MECHANICAL ENGINEERING (GRADUATE FIELD)

Program Website (https://www.engineering.cornell.edu/mae/)

Field Description

The program emphasizes basic mechanical sciences to prepare students for the diversity found at the frontiers of research and industrial development. The faculty is particularly strong and active in biomechanical engineering, fluid dynamics, turbulence, combustion, thermal systems engineering, multiphase flows, energy and power systems, transport processes in microgravity, mechanical systems and design, control and robotics, dynamics and control of space structures, mechanics of materials and materials processing, materials microgravity sciences and computational mechanics.

The Ph.D. programs provide advanced levels of training suitable for students pursuing careers in research and development, education, or advanced engineering analysis and design. Applicants may apply for the Ph.D. program directly from a bachelor's degree. Doctoral degree candidates must take a qualifying examination in addition to the examinations required by the Graduate School. Teaching experience for two semesters, normally satisfied by a teaching assistantship, is required of Ph.D. students.

Our master of science (M.S.) program in mechanical engineering provides classroom training and experience with research methodology at one of the premier research universities in the world. Our graduates find that their Cornell training and the resulting M.S. degree prepares them to succeed in industry, government, and academia. Please note there is no financial support available to students in this program—it is self-paid by the student.

Data and Statistics

- Research Master's Program Statistics (https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/research-masters-program-statistics/?SelectGradField=33)
- Doctoral Program Statistics (https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/doctoral-program-statistics/?SelectGradField=33)

Field Manual

- Manual (https://blogs.cornell.edu/maeassocdirector/)

Degree Programs

- Mechanical Engineering (MS) (https://catalog.cornell.edu/programs/mechanical-engineering-ms/)
- Mechanical Engineering (PhD) (https://catalog.cornell.edu/programs/mechanical-engineering-phd/)
- Robotics (PhD) (https://catalog.cornell.edu/programs/robotics-phd/)

Concentrations by Subject

Mechanical Engineering

- biomedical mechanics
- dynamics and control
- energy and sustainability
- fluid dynamics
- micro- and nanoscale engineering
- solid mechanics and materials
- thermal science

Robotics

- robotics

Faculty

Steven Adie (http://www.bme.cornell.edu/faculty-directory/steven-graham-adie)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; dynamics and control
- **Research Interests:** Optical imaging science and technology, Biomechanical cell-matrix and cell-cell interactions

John David Albertson (http://www.cee.cornell.edu/faculty-directory/john-d-albertson)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering* fluid dynamics; thermal science
- **Research Interests:** the development of a comprehensive understanding of the exchange rates of mass (e.g. water and C02), energy, and momentum between the land and atmosphere

Nelly Andarawis-Puri (http://www.engineering.cornell.edu/faculty-directory/nelly-andarawis-puri)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics
- **Research Interests:** the structural and regulatory function of the tendon ECM

James Francis Antaki (http://www.bme.cornell.edu/faculty-directory/james-francis-antaki)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics

Chloe Fanny Arson (http://www.engineering.cornell.edu/faculty-directory/chloe-arson)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; micro- and nanoscale engineering; solid mechanics and materials
- **Research Interests:** computational mechanics, micromechanics, multi-scale modeling, fracture mechanics, mechanics and physics of porous media, geomechanics of subsurface energy infrastructure, discovery enhanced by Artificial Intelligence, field variable reconstruction by deep learning

C. Thomas Avedisian (http://www.mae.cornell.edu/faculty-directory/c-thomas-avedisian)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: fluid dynamics; thermal science
- **Research Interests:** heat transfer; fluid mechanics; combustion

Shefford P Baker (http://www.mse.cornell.edu/faculty-directory/shefford-p-baker)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; micro- and nanoscale engineering; solid mechanics and materials
- **Research Interests:** mechanical behavior of materials for structural, nano-scale, and biological applications

Rebecca Jane Barthelmie (http://www.mae.cornell.edu/faculty-directory/rebecca-j-barthelmie)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; thermal science
- **Research Interests:** Wind energy resources and wind turbine wakes within and downwind of large wind farms both on- and offshore

Nicole Ann Benedek (https://www.engineering.cornell.edu/people/nicole-a-benedek/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: solid mechanics and materials
- **Research Interests:** computational/theoretical materials science, materials physics and chemistry, functional materials

Gregory Paul Bewley (http://www.mae.cornell.edu/faculty-directory/gregory-paul-bewley)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: fluid dynamics; thermal science
- **Research Interests:** turbulence, both its intrinsic properties and its role in various environmental settings

