ENGINEERING RESEARCH INTERESTS 2022-2023

BIOMEDICAL ENGINEERING
- Biomaterials, Drug Delivery and Drug Discovery
  Ault, Colvin, Coulombe, Darling, Desai, Hoffman-Kim, Jay, Kofron, Mathiowitz, Morgan, Shukla, Srivastava, Tripathi, Wong, Xu
- Biomedical Optics and Biophotonics
  Lee, Nurmiikko, Toussaint, Xu
- Biomolecular Engineering and Nanomedicine
  Colvin, Dawson, Desai, Hurt, Mathiowitz, Palmore, Shukla, Tripathi
- Biosensors and Bioprocesses
  Ault, Bolton, Colvin, Coulombe, Laiwalla, Lee, Morgan, Palmore, Rose, Rosenstein, Shukla, Tripathi, Wong, Xu
- Mechanobiology and Motion Sciences
  Coulombe, Crisco, Darling, Dawson, Desai, Fleming, Jay, Kesari, Morgan, Srivastava, Toussaint, Wong
- Neuroengineering and Brain-Computer Interfaces
  Borton, Hochberg, Laiwalla, Lee, Nurmiikko, Simeral
- Repair and Regenerative Medicine
  Coulombe, Darling, Dawson, Desai, Fleming, Hoffman-Kim, Kofron, Morgan, Shukla, Srivastava
- Tissue Engineering and Stem Cell Technology
  Coulombe, Darling, Dawson, Desai, Hoffman-Kim, Kofron, Palmore, Shukla, Srivastava

CHEMICAL AND ENVIRONMENTAL ENGINEERING
- Alternative and Sustainable Fuels
  Goldsmith, Kulaots, Palmore, Peterson, Suuberg
- Biochemical Sensing
  Dawson, Palmore, Shukla, Tripathi, Xu
- Biomaterials, Nanomaterials, and Composite Materials
  Abriola, Colvin, Coulombe, Dawson, Desai, Hurt, Kesari, Padture, Pennell, Sheldon, Shukla, Tripathi, Wong, Xu
- Carbon and Graphene-Based Materials
  Hurt, Kulaots, Padture, Sheldon, Suuberg, Xu
- Catalysis and Reaction Kinetics
  Goldsmith, Kulaots, Kumar, Manz, Peterson, Suuberg
- Computational Chemistry and Atomistic Modeling
  Goldsmith, Peterson, Qi, van de Walle
- Electrochemical Energy Conversion
  Palmore, Peterson, Qi, Sheldon
- Environmental Processes and Remediation
  Abriola, Colvin, Coulombe, Hurt, Kulaots, Manz, Pennell, Suuberg
- Environmental Exposure and Human Health
  Abriola, Colvin, Coulombe, Hurt, Manz, Pennell, Suuberg, Wong
- Fluids and Thermal Sciences
  Biomembranes, Biophysics, Biocatalysis, and Bioinspired Robotics
  Breuer, Dawson, Kesari, Powers, Rodriguez, Wilhelmsen, Zenit
- Fluid-Structure Interaction
  Ault, Bazilevs, Breuer, Harris, Karna, Stavola, Powers, Rodriguez, Wilhelmsen, Zenit
- Interfacial Dynamics and Surface Science
  Abriola, Desai, Harris, Kesari, Powers, Xu, Zenit
- Micro and Nano-scale Mechanics and Dynamics
  Ault, Breuer, Dawson, Harris, Powers, Toussaint
- Soft Matter, Complex Fluids, and Colloidal Sciences
  Ault, Dawson, Desai, Harris, Henann, Hurt, Karna, Stavola, Kesari, Powers, Rodriguez, Shukla, Wong, Xu, Zenit

