

# BIOCHEMISTRY, MOLECULAR AND CELL BIOLOGY (GRADUATE FIELD)

Program Website (<https://cals.cornell.edu/molecular-biology-genetics/academics/graduate/biochemistry-molecular-and-cell-biology/>)

## Field Description

The Graduate Field of Biochemistry, Molecular, and Cell Biology (BMCB) provides top-ranking, multidisciplinary training with the mission to educate research scientists for a successful career in the biological sciences. Our curriculum focuses on building foundational scientific knowledge and skills for success. Our program includes instruction in written and oral communication, critical thinking and analysis, statistical methods, and professional research ethics, a one semester teaching experience, and a research-intensive thesis project. The Field of BMCB is committed to providing a welcoming and inclusive training environment for all students, and the BMCB program puts a great emphasis on training our students to be rigorous scientists ready for a successful career. The Cornell campus offers state-of-the-art facilities and provides many opportunities for collaboration. This fertile environment, led by an enthusiastic and dedicated faculty, provides a rigorous training atmosphere. Our graduates enjoy rewarding careers in a variety of settings, including academia, industry, government, law, and the private sector.

The BMCB Field operates in partnership with the Graduate Field of Genetics, Genomics, and Development (GGD). These two programs bring together 100 faculty spanning 18 departments and institutes, providing a wealth of research possibilities. Faculty research interests encompass a broad range of biomedical problems with the intent to build a quantitative and mechanistic understanding of the fundamental processes common to all cells and organisms. Research projects in the Fields of BMCB and GGD are often multidisciplinary and apply methods in molecular and cellular biology, biochemistry, genetics, and computational genomics across a range of model systems. Our strengths range from structural and cellular biochemistry to developmental biology and molecular genetics. Project areas span many topics including the regulation of enzymes and metabolism, protein and RNA structure, cell signaling, development and tissue homeostasis, membrane trafficking, host microbiome interactions, and gene regulation and genome stability.

The BMCB and GGD Fields offer three degrees: Biochemistry PhD, Molecular Cell Biology PhD, and Genetics PhD. BMCB students pursuing a PhD in Biochemistry or Molecular Cell Biology have the opportunity to focus their coursework and research in the areas of Biochemistry & Structural Biology, Molecular & Cell Biology, or Cell & Developmental Biology. GGD students working towards the Genetics PhD can focus in the areas of Molecular Genetics, Computational Genomics, Developmental Biology, and Population Genetics & Molecular Evolution. At the time of application, prospective students should select the degree program that is best aligns with their current research interests, with the knowledge that movement between degrees programs can be facilitated if research interests evolve. More details, including faculty listings and curricular details, can be found on the BMCB program website (<https://cals.cornell.edu/molecular-biology-genetics/academics/graduate/biochemistry-molecular-and-cell-biology/>) and the GGD program website

(<https://cals.cornell.edu/molecular-biology-genetics/academics/graduate/genetics-genomics-and-development/>).

## Data and Statistics

- Doctoral Program Statistics (<https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/doctoral-program-statistics/?SelectGradField=43>)

## Field Manual

- Manual (<https://cals.cornell.edu/molecular-biology-genetics/academics/graduate/biochemistry-molecular-and-cell-biology/bmcb-current-student-faculty-resources/>)

## Subject and Degrees

### Biochemistry

- Biochemistry (Ph.D.) (Ithaca) (<https://catalog.cornell.edu/programs/biochemistry-phd/>)

### Molecular and Cell Biology

- Molecular and Cell Biology (Ph.D.) (Ithaca) (<https://catalog.cornell.edu/programs/molecular-cell-biology-phd/>)

## Concentrations by Subject

### Biochemistry

- biochemistry

### Molecular and Cell Biology

- cell biology
- molecular biology

## Faculty

Carolyn E. Adler (<http://adlerlab.vet.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** Stem cell biology; gene expression; DNA damage signaling in flatworms

Hector Aguilar-Carreno (<http://www.vet.cornell.edu/research/faculty/hector-aguilar-carreno/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** My lab studies how the viral glycoproteins of human and animal enveloped viruses structurally and functionally accomplish viral entry and egress into and from host cells. Further, we use this knowledge to create new broad-spectrum vaccines, prophylactics, and therapeutics to combat emerging, endemic, and pandemic viruses.