Tapomayukh Bhattacharjee (http://www.tapomayukh.com/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** Assistive Robotics, Human-Robot Interaction, Robot Manipulation, Haptic Perception

Anastasia Sergeyevna Bizyaeva (http://www.mae.cornell.edu/faculty-directory/anastasia-bizyaeva)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** Autonomous systems, control, collective behavior, complex systems/network science and computation, nonlinear dynamical systems, biological and artificial swarm intelligence, data-driven modeling

Lawrence Bonassar (http://www.bme.cornell.edu/faculty-directory/lawrence-bonassar)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; solid mechanics and materials
- **Research Interests:** generation and characterization of muscoloskeletal tissues; mechanical regulation of cartilage

Nikolaos Bouklas (https://www.engineering.cornell.edu/people/nikolaos-bouklas/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: solid mechanics and materials
- **Research Interests:** theoretical and computational solid mechanics

Jonathan T. Butcher (http://www.bme.cornell.edu/faculty-directory/jonathan-t-butcher)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; dynamics and control; fluid dynamics; micro- and nanoscale engineering; solid mechanics and materials; thermal science
- **Research Interests:** biomechanics; tissue engineering; biomaterials

Mark Campbell (http://www.engineering.cornell.edu/faculty-directory/mark-campbell)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** space systems; estimation and control; autonomy in aerospace systems; controlled structures

Tiffany Y Cheng (https://aap.cornell.edu/people/tiffany-cheng/)

- **Campus**: Ithaca
- **Concentrations**: *Mechanical Engineering*: energy and sustainability; micro- and nanoscale engineering; solid mechanics and materials
- **Research Interests**: material programming, architected materials, additive manufacturing (4D-printing), computational fabrication, construction robotics, bioinspired structures, biobased and responsive materials

Itai Cohen (http://physics.cornell.edu/itai-cohen)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; dynamics and control; solid mechanics and materials
- **Research Interests:** colloidal suspensions; biological tissues

Edwin Alfred Cowen (https://www.engineering.cornell.edu/people/edwin-todd-cowen/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: fluid dynamics
- **Research Interests:** environmental fluid mechanics

Preston Davis Culbertson (http://www.cs.cornell.edu/people/preston-culbertson)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering:* dynamics and control; *Robotics:* robotics

- **Research Interests:** robotics, autonomous systems, robust and adaptive control, robot learning

Fani Derveni (http://www.engineering.cornell.edu/people/fani-derveni/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering:* energy and sustainability; micro- and nanoscale engineering; solid mechanics and materials
- **Research Interests:** Engineering mechanics, Thin-walled structures, Architected materials, Sustainable engineered materials, Structural dynamics, Structural stability

Olivier Desjardins (http://www.mae.cornell.edu/mae)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; thermal science
- **Research Interests:** Computational Fluid Dynamics

Peter J. Diamessis (http://www.cee.cornell.edu/faculty-directory/pete-j-diamessis)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: fluid dynamics
- **Research Interests:** environmental fluid mechanics; numerical simulation of stratified flows; modeling turbulence; interaction of hydrodynamics and biology in natural ecosystems

Eve Donnelly (http://www.engineering.cornell.edu/faculty-directory/eve-lorraine-donnelly)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; solid mechanics and materials
- **Research Interests:** microstructure-property relationships in bone and tendon; disease and treatment; induced changes in the properties of bone mineral and collagen; connections between fundamental properties and clinical impact

David Erickson (http://www.mae.cornell.edu/faculty-directory/david-erickson)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; micro- and nanoscale engineering; thermal science
- **Research Interests:** micro/nanofluidics; optical fluidics; labs-on-a-chip; nanoscale integration; single nuckotide polymorphisms

Gregory Joseph Falco (http://www.engineering.cornell.edu/faculty-directory/gregory-falco)

- Campus: Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; energy and sustainability
- **Research Interests:** Satellite Systems, Artificial Intelligence, Security, Statistics and Machine Learning, Robotics and Autonomy, Systems and Networking, Space Science and Engineering, Infrastructure Systems, Remote Sensing, Signal and Image Processing, Information Theory and Communications, Optical Physics, Cloud and Distributed Computing

Silvia Ferrari (http://www.engineering.cornell.edu/faculty-directory/silvia-ferrari)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** Design and analysis of methods and algorithms for computational intelligence and sensorimotor learning and control

Jillian L Goldfarb (https://www.duffield.cornell.edu/people/jillian-goldfarb/)