ELECTRICAL AND COMPUTER ENGINEERING
- Computer Architecture and Embedded Systems
  Patterson, Reda, Rosenstein, Silverman, Simeral, Taubin
- Computer Vision, Image and Medical Image Processing
  Felzenszwalb, Kimia, Reda, Taubin, Toussaint, Zia
- Digital Fabrication
  Gonshar, Taubin
- Electronic Materials and Devices
  Beresford, Laiwalla, Larson, Mittleman, Nurmiikko, Pacifici, Padture, Paine, Qi, X, Zaslavsky, Zia
- Energy-Efficient and Thermal-Aware Computing Systems
  Reda, Rosenstein
  S. Kim, Larson, Pacifici, Padture, Reda, Xu, Zaslavsky, Zia
- Integrated Circuit Design
  Laiwalla, Larson, Patterson, Reda, Rosenstein
- Mixed-Signal Electronics and Analog/Digital Design
  Larson, Patterson, Reda, Rosenstein, Silverman, Zaslavsky
- Molecular Informatics
  Reda, Rose, Rosenstein
- Nanophotonics, Plasmonics and THz
  Mittleman, Nurmiikko, Pacifici, Toussaint, Xu, Zia
- Neuroengineering and Brain-Computer Interfaces
  Borton, Hochberg, Laiwalla, Larson, Mittleman, Nurmikko, Pacifici, Padture, Paine, Qi, X, Zaslavsky, Zia
- Sensors and Signal Processing
  Ayanian, Gray, Kimia, Reda, Rosen, Rosenstein
- Sensors and Signal Processing
  Ayanian, Gray, Kimia, Reda, Rosen, Rosenstein
- Sensor Networks, Smart Cameras, Networked Systems, and Signal Processing
  Ayanian, Gray, Kimia, Reda, Rosen, Rosenstein

MATERIALS SCIENCE
- Biomaterials
  Breuer, Coulombe, Dawson, Desai, Palmore, Shukla, Srivastava, Wong, Xu, Zenit
- Electronic Materials
  Careta, Chason, S. Kim, Kingon, Padture, Paine, Qi, Sheldon, van de Walle, Xu
- Energy Materials
  Padture, Palmore, Paine, Peterson, Qi, Sheldon, Srivastava, van de Walle, Zia
- High Temperature Materials
  Hurt, Kumar, Padture, Qi, Sheldon, van de Walle, Xu
- Thin Films
  Careta, Chason, Desai, S. Kim, Pacifici, Padture, Paine, Qi, Sheldon, Shukla, Xu

SOLID MECHANICS
- Biomaterials, Biomechanics, and Biophysics
  Bazilevs, Blume, Breuer, Clifton, Coulombe, Dawson, Desai, Kesari, Powers, Rodriguez, Srivastava, Zenit
- Computational Mechanics
  Abriola, Bazilevs, Bessa, Henann, Kesari, Rodriguez
- Mechanics of Materials for Energy Storage
  Guduru, K.S. Kim, Qi, Padture, Sheldon, Srivastava
- Mechanics of Soft Materials (e.g. gels, polymers, granular matter)
  Ault, Blume, Clifton, Harris, Henann, Kesari, K.S. Kim, Powers, Rodriguez, Srivastava, Zenit
- Mechanics of Thin Films and Surface Engineering
  Careta, Chason, Guduru, K.S. Kim, Kumar, Padture, Peterson, Qi, Sheldon, van de Walle
- Nano and Micro-mechanics
  Bessa, Breuer, Chason, Clifton, Kesari, K.S. Kim, Padture, Qi, Sheldon, Toussaint, Xu
- Structural Materials
  Bazilevs, Bessa, Clifton, Guduru, Kesari, K.S. Kim, Kumar, Padture, Sheldon, Srivastava, van de Walle, Xu

INNOVATION MGMT. AND DESIGN ENGINEERING
- Appropriate Technology
  Altringer, Breuer, Bull, Gonshar, Hazeltine, Kofron
- Engineering Education
  Altringer, Gray, Kofron
- Entrepreneurial Networks and Early Stage Enterprise Growth
  Chaltas, Desai, Donohue, Harry, Kingon, Larson, McHugh, Ozkazanc-Pan, Suuberg, Warshay
- Social Entrepreneurship, Inclusion, and Innovation
  Bull, Gonshar, Hazeltine, Kingon, Kofron