Eric E. Alani (<http://cals.cornell.edu/eric-e-alani/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology

- **Research Interests:** Genetic and biochemical studies aimed at understanding the role of DNA mismatch repair in maintaining genome stability

Barbara Ann Baird (<http://chemistry.cornell.edu/barbara-baird/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry
- **Research Interests:** structures and molecular mechanisms of cell surface receptors operative in immune responses

Daniel A. Barbash (<http://cals.cornell.edu/daniel-barbash/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology*: molecular biology
- **Research Interests:** Molecular evolution; evolutionary genomics

Joeva Barrow (<http://www.human.cornell.edu/people/jb2254/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** Mitochondrial biology and metabolism in the context of mitochondrial and metabolic disease; leverage unbiased CRISPR and small molecule screening approaches to identify novel targets for therapy

Jeremy M. Baskin (<http://baskin.wicmb.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology
- **Research Interests:** chemical biology and cell biology of lipid signaling

Daniel Carl Berry (<http://www.human.cornell.edu/people/dcb37/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** adipose tissue; metabolism; adipose stem cells; niche biology

Ilana Lauren Brito (<http://www.bme.cornell.edu/faculty-directory/ilana-lauren-brito/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** Human microbiome, horizontal gene transfer, antibiotic resistance, microbial transmission, host-microbe interactions

Sarah Caddy (<http://www.vet.cornell.edu/departments-centers-and-institutes/baker-institute/our-research/meet-our-faculty/sarah-caddy-ma-vetmb-phd-dacvm-mrcvs/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** Virus-antibody interactions; antigen presentation

Richard A Cerione (<http://www2.vet.cornell.edu/research/faculty/richard-cerione-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry
- **Research Interests:** signal transduction; growth factor receptors

Pamela V. Chang (<http://www.pamchanglab.com/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** host-microbe interactions, gut microbiome, microbiology and immunology

Andrew G Clark (<http://cals.cornell.edu/andrew-g-clark/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** population genetics; evolutionary genomics; genetics of complex traits

Paula Cohen (<http://www2.vet.cornell.edu/research/faculty/paula-cohen-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology*: cell biology; molecular biology
- **Research Interests:** investigation of the molecular regulation of meiotic recombination and crossing over in the mouse

Ruth N Collins (<http://www2.vet.cornell.edu/research-departments/faculty/ruth-collins-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology*: cell biology
- **Research Interests:** mechanisms of action of Rab GTPases

Benjamin Cosgrove (<http://www.bme.cornell.edu/faculty-directory/ben-cosgrove/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology*: cell biology
- **Research Interests:** we develop and utilize cellular systems bioengineering approaches to study cell communication and signaling networks regulating muscle stem cell function and tissue regeneration in aging and disease.

Brian Crane (<http://chemistry.cornell.edu/brian-crane/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry
- **Research Interests:** metalloenzyme structure and catalysis, protein electron transfer, nitric oxide enzymology, bacterial chemotaxis, structure and function of circadian clock

John Brooks Crickard (<http://cals.cornell.edu/brooks-crickard/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry*: biochemistry; *Molecular and Cell Biology*: cell biology; molecular biology

- **Research Interests:** Use single molecule imaging in combination with genetic approaches to dissect molecular mechanisms of chromosome maintenance and genomic stability

Charles G. Danko (<http://www.vet.cornell.edu/research/faculty/charles-danko-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** how gene expression patterns are encoded in DNA sequence, patterns contribute to evolution and disease

Arunika Das (<http://www.vet.cornell.edu/arunika-das-ms-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Exploring epigenetic mechanisms that preserve genome integrity in the female germline and embryo. We study how specialized histones are inherited through embryo reprogramming, and how they evade age related decay in eggs using cell biology, and imaging.

Iwijn De Vlaminck (<http://www.bme.cornell.edu/faculty-directory/iwijn-de-vlaminck/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Development of precision medicine technologies for microbiology and immunology and the application of these technologies in the monitoring of infectious diseases and immune-related complications

Matthew P DeLisa (<http://www.engineering.cornell.edu/faculty-directory/matthew-delisa/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* molecular biology
- **Research Interests:** Biomolecular engineering; biopharmaceuticals; cellular machinery; glycobiology and glycoengineering; protein engineering; synthetic biology

Anushka Dongre (<http://www.vet.cornell.edu/research/faculty/anushka-dongre-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** We work at the interface of cancer biology and immunology with a focus on understanding how cancer cell-intrinsic and extrinsic factors regulate anti-tumor immunity and resistance to immune checkpoint blockade therapies in the context of breast cancers.