- **Campus**: Ithaca
- **Concentrations**: *Mechanical Engineering*: energy and sustainability; thermal science
- **Research Interests**: Conversion of biomass to biofuels and sustainable carbon materials; Design of thermal reactors and instrumentation; Reactive transport in porous media; Fuel science; Systems modeling

Keith E. Green (http://www.keithevangreen.com/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** architecture robotics focusing on making physical surroundings interactive and adaptive

Tobias Hanrath (http://www.cheme.cornell.edu/faculty-directory/tobias-hanrath)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; micro- and nanoscale engineering
- **Research Interests:** optoelectronic properties of semiconductor nanocrystals; solar energy conversion and energy storage devices

Mahdi Hasani (http://www.engineering.cornell.edu/faculty-directory/mahdi-hasani)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; energy and sustainability; micro- and nanoscale engineering; solid mechanics and materials
- **Research Interests:** Polymeric biomaterials, Drug delivery systems, Biofabrications, Nanobiotechnology, Nanocomposites, Microfluidics, Fuel cells

Mostafa Hassani (http://www.mae.cornell.edu/mae)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: solid mechanics and materials
- **Research Interests:** using experiments, analytical theory and simulations to understand the structure-property relation in structure materials with particular emphasis on extreme conditions

Elizabeth Farrell Helbling (http://www.ece.cornell.edu/faculty-directory/elizabeth-farrell-helbling)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; fluid dynamics; micro- and nanoscale engineering; *Robotics*: robotics

- **Research Interests:** Robotics, Autonomy, cm-scale Design and Manufacturing

Guy Hoffman (http://infosci.cornell.edu/content/hoffman)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** human-robot interaction

Sarah Hormozi (http://hormozi.cbe.cornell.edu/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: fluid dynamics
- **Research Interests:** Fluid mechanics, rheology, and microstructure of complex slurries; i.e., suspensions of non-Brownian particles in complex fluids

Chung-Yuen Hui (https://www.engineering.cornell.edu/people/herbert-hui/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: solid mechanics and materials
- **Research Interests:** fracture mechanics; mechanics of materials

Yu Jiang (http://cals.cornell.edu/yu-jiang)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; dynamics and control; energy and sustainability; *Robotics*: robotics
- **Research Interests:** Agricultural robotics and artificial Intelligence, Image processing, High throughput plant phenotyping

Sunghwan Jung (http://cals.cornell.edu/sunghwan-sunny-jung)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; dynamics and control; energy and sustainability; fluid dynamics
- **Research Interests:** Bio-Fluid mechanics, Interfacial Dynamics, Nonlinear Dynamics, Sustainable Engineering

Malte Jung (http://infosci.cornell.edu/content/jung)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** computer-supported cooperative work; teamwork emotion;human-robot interaction and design

Brian J. Kirby (http://www.engineering.cornell.edu/faculty-directory/brian-kirby)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; energy and sustainability; fluid dynamics; micro- and nanoscale engineering; thermal science
- **Research Interests:** micro- and nanofluidics; microbioanalytical devices; laser microfabrication; interface science

Donald L Koch (https://www.cheme.cornell.edu/faculty-directory/donald-l-koch)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; micro- and nanoscale engineering; thermal science
- **Research Interests:** particulate and multiphase flows; colloids and aerosols; non-continuum gas flows

Hadas Kress-Gazit (http://www.engineering.cornell.edu/faculty-directory/hadas-kress-gazit)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** autonomous systems; hybrid systems; control; robotics

Vikram Krishnamurthy (http://www.ece.cornell.edu/faculty-directory/vikram-krishnamurthy)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control
- **Research Interests:** statistical signal processing, stochastic control & optimization

Amit Lal (http://www.ece.cornell.edu/faculty-directory/amit-lal)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: micro- and nanoscale engineering
- **Research Interests:** Developing concepts and technologies leading to integrated microsystems using micro and nanoscale fabrication techniques.

Karl J Lewis (http://www.bme.cornell.edu/faculty-directory/karl-lewis)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; solid mechanics and materials
- **Research Interests:** Understanding the interplay of mechanical cues and biological changes in musculoskeletal tissues.

