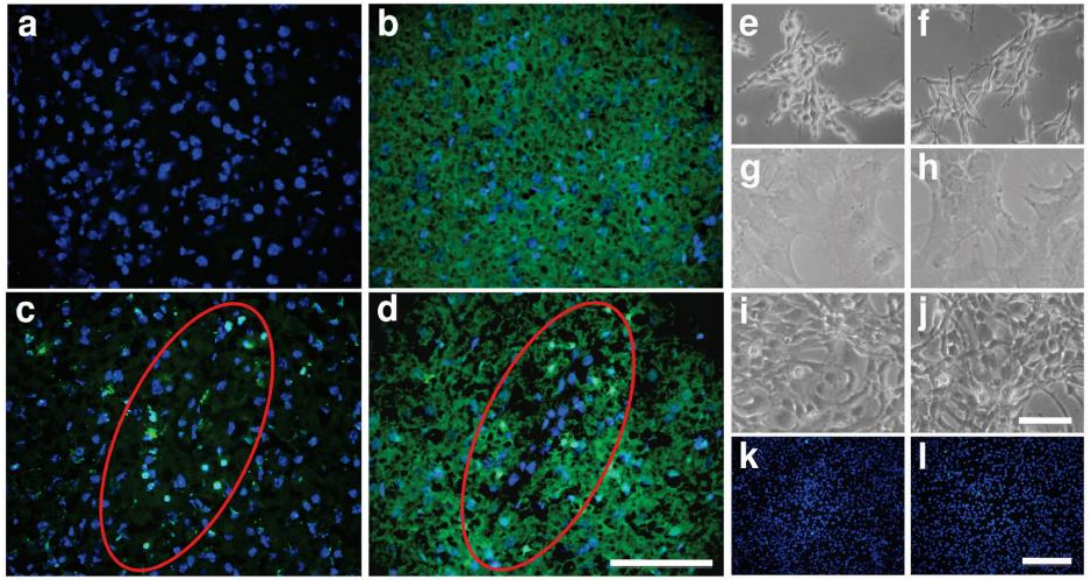
m.yaseen@northeastern.edu

Northeastern University
College of Engineering
Bioengineering

Research Area 1: Biomedical Devices and Bioimaging

Research Interests: Advanced microscopy for minimally invasive, in vivo characterization of brain function; neuroimmune and neurovascular alterations during Alzheimer's Disease progression





Lab Website: https://www.yaseen-omnilab.org/

Publications: Google Scholar

Profile: https://coe.northeastern.edu/people/yaseen-mohammad/

Bioengineering
Overview

Northeastern University
College of Engineering
Bioengineering

- **666** undergraduates, **254** graduate students including **140** Masters, **115** PhD (Fall 2023)

- **75** tenured/tenure-track faculty including affiliated
  - **6** Distinguished Professors
  - **18** Young Investigator Awards
  - **13** Professional Society Fellowships
  - **1** AHA member, **2** AIMBE members

- **180** Co-op employers in Boston area
  - Bio-rad, Boston Scientific, Moderna, Covidien, Genzyme, MIT Lincoln Labs, Novartis, Smith and Nephew, Vention Medical, Wyss Institute for Biologically Inspired Engineering, etc

- ABET accredited

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Bioengineering
Overview

Northeastern University
College of Engineering
Bioengineering

- **$36M** external research awards (2022-2023)

- Recent external funding sources:
  - National Science Foundation
  - National Institutes of Health
  - Paul G. Allen Frontiers Group
  - National Cancer Institute
  - American Heart Association
  - National Institute of Arthritis and Musculoskeletal and Skin Diseases
  - Department of Homeland Security
  - National Institute of Neurological Disorders and Stroke

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