Scott D. Emr (<http://emr.wicmb.cornell.edu/>)

- **Campus:** Ithaca - (Graduate School Professor)
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** cell signaling; membrane dynamics

Jacquelyn M Evans (<http://www.vet.cornell.edu/departments-centers-and-institutes/baker-institute/our-research/meet-our-faculty/jacquelyn-evans-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** We utilize genomic, transcriptomic, and epigenomic tools to investigate the genetic basis of complex diseases in dogs as models for human disease, including cancer and autoimmune disorders.

Cedric Feschotte (<http://cals.cornell.edu/cedric-feschotte/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* molecular biology
- **Research Interests:** genome biology and evolution; mobile genetic elements; endogenous viruses; gene regulation; noncoding RNAs

Martha S. Field (<http://www.human.cornell.edu/people/mas246/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Molecular mechanisms of gene-nutrient-environment interactions that lead to pathology; folate and vitamin B12 metabolism; central/glucose metabolism

Claudia Fischbach-Teschl (<http://www.bme.cornell.edu/faculty-directory/claudia-fischbach/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Physical properties of the microenvironment regulate tumor growth and metastasis. We use tissue-engineered and microfabricated model systems, biomaterials, and advanced imaging approaches to elucidate obesity-related breast cancer and bone metastasis.

Andrew Flyak (<http://www.vet.cornell.edu/andrew-flyak-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** In the Flyak lab, we isolate antibodies from human individuals, characterize antibodies using a wide range of immunologic and biochemistry assays, and then use structural biology techniques to "see" how antibodies bind and neutralize viral pathogens.

Joseph Chris Fromme (<http://cals.cornell.edu/chris-fromme/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology

- **Research Interests:** protein and membrane trafficking; GTPase signaling; organelle homeostasis; X-ray crystallography; cryo-EM

Martin Graef (<http://cals.cornell.edu/martin-graef/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Molecular mechanisms and physiological functions of autophagy; intracellular degradative process; multidisciplinary approach including genetics, cell biology, and biochemistry in budding yeast and mammalian cell culture

Andrew W. Grimson (<http://cals.cornell.edu/andrew-william-grimson/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* molecular biology
- **Research Interests:** Eukaryotic gene regulation; post-transcriptional gene regulation; small RNAs; microRNA (miRNA); UTRs; evolution

Laura Helen Gunn (<http://cals.cornell.edu/laura-gunn/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** We study the sequence-structure-function of nature's carbon-fixing enzyme, Rubisco, using structural biology, synthetic biology and protein engineering approaches

Chun Han (<http://cals.cornell.edu/chun-han/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* molecular biology
- **Research Interests:** Dendrite development; dendrite degeneration; dendrite/neuronal environment interaction; neural development

Maureen R Hanson (<http://cals.cornell.edu/maureen-hanson/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** organelle gene expression; nuclear-organelle interactions; pollen development gene expression in plants and humans; RNA editing; molecular mechanism of chronic fatigue syndrome; photosynthesis

John D Helmann (<http://cals.cornell.edu/microbiology/research/active-research-labs/helmann-lab/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** Bacterial physiology, metal ion homeostasis, cell envelope

Gunther Hollopeter (<http://www2.vet.cornell.edu/research-departments/faculty/gunther-hollopeter-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology

- **Research Interests:** use of *C. elegans* to study the endocytic machinery

Fenghua Hu (<http://hu.wicmb.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** molecular and cellular mechanisms of neurodegeneration and other brain disorders; protein trafficking, cellular signaling and lysosome biology

Lori Huberman (<http://blogs.cornell.edu/huberman/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** We use and develop genetic and genomic tools to identify and characterize the genetic pathways regulating how fungi sense and respond to their environment.

Saki Ichikawa (<http://www.vet.cornell.edu/saki-ichikawa-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** The Ichikawa lab investigates the role of post-translational modifications in human biology. We explore how these modifications influence cell signaling, metabolism, and protein homeostasis, especially through their interactions with E3 ubiquitin ligases.

Shaoyi Jiang (<http://www.bme.cornell.edu/faculty-directory/shaoyi-jiang/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** (a) Stem cells: We study how stem cells (e.g., HSPCs and iPSCs) respond to chemical, biological and mechanical cues under controlled environments; (b) mRNAs/DNAs: We work on mRNA delivery where mRNA stability, immunogenicity and signal amplification are all critical.

