

# GENETICS AND GENOMICS (CALs)

## Program Information

*Program Director:* T. Burris

*Program Coordinator:* C. Mulligan

The University of Florida Genetics Institute is a multi-college, multi-faceted research center which offers the a degree program leading to the Ph.D. in Genetics and Genomics. Minimum requirements for this degree are available in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

What defines the Genetics & Genomics Graduate Program is the philosophy that good geneticists are integrative geneticists, who incorporate many different subfields of genetics into their work. Accordingly, faculty interests and graduate research opportunities include a wide range of areas: advances in gene therapy, understanding the maintenance of genetic variation, understanding plant immune responses, developing improved algorithms for identifying regulatory motifs in DNA sequences, and the challenges of bioethics to strategies for controlling malaria. Due to the fundamental nature of genetics in the life sciences, our training program is distributed across several colleges at UF, including but not limited to the College of Medicine (<https://graduate.education.med.ufl.edu/>), the College of Liberal Arts and Sciences (<https://clas.ufl.edu/>), the College of Agricultural and the Life Sciences (<https://cals.ufl.edu/>), and the Florida Museum of Natural History.

## Graduate Program Overview

### First Year:

Code	Title	Credits
ANG 7979	Advanced Research	1-12
BCH 6415	Advanced Molecular and Cell Biology	3
GMS 6221	Ethics in Genetics	1
GMS 6231	Genomics and Bioinformatics	3
GMS 6290	Genetics/Genomics Program Graduate Seminar (begins in the first semester and continues throughout students' graduate careers)	1
GMS 7877	Responsible Conduct of Biomedical Research	2
PCB 5065	Advanced Genetics	4
PHC 6052	Introduction to Biostatistical Methods	3

The first year core training is the research rotation program, in which students "rotate" through three labs in a minimum of two colleges. Rotations are critical to selecting a graduate advisor: they provide a hands-on opportunity to participate in the research being conducted in a lab, and a mutual opportunity to evaluate fit between advisor and prospective student.

### Second Year:

- Individual program of courses and requirements is developed in consultation with major professor and dissertation committee

Admission Standards: Prospective students should have strong backgrounds in biology and other hard sciences. Exceptional students with other backgrounds will also be considered. The research statement required as part of the application has a particularly important part in

the admissions decision. Each applicant must describe their research interests so that Graduate Faculty can evaluate knowledge of the discipline, fit to the program, and ability to articulate and motivate an interesting research problem. The required Letters of Recommendation are also extremely important in helping identify applicants with exceptional aptitude for genetics, and with research experience and promise.

Contact the Genetics and Genomics Graduate Program by email, [UFGI-Info@ad.ufl.edu](mailto:UFGI-Info@ad.ufl.edu) or by phone, 352-273-8124.

For more information, visit our website: <http://www.ufgi.ufl.edu>.

## Degrees Offered

### Degrees Offered with a Major in Genetics and Genomics

- Doctor of Philosophy
  - without a concentration
  - concentration in Clinical and Translational Science
  - concentration in Domestic Animal Genomics

Requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

## Courses

### Genetics and Genomics Courses

Code	Title	Credits
AGR 6322	Advanced Plant Breeding	3
ANG 6532	Molecular Genetics of Disease	3
ANG 7979	Advanced Research	1-12
ANG 7980	Research for Doctoral Dissertation	1-15
BCH 6415	Advanced Molecular and Cell Biology	3
BCH 7410	Advanced Gene Regulation	1
CAP 5510	Bioinformatics	3
CIS 6930	Special Topics in CIS	3
COT 5405	Analysis of Algorithms	3
FOR 6934		1-4
FOR 7979		1-12
FOR 7980		1-15
GMS 6012	Human Genetics	1
GMS 6013	Developmental Genetics	1
GMS 6014	Applications of Bioinformatics to Genetics	1
GMS 6920	Genetics Journal Colloquy	1
GMS 7979	Advanced Research	1-12
GMS 7980	Research for Doctoral Dissertation	1-15
HOS 6201	Breeding Perennial Cultivars	3
PCB 5065	Advanced Genetics	4
PCB 5615	Molecular Evolution and Systematics	4
PCB 6528	Plant Cell and Developmental Biology	3
PCB 7979	Advanced Research	1-12
PCB 7980	Research for Doctoral Dissertation	1-15
STA 5325	Fundamentals of Probability	3
STA 5328	Fundamentals of Statistical Theory	3
STA 6166	Statistical Methods in Research I	3
STA 6167	Statistical Methods in Research II	3
STA 6208	Basic Design and Analysis of Experiments	3
STA 6329	Matrix Algebra and Statistical Computing	3
STA 6934	Special Topics in Statistics	1-4
STA 7979	Advanced Research	1-12

