



BROWN

School of Engineering

Research Interests 2020-2021

BIOMEDICAL ENGINEERING

- ✂ **Biomaterials, Drug Delivery and Drug Discovery**
Ault, Colvin, Coulombe, Darling, Hoffman-Kim, Mathiowitz, Morgan, Shukla, Srivastava, Tripathi, Wong, Xu
- ✂ **Biomedical Optics and Biophotonics**
Lee, Nurmikko, Toussaint, Xu
- ✂ **Biomolecular Engineering and Nanomedicine**
Colvin, Dawson, Hurt, Mathiowitz, Palmore, Shukla, Tripathi
- ✂ **Biosensors and Bioplatfroms**
Ault, Borton, Colvin, Coulombe, Lee, Morgan, Palmore, Rose, Rosenstein, Shukla, Tripathi, Wong, Xu
- ✂ **Mechanobiology and Motion Sciences**
Coulombe, Crisco, Darling, Dawson, Fleming, Jay, Morgan, Srivastava, Toussaint, Wong
- ✂ **Neuroengineering and Brain Computer Interfaces**
Borton, Hochberg, Lee, Nurmikko, Simeral
- ✂ **Repair and Regenerative Medicine**
Coulombe, Darling, Dawson, Fleming, Hoffman-Kim, Morgan, Shukla
- ✂ **Tissue Engineering and Stem Cell Technology**
Coulombe, Darling, Dawson, Hoffman-Kim, 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, Hurt, 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, Peterson, Suuberg
- ✂ **Computational Chemistry and Atomistic Modeling**
Goldsmith, Peterson, Qi, van de Walle
- ✂ **Electrochemical Energy Conversion**
Bower, Palmore, Peterson, Qi, Sheldon, Yue, Zhou
- ✂ **Environmental Processes and Remediation**
Abriola, Colvin, Dawson, Goldsmith, Hurt, Kulaots, Pennell, Suuberg
- ✂ **Environmental Exposure and Human Health**
Abriola, Colvin, Coulombe, Hurt, Pennell, Suuberg, Wong

ELECTRICAL AND COMPUTER ENGINEERING

- ✂ **Computer Architecture and Embedded Systems**
Bahar, Patterson, Reda, Rosenstein, Silverman, Taubin
- ✂ **Computer Vision, Image and Medical Image Processing**
Bahar, Felzenszwalb, Kimia, Reda, Taubin, Toussaint, Zia
- ✂ **Electronic Materials and Devices**
Beresford, Larson, Mittleman, Nurmikko, Pacifici, Padture, Paine, Qi, Xu, Zaslavsky, Zhou, Zia
- ✂ **Energy-Efficient and Thermal-Aware Computing Systems**
Bahar, Reda, Rosenstein
- ✂ **Energy Science (inc. Energy-Efficient Computing, Energy-Harvesting & Photovoltaics)**
Bahar, S. Kim, Larson, Pacifici, Padture, Reda, Xu, Zaslavsky, Zhou, Zia
- ✂ **Integrated Circuit Design**
Bahar, Larson, Patterson, Reda, Rosenstein
- ✂ **Mixed-Signal Electronics and Analog/Digital Design**
Bahar, Larson, Patterson, Reda, Rosenstein, Silverman, Zaslavsky
- ✂ **Molecular Informatics**
Reda, Rose, Rosenstein
- ✂ **Nanophotonics, Plasmonics and THz**
Mittleman, Nurmikko, Pacifici, Toussaint, Xu, Zia
- ✂ **Neuroengineering and Brain-Computer Interfaces**
Borton, Hochberg, Larson, Nurmikko, Simeral
- ✂ **Robotics and Industrial Automation**
Bahar, Kimia, Silverman, Taubin
- ✂ **Sensor Networks, Smart Cameras, Networked Systems, and Signal Processing**
Kimia, Reda, Rose, Rosenstein, Silverman, Taubin, Xu
- ✂ **Wireless Communication and Power Transmission**
Borton, Larson, Mittleman, Nurmikko, Rose

FLUIDS AND THERMAL SCIENCES

- ✂ **Biomechanics, Biophysics, and Biocomotion**
Breuer, Dawson, Powers, Zenit
- ✂ **Fluid-Structure Interaction**
Ault, Bazilevs, Breuer, Harris, Powers, Zenit
- ✂ **Interfacial Dynamics and Surface Science**
Abriola, Breuer, Harris, 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, Harris, Henann, Hurt, Powers, Shukla, Wong, Xu, Zenit

MATERIALS SCIENCE

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

SOLID MECHANICS

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

TECHNOLOGY INNOVATION & ENTREPRENEURSHIP

- ✂ **Appropriate Technology**
Breuer, Bull, Gonsher, Hazeltine
- ✂ **Entrepreneurial Networks and Environment**
Chaltas, Donohue, Harry, Kingon, McHugh, Ozkazanc-Pan, Suuberg, Warshay
- ✂ **Innovation Management and Early Stage Enterprise Growth**
Chaltas, Donohue, Harry, Kingon, Larson, McHugh, Ozkazanc-Pan, Suuberg, Warshay, Xu
- ✂ **Social Entrepreneurship**
Bull, Gonsher, Hazeltine, Kingon, Ozkazanc-Pan