Toshimitsu Kawate (<http://www2.vet.cornell.edu/research/faculty/toshikawate-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** Molecular mechanisms of extracellular signaling; membrane receptors; ion channels; X-ray crystallography; electrophysiology; biochemistry; biophysics

Jongmin Kim (<http://www.vet.cornell.edu/research/jongmin-kim-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** How do chromatin-modifying proteins block the misexpression of unwanted genes and safeguard male germ cell fate? We use mouse and fly spermatogenesis as in vivo models

to identify new genes involved in silencing and elucidate their mechanisms.

Satoshi Kimura (<http://www.vet.cornell.edu/satoshi-kimura-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Translation control, RNA modification, Bacterial pathogenesis, Host-microbial interactions

Natasza Kurpios (<http://www.vet.cornell.edu/research/faculty/natasza-kurpios-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Developmental biology; embryology; left-right asymmetry; gut morphogenesis; cell shape; cancer biology; cell adhesion; vascular development; angiogenesis

Hojoong Kwak (<http://cals.cornell.edu/hojoong-kwak/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* molecular biology
- **Research Interests:** identifying regulatory regions of genome in human population; regulation of RNA lifespan in stress response; single cell genomics

Alex Kwan (<http://alexkwanlab.org/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Research in the Kwan lab focuses on the neurobiology of depression and psychiatric drug action. We study the molecular, cellular, and circuit mechanisms in the brain using optical imaging, electrophysiological, and genetic methods in mice.

Jan Lammerding (<http://lammerding.wicmb.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Cellular biomechanics; mechanobiology; mechanotransduction signaling; nuclear envelope proteins; cancer; muscular dystrophy and heart disease; stem cells

Sylvia Siu Lee (<http://blogs.cornell.edu/sylvialeelab/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* molecular biology
- **Research Interests:** molecular and genetic underpinnings of aging biology

David Ming Lin (<http://www2.vet.cornell.edu/research-departments/faculty/david-lin-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* molecular biology

- **Research Interests:** Lin lab uses molecular, genetic and genomic tools to study the development and degeneration of the nervous systems, focusing on the mouse olfactory system

Maurine E. Linder (<http://www2.vet.cornell.edu/research/faculty/maurine-linder-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** regulation of signal transduction and protein traffic by protein lipidation

John T Lis (<http://blogs.cornell.edu/johnlislab/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** gene regulation and chromatin structure

Jun (Kelly) Liu (<http://cals.cornell.edu/jun-liu/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** regulation of BMP (bone morphogenetic protein) signaling, mesoderm development

Yuxin Mao (<http://cals.cornell.edu/yuxin-mao/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** structural biology; membrane trafficking; phosphoinositide signaling

Eirene Chloe Markenscoff-Papadimitriou (<http://cals.cornell.edu/eirene-markenscoff-papadimitriou/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** My research probes gene regulatory mechanisms that control neuronal identity and function during brain development and how they malfunction in autism and other neurodevelopmental disorders.

Linda K Nicholson (<http://cals.cornell.edu/linda-nicholson/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** structural and dynamics studies of phosphorylated and unphosphorylated pp60c-scr; structural and dynamics studies of yeast MCM1

Alexander Yu Nikitin (<http://www2.vet.cornell.edu/research/faculty/alexander-nikitin-md-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology
- **Research Interests:** Stem cells and cancer; reproductive biology; genetically modified mouse models; human organoid cultures

Zeribe Nwosu (<http://cals.cornell.edu/zeribe-nwosu/>)



- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Research in the Nwosu Lab focuses on understanding the metabolic alterations that drive cancer, the involvement of tumor microenvironment cells in modulating metabolism, and ways to effectively target metabolism to improve cancer treatment.

Wojtek Pawlowski (<http://cals.cornell.edu/wojtek-pawlowski/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** mechanisms of meiosis; meiotic recombination

Joseph E Peters (<http://cals.cornell.edu/joseph-e-peters/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** chromosome integrity (transposition, DNA replication, recombination and repair); CRISPR-Cas systems

Jeffrey A. Pleiss (<http://cals.cornell.edu/jeffrey-pleiss/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* molecular biology
- **Research Interests:** genome-wide approaches; microarray; high-throughput sequencing; RNA biology; pre-mRNA processing; splicing

Benjamin F. Pugh (<http://cals.cornell.edu/franklin-pugh/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** molecular mechanisms of gene regulation, involving biochemical, molecular, genetic, genomic, and computational techniques.

