GENETICS, GENOMICS AND DEVELOPMENT (GRADUATE FIELD)

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

Field Description

The graduate field of genetics, genomics, and development (GGD) 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 GGD is committed to providing a welcoming and inclusive training environment for all students, and the GGD program puts a great emphasis on training our students to be rigorous scientists ready for successful careers. 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 environment. Our graduates enjoy rewarding careers in a variety of settings, including academia, industry, government, law, and many others.

The GGD field operates in partnership with the graduate field of biochemistry, molecular, and cell biology (BMCB). 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 GGD and BMCB are often multidisciplinary and apply methods in genetics, computational genomics, molecular and cellular biology, and biochemistry, and across a range of model systems. Our strengths range from molecular genetics, computational genomics, developmental and cell biology, to structural and cellular biochemistry. Project areas span many topics including gene regulation and genome stability, population genetics and molecular evolution, cell signaling, development and tissue homeostasis, membrane trafficking, host microbiome interactions, the regulation of enzymes and metabolism, protein and RNA structure.

The GGD and BMCB Fields together offer three degrees: genetics Ph.D., molecular cell biology Ph.D., and biochemistry Ph.D. GGD students working toward the genetics Ph.D. have the opportunity to focus their coursework and research in the areas of molecular genetics, computational genomics, developmental biology, and population genetics and molecular evolution. BMCB students pursuing a Ph.D. in biochemistry or molecular cell biology can focus in the areas of biochemistry and structural biology, molecular and cell biology, or cell and developmental biology. 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 GGD program website (https://cals.cornell.edu/molecular-biology-genetics/academics/graduate/genetics-genomics-and-development) and BMCB program website (https://cals.cornell.edu/molecular-biology-genetics/academics/graduate/biochemistry-molecular-and-cell-biology).

Data and Statistics

- Doctoral Program Statistics (https://gradschool.cornell.edu/about/program-metrics-assessments-and-outcomes/doctoral-program-statistics/?SelectGradField=51)

Field Manual

- Manual (https://cals.cornell.edu/molecular-biology-genetics/academics/graduate/genetics-genomics-and-development/ggd-student-handbook-faculty-resources)

Degree Programs

- Genetics (PhD) (https://catalog.cornell.edu/programs/genetics-phd/)

Concentrations by Subject

Genetics

- developmental biology
- genetics
- genomics

Faculty

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests**: stem cells, homeostasis, and regeneration

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: Roles for DNA mismatch repair proteins in maintaining genome stability

Alexei Aravin (http://cals.cornell.edu/people/alexei-aravin)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* developmental biology; genetics; genomics
- **Research Interests:** Non-coding RNA, piRNA (piwi interacting RNA), RNA interference, genome defense, selfish genes, transposable elements, epigenetic regulation, chromatin (especially heterochromatin) structure and function, regulation of gene expression.

Daniel A. Barbash (https://cals.cornell.edu/people/daniel-barbash)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests:** Evolutionary genomics; molecular evolution; speciation

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **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

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests**: adipose tissue; metabolism; adipose stem cells; niche biology

Adam Boyko (https://www.vet.cornell.edu/about-us/people/adam-boyko-phd)

- **Campus:** Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: Canine genomics; evolutionary and population genetics; adaptation; computational biology; genetic architecture of complex traits and diseases; artificial selection; village dogs

Maria Angelica Bravo Nunez (http://cals.cornell.edu/people/maria-angelica-bravo-nunez)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics; genomics
- **Research Interests:** Molecular mechanisms and evolution of chromosome segregation in fungal pathogens and model yeasts.

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

- **Campus:** Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: human microbiome; horizontal gene transfer; antibiotic resistance; microbial transmission

Nicolas S Buchon (http://cals.cornell.edu/nicolas-buchon)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests:** Intestinal physiology; stem cells; host microbe relationships

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology
- **Research Interests**: mechanobiology of cardiovascular embryonic development and malformation; cardiac/valve regeneration; tissue engineering; developmental redux in aging and chronic cardiovascular diseases.

Richard A Cerione (https://www.vet.cornell.edu/about-us/people/richard-cerione-phd)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* developmental biology; genetics
- **Research Interests:** signal transduction; growth factor receptors

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests:** population genetics; evolutionary genomics; genetics of complex traits

Paula Cohen (https://www.vet.cornell.edu/about-us/people/paula-cohen-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: DNA repair proteins in mammalian meiosis and germ cell development

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genomics
- **Research Interests**: We develop and utilize cellular systems bioengineering approaches to study the signaling network alterations underlying the decline of stem cell function and tissue regeneration in aging and disease.