Douglas MacMartin (http://www.atkinson.cornell.edu/about/people/fellows/view.php?NetID=dgm224)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control
- **Research Interests:** dynamics, feedback analysis, control design primarily related to climate science

Negin Majedi (http://www.mae.cornell.edu/faculty-directory/negin-majedi)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; micro- and nanoscale engineering
- **Research Interests:** Polymeric biomaterials, Drug delivery platforms, Effects of biomaterial mechanics on immune cell activation, Mechanoimmunology

Andreas Malikopoulos (http://www.cee.cornell.edu/faculty-directory/andreas-malikopoulos)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control

- **Research Interests:** data-driven approaches at the intersection of learning and control for cyber-physical systems; decentralized stochastic systems; stochastic scheduling and resource allocation; and learning in complex systems

Matthew Peter Miller (http://www.mae.cornell.edu/faculty-directory/matthew-peter-miller)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: solid mechanics and materials
- **Research Interests:** experimentally based material model development; effect of processing on properties

Atieh Moridi (http://www.mae.cornell.edu/faculty-directory/atieh-moridi)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: micro- and nanoscale engineering; solid mechanics and materials
- **Research Interests:** advanced materials and manufacturing, synthesizing novel high-performance materials

Nils Napp (http://www.ece.cornell.edu/faculty-directory/nils-napp)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** Algorithms, Artificial Intelligence, Complex Systems/Network Science and Computation, Computer Systems, Robotics, Statistics and Machine Learning

Cara Mae Nunez (http://www.mae.cornell.edu/faculty-directory/cara-m-nunez)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; dynamics and control; *Robotics*: robotics
- **Research Interests:** bioengineering and healthcare, biomedical engineering, biomedical imaging and instrumentation, neuroscience, robotics and autonomy, sensors and actuators

Kelly Elizabeth Nygren (http://www.chess.cornell.edu/about/staff-directory/kelly-nygren)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: solid mechanics and materials
- **Research Interests:** Advanced Manufacturing and Materials Metals and Engineering Alloys Performance of Structural Materials Advanced Characterization Techniques Materials Design Solid Mechanics

Samuel Epstein Otto (http://www.mae.cornell.edu/faculty-directory/sam-otto)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; fluid dynamics
- **Research Interests:** scientific machine learning and model reduction for continuum systems

Mason A. Peck (http://www.mae.cornell.edu/faculty-directory/mason-peck)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control
- **Research Interests:** dynamics and control; spacecraft design; systems engineering

Perrine Pepiot (http://www.engineering.cornell.edu/faculty-directory/perrine-pepiot)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; thermal science
- **Research Interests:** Computational Fluid Dynamics

Kirstin Hagelskjaer Petersen (http://www.ece.cornell.edu/faculty-directory/kirstin-hagelskjaer-petersen)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; *Robotics*: robotics
- **Research Interests:** design & coordination of large robot collectives able to achieve complex behaviors; swarm intelligence; embodied intelligence; autonomous construction

Elaine Marie Petro (http://www.mae.cornell.edu/faculty-directory/elaine-petro)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; fluid dynamics; thermal science
- **Research Interests:** Spacecraft electric propulsion and the development of sustainable space architectures

Fabien Royer (http://www.engineering.cornell.edu/faculty-directory/fabien-royer)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; solid mechanics and materials
- **Research Interests:** Space Science and Engineering, Advanced Manufacturing and Materials, Solid Mechanics

Dmitry Savransky (http://www.mae.cornell.edu/faculty-directory/dmitry-savransky)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control
- **Research Interests:** Estimation and control theory; computer vision and machine learning applications for automated optical system alignment and image processing; optimal scheduling for autonomous space observatories; and statistical analysis of astronomical data sets

Robert Shepherd (http://www.mae.cornell.edu/faculty-directory/robert-f-shepherd)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; micro- and nanoscale engineering; *Robotics*: robotics

- **Research Interests:** Soft Robotics, Material Intelligence for Control Systems, Microcombustion for actuation, and Concentrated particle flow through micronozzles.

Meredith Silberstein (http://www.engineering.cornell.edu/faculty-directory/meredith-silberstein)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; solid mechanics and materials
- **Research Interests:** polymer physics, mechanochemistry, micromechanical experiments and modeling, continuum mechanics

Sadaf Sobhani (http://www.mae.cornell.edu/faculty-directory/sadaf-sobhani)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; thermal science
- **Research Interests:** Thermal management and energy conversion with the goal of impacting innovations in high-efficiency, low-emission, and robust energy systems; computational and experimental investigation of flow, heat transfer and chemical reactions in porous media.