Shu-Bing Qian (<http://qian.human.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology
- **Research Interests:** protein synthesis and degradation; mRNA translation and aging research

Jeffrey Warren Roberts (<http://cals.cornell.edu/jeffrey-warren-roberts/>)

- **Campus:** Ithaca - (Graduate School Professor)
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** prokaryotic gene expression; transcription mechanisms; control of DNA repair

Adrienne H.K. Roeder (<http://cals.cornell.edu/adrienne-roeder/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Role of cell division and growth in plant development and patterning

David G Russell (<http://www2.vet.cornell.edu/research/faculty/david-russell-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology
- **Research Interests:** interplay between mycobacterium tuberculosis and its host cell, the macrophage

Richa Sardana (<http://www.vet.cornell.edu/richa-sardana-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** How membrane protein trafficking and quality control mechanisms surveil the membrane proteome, and how their dysregulation results in human disease.

John C. Schimenti (<http://www2.vet.cornell.edu/research-departments/faculty/john-schimenti-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* molecular biology
- **Research Interests:** mammalian genetics; reproductive biology; maintenance of genome integrity; cancer genetics

Frank C. Schroeder (<http://chemistry.cornell.edu/frank-c-schroeder/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** structures and biological functions of small molecule metabolites in *C. elegans* and other model organisms

Praveen Sethupathy (<http://www2.vet.cornell.edu/research/faculty/praveen-sethupathy-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Genomics and gene regulation in liver and gut biology and disease; gastrointestinal (GI) epithelial cell biology; translational research relating to metabolic disease, inflammatory GI disease, and GI cancers

Carolyn S. Sevier (<http://www2.vet.cornell.edu/research/faculty/carolyn-sevier-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** signaling of cellular oxidative stress; molecular mechanisms used by cellular pathways that sense and signal redox imbalances within the cell

Marcus B. Smolka (<http://smolka.wicmb.cornell.edu/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** proteomics; cell signaling; DNA damage response

Jeongmin Song (<http://www.vet.cornell.edu/research/faculty/jeongmin-song-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Bacterial AB toxins; Glycanconjugates in host-pathogen interactions; Salmonella host adaptation, virulence, and persistence; antimicrobial resistance; vaccines; monoclonal antibodies

Ayshwarya Subramanian (<http://cals.cornell.edu/ayshwarya-subramanian-0/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** The focus of my research is understanding the principles governing cellular heterogeneity, crosstalk, and evolution in the context of human tissues and disease.

Tudorita Tumber (<http://cals.cornell.edu/tudorita-tumber/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology
- **Research Interests:** adult tissue stem cells

Klaas Van Wijk (<http://cals.cornell.edu/klaas-van-wijk/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Chloroplast proteostasis in plants with emphasis on proteases and discovery of degrons, using a combination of protein biochemistry, mass spectrometry, systems biology and molecular biology

Michelle D Wang (<http://physics.cornell.edu/michelle-wang/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** biological molecular motors using biophysical techniques

Meng Wang (<http://www.human.cornell.edu/people/mw997/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** We aim to dissect how metabolism can cause DNA damage that impacts cancer development and aging, and to design novel treatments that target DNA damage pathways. We use genetic and mass spectrometry approaches in cell lines and animal models.

Robert Samuel Weiss (<http://www2.vet.cornell.edu/research/faculty/robert-weiss-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* molecular biology
- **Research Interests:** molecular mechanism for the maintenance of genomic stability; cellular responses to DNA damage; mouse models of human cancer

Andrew C. White (<http://www2.vet.cornell.edu/research/faculty/andrew-white-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* cell biology
- **Research Interests:** In vivo interrogations of cancer cell, immune cell and stem cell interactions in the context of melanocyte homeostasis and melanoma development

Gary R Whittaker (<http://www2.vet.cornell.edu/research/faculty/gary-whittaker-phd/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry
- **Research Interests:** interactions of animal viruses with the host cell

Mariana Federica Wolfner (<http://cals.cornell.edu/mariana-federica-wolfner/>)

- **Campus:** Ithaca
- **Concentrations:** *Molecular and Cell Biology:* cell biology; molecular biology
- **Research Interests:** Molecular, developmental, and genetic studies of *Drosophila* and mosquito reproduction. We focus on functions and evolution of seminal proteins and on the ionic and molecular mechanisms that initiate embryo development.

Haiyuan Yu (<http://www.bme.cornell.edu/faculty-directory/haiyuan-yu/>)

- **Campus:** Ithaca
- **Concentrations:** *Biochemistry:* biochemistry; *Molecular and Cell Biology:* molecular biology