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: We use single molecule imaging in combination with genetic approaches to dissect molecular mechanisms of chromosome maintenance and genomic stability.

Charles G. Danko (https://www.vet.cornell.edu/about-us/people/charles-danko-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: Gene expression, transcriptional regulation, enhancers, promoters, non-coding DNA

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **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**: *Genetics*: genomics
- **Research Interests**: develop precision medicine technologies for microbiology and immunology, application of these technologies in monitoring infectious diseases and immune related complications

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics

- **Research Interests:** Biomolecular engineering; biopharmaceuticals; cellular machinery; glycobiology and glycoengineering; protein engineering; synthetic biology

Anushka Dongre (https://www.vet.cornell.edu/about-us/people/anushka-dongre-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **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.

Erik David Enbody (https://cals.cornell.edu/people/erik-enbody)

- **Campus:** Ithaca
- **Concentrations:** *Genetics*: genetics; genomics
- **Research Interests:** My research spans evolutionary biology and conservation genomics. We study Galápagos finches using large-scale genomics to map adaptive traits. In conservation, we partner with practitioners to assess genomic health and gene flow in threatened populations.

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**: *Genetics*: genetics; genomics
- **Research Interests**: We investigate the genetic basis of complex diseases in dogs as models for human disease, including cancer and autoimmune disorders.

Katalin Fejes Toth (http://cals.cornell.edu/people/katalin-fejes-toth)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* developmental biology; genetics; genomics
- **Research Interests:** Transcriptional and post-transcriptional regulation of transposons (TEs); piRNA functions in host gene regulation and genome defense; Co-evolution of TEs and piRNAs and their adaptations for developmental gene control; Chromatin biology and gene regulation

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: Using an integrative approach, combining bioinformatics, genetics and biochemistry, my lab investigates the contribution of mobile elements to genomic variation and to the emergence of biological novelty, including new genes and regulatory sequences, in a broad range of eukaryotic organisms. We focus on mobile and invasive DNA, with an emphasis on the genomes of vertebrates, including humans.

Tara D. Fischer (https://cals.cornell.edu/people/tara-fischer)

- **Campus:** Ithaca
- **Concentrations:** Genetics: developmental biology; genetics; genomics
- **Research Interests:** We combine cell and molecular biology, biochemistry, genetics, and advanced microscopy approaches to dissect basic mechanisms of organelle quality control related to cellular immunity and neurodegeneration.

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **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**: *Genetics*: genetics; genomics
- **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**: *Genetics*: genetics
- **Research Interests**: Eukaryotic gene regulation; post-transcriptional gene regulation; small RNAs; microRNAs; UTRs; evolution

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests:** Dendrite development; dendrite degeneration; dendrite/neuronal environment interaction; neural development

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: gene expression in plants and humans; photosynthesis, molecular basis of chronic fatigue syndrome, RNA editing

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

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

Gunther Hollopeter (https://www.vet.cornell.edu/about-us/people/gunther-hollopeter-phd)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* developmental biology; genetics
- **Research Interests:** use of C. elegans to study the endocytic machinery

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics

- **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**: *Genetics*: genetics; genomics
- **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.

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **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 (https://www.vet.cornell.edu/about-us/people/toshi-kawate-phd)

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

Jaehee Kim (https://cals.cornell.edu/people/jaehee-kim)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests:** The Kim lab focuses on computational problems relevant to understanding evolutionary processes and population dynamics, and in development and application of statistical methods for inference from genetic data.

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* developmental biology; genetics
- **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:** *Genetics:* genetics
- **Research Interests:** Translation control, RNA modification, Bacterial pathogenesis, Host-microbial interactions

Natasza Kurpios (https://www.vet.cornell.edu/about-us/people/natasza-kurpios-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology
- **Research Interests**: tissue morphogenesis; cell shape and architecture; organ development; gut morphogenesis; mammary gland biology; breast cancer

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **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:** *Genetics:* genetics
- **Research Interests:** Cellular biomechanics; mechanobiology; mechanotransduction signaling; nuclear envelope proteins; cancer; muscular dystrophy and heart disease; stem cells

Colleen M. Lau (https://www.vet.cornell.edu/about-us/people/colleen-lau-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: Studying immune memory in innate and adaptive lymphocytes using genome-wide approaches and genetic mouse models during viral infection and other inflammatory contexts.