Abraham Duncan Stroock (http://www.cheme.cornell.edu/faculty-directory/abraham-d-stroock)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; energy and sustainability; fluid dynamics; micro- and nanoscale engineering; thermal science
- **Research Interests:** microfluidics; biomedical engineering; transport phenomena; colloid science

Zhiting Tian (http://ztgroup.org/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; micro- and nanoscale engineering; solid mechanics and materials; thermal science
- **Research Interests:** micro/nanoscale heat transfer, thermal energy conversion and storage thermal management, multiscale thermal transport in organic, inorganic and hybrid materials

Marjolein van der Meulen (http://www.bme.cornell.edu/faculty-directory/marjolein-van-der-meulen)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics; solid mechanics and materials
- **Research Interests:** orthopedic biomechanics; skeletal functional adaptation; bone structural behavior; mechanics of musculoskeletal tissues

Yi Wang (http://www.engineering.cornell.edu/faculty-directory/yi-wang)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering:* biomedical mechanics; fluid dynamics
- **Research Interests:** Applying and developing data science, machine learning, optimization, physics, and statistical inference techniques for medical imaging acquisition and analysis which includes increasing imaging speed, reducing image artifacts, and generating novel image contrasts/biomarkers using physics, computer vision and signal processing strategies.

Jianxun Wang (https://jianxunwang.engineering.cornell.edu/pi-jian-xun-wang/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering:* biomedical mechanics; dynamics and control; fluid dynamics; thermal science
- **Research Interests:** Scientific Machine Learning, AI for Science, Data Assimilation, Differentiable Physics, Computational Fluid Dynamics (CFD), Computational Mechanics, Turbulence Modeling, Fluid-Structure Interaction

Zheng Jane Wang (http://physics.cornell.edu/jane-wang)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: fluid dynamics
- **Research Interests:** biological fluid dynamics; scientific computing and modeling; statistical physics

Jake Welde (http://www.jakewelde.com/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering:* dynamics and control; *Robotics:* robotics
- **Research Interests:** robotics, autonomous systems, control theory, geometric mechanics, dynamical systems, symmetry and equivariance, aerial vehicles, structured machine learning, robot design

Ulrich Bernd Wiesner (http://www.engineering.cornell.edu/faculty-directory/uli-b-wiesner)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: micro- and nanoscale engineering
- **Research Interests:** Advanced materials and 3D printing, bioengineering and healthcare, energy and sustainability, soft matter enabled quantum materials

Timothy M Wright (http://www.bme.cornell.edu/faculty-directory/timothy-wright)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: biomedical mechanics
- **Research Interests:** bone implant systems; wear of joint replacements; bone mechanics

Jingjie Yeo (http://www.mae.cornell.edu/faculty-directory/jingjie-yeo)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: solid mechanics and materials
- **Research Interests:** Interdisciplinary studies of material and biological phenomena by advancing multiscale, multi-physics computational methods and simulations

Jay Yoon (http://www.human.cornell.edu/people/jy846)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability

- **Research Interests:** product development process, human-centered design methods, research-through design, behavioral intervention technology, design for pro-environmental behavior, mental healthcare intervention

Fengqi You (http://www.atkinson.cornell.edu/about/people/fellows/view.php?NetID=fy86)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: dynamics and control; energy and sustainability
- **Research Interests:** process, energy, environmental system engineering

Shuwen Yue (http://www.cheme.cornell.edu/faculty-directory/shuwen-yue)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; micro- and nanoscale engineering
- **Research Interests:** computational molecular science and machine learning, interfacial phenomena, liquid state thermodynamics and statistical mechanics

Alan Taylor Zehnder (https://www.engineering.cornell.edu/people/alan-taylor-zehnder/)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: micro- and nanoscale engineering; solid mechanics and materials
- **Research Interests:** fracture and fatigue; experimental mechanics; metal cutting; mechanics of materials

Ke Max Zhang (http://www.atkinson.cornell.edu/about/people/fellows/view.php?NetID=kz33)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; thermal science
- **Research Interests:** air pollution; environmental nanoparticles; transportation and air quality; energy systems; climate changes

Lenan Zhang (http://www.engineering.cornell.edu/faculty-directory/lenan-zhang)

- **Campus:** Ithaca
- **Concentrations:** *Mechanical Engineering*: energy and sustainability; fluid dynamics; micro- and nanoscale engineering; solid mechanics and materials; thermal science
- **Research Interests:** Advanced Materials, Computational Fluid Dynamics, Energy and the Environment, Energy Systems Heat and Mass transfer Imaging and Instrumentation Micro Nano Systems Microfluidics Multiphase and Granular Flows Nanotechnology Surface Science Sustainable Energy Systems Thermal Systems