Brian Paul Lazzaro (http://cals.cornell.edu/brian-paul-lazzaro)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: evolutionary and functional genetics of host-pathogen interactions; insect immunity; Drosophila genetics, genomics and population genetics

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: molecular and genetic underpinnings of aging biology

David Ming Lin (https://www.vet.cornell.edu/about-us/people/david-lin-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology
- **Research Interests**: axon guidance and target formation during the development of the mouse olfactory system, using genetic, in vitro, and genomic approaches

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: gene structure and regulation in Drosophila

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests**: regulation of BMP (bone morphogenetic protein) signaling, mesoderm development

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **Research Interests:** structural biology; membrane trafficking; phosphoinositide signaling

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics; genomics
- **Research Interests**: My research probes gene regulatory mechanisms that control neuronal identity and function during brain development and how they misfunction in autism and other neurodevelopmental disorders.

Philipp Messer (http://messerlab.org/)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: Population genetics; evolutionary genomics; computational biology

Patrick J Murphy (http://cals.cornell.edu/people/patrick-murphy)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* developmental biology; genetics; genomics
- **Research Interests:** The Murphy lab studies how chromatin and epigenetic mechanisms regulate gene expression during reproduction and differentiation, utilizing zebrafish and mouse models, along with genomic tools to understand inheritance and early embryonic development.

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **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/people/wojtek-pawlowski)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: mechanisms of meiosis; meiotic recombination

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: chromosome integrity (transposition, DNA replication, recombination and repair); CRISPR-Cas systems

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genomics
- **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**: *Genetics*: genetics
- **Research Interests**: nutrient sensing mechanism; protein homeostasis and adaptive stress response

Robert D. Reed (http://reedlab.org/)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genomics
- **Research Interests**: Evolutionary developmental biology; functional genomics; developmental pattern formation

Yi Athena Ren (http://cals.cornell.edu/yi-athena-ren)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* developmental biology; genetics; genomics
- **Research Interests:** Applying genomic and epigenomic approaches to understand (1) the spatiotemporal control of gene regulation in ovarian biology; and (2) mechanisms regulating ovarian development and developmental programming of ovarian health and diseases.

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests**: Role of cell division and growth in plant development and patterning

Brian Rudd (https://www.vet.cornell.edu/about-us/people/brian-rudd-mph-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genomics
- **Research Interests:** Development and function of the immune system

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **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 (https://www.vet.cornell.edu/about-us/people/john-schimenti-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: mouse developmental genetics, meiosis, recombination, mutagenesis, embryonic stem cells

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

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

Praveen Sethupathy (https://www.vet.cornell.edu/about-us/people/praveen-sethupathy-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: gene regulation; microRNAs; metabolic disease; gastrointestinal disease; stem cells; cancer

Carolyn S. Sevier (https://www.vet.cornell.edu/about-us/people/carolyn-sevier-phd)

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **Research Interests:** signaling of cellular oxidative stress; molecular mechanisms used by cellular pathways that sense and signal redox imbalances within the cell

Glenn E Simmons (https://www.vet.cornell.edu/about-us/people/glenn-e-simmons-jr-phd)

- **Campus:** Ithaca
- **Concentrations:** *Genetics*: developmental biology; genetics; genomics.
- **Research Interests:** We investigate the mechanisms behind how lipid metabolism influence tumor immunity and cellular plasticity. By exploring fatty acid signaling, we identify metabolic vulnerabilities that drive disease progression and resistance to anti-cancer therapy in patients with breast and lung cancers.

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: DNA damage; cell signaling; proteomics

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **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 Tumbar (http://cals.cornell.edu/tudorita-tumbar)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests**: understanding the molecular mechanisms involved in governing stem cell function in mouse tissue

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

- **Campus:** Ithaca
- **Concentrations:** *Genetics:* genetics
- **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

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **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.

April Wei (http://cals.cornell.edu/april-wei)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics; genomics
- **Research Interests**: We develop more accurate and scalable computational methods that utilize massive genomic datasets to gain new insights into fundamental evolutionary processes, such as demographic history, natural selection, complex traits evolution, and gene conversion.

Robert Samuel Weiss (https://www.vet.cornell.edu/about-us/people/robert-weiss-phd)

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: genetics
- **Research Interests**: molecular mechanisms 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**: *Genetics*: developmental biology; genetics
- **Research Interests**: In vivo interrogations of cancer cell, immune cell and stem cell interactions in the context of melanocyte stem cell mobilization and melanoma development

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

- **Campus**: Ithaca
- **Concentrations**: *Genetics*: developmental biology; genetics
- **Research Interests**: Genetic, developmental, and molecular 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**: *Genetics*: genetics
- **Research Interests**: biomedical systems biology with both high-throughput experimental and integrative computational methodologies, aiming to understand gene functions and their relationships within complex molecular networks and how perturbations to such systems may lead to various human diseases.