STA 7980	Research for Doctoral Dissertation	1-15
ZOO 6927	Special Topics in Zoology	1-4
ZOO 7979	Advanced Research	1-12
ZOO 7980	Research for Doctoral Dissertation	1-15

## College of Agricultural and Life Sciences Courses

Code	Title	Credits
ALS 5156	Agricultural Ecology Principles and Applications	3
ALS 5905	Individual Study	1-4
ALS 5932	Special Topics	1-4
ALS 6046	Grant Writing	2
ALS 6166	Exotic Species and Biosecurity Issues	3
ALS 6921	Colloquium on Plant Pests of Regulatory Significance	1
ALS 6925	Integrated Plant Medicine	4
ALS 6931	Plant Medicine Program Seminar	1
ALS 6935	Topics in Biological Invasions	3
ALS 6942	Principles of Plant Pest Risk Assessment and Management	3
ALS 6943	Internship in Plant Pest Risk Assessment and Management	1-10
ANS 6936	Graduate Seminar in Animal Molecular and Cell Biology	1-2
BCH 5045	Graduate Survey of Biochemistry	4
FNR 6933	Seminar	1
STA 6093	Introduction to Applied Statistics for Agricultural and Life Sciences	3
STA 6329	Matrix Algebra and Statistical Computing	3

### Faculty

#### Professor

- Burris, Thomas P.
- Rathinasabapathi, Balasubramani

#### Affiliated Faculty

- Abisambra, Jose Francisco  
Associate Professor
- Allen, William L.  
Associate Professor
- Atkinson, Mark A.  
Eminent Scholar
- Austin, James D.  
Professor
- Baer, Charles  
Professor
- Barbazuk, William Bradley  
Professor
- Bloom, David C.  
Professor
- Bloom, Linda B.  
Professor
- Bonning, Bryony  
Eminent Scholar
- Braun, Edward Louis  
Professor

- Bungert, Jorg  
Professor
- Byrne, Barry John  
Professor
- Cavallari, Larisa Humma  
Professor
- Chevrette, Marc G.  
Assistant Professor
- Choe, Keith P.  
Associate Professor
- Cohn, Martin J.  
Professor
- Corti, Manuela  
Associate Professor
- De Crecy, Valerie Anne  
Professor
- Denslow, Nancy D.  
Professor
- Dinglasan, Rhoel David  
Professor
- Driscoll, Daniel J.  
Professor
- Duarte, Julio David  
Associate Professor
- Farrer, Matthew James  
Professor
- Ferl, Robert J.  
Distinguished Professor
- Folta, Kevin M.  
Professor
- Foster, Jamie S.  
Professor
- Foster, Thomas C.  
Professor
- Gulig, Paul A.  
Professor
- Guralnick, Robert Penn  
Curator
- Hansen, Peter J.  
Distinguished Professor
- Harfe, Brian  
Professor
- Hauser, Bernard A.  
Associate Professor
- Hoffman, Brad E.  
Associate Professor
- Kasahara, Hideko  
Courtesy Associate Professor
- Kawahara, Akito  
Curator
- Kaye, Frederic Joseph  
Professor
- Kirst, Matias  
Distinguished Professor
- Kladde, Michael P.  
Professor
- Li, Yuqing

- Professor
- Liao, Daiqing  
Associate Professor
- Lu, Jianrong J.  
Associate Professor
- Maden, Malcolm  
Professor
- March, Keith L.  
Professor
- Mathews, Carol Anne  
Professor
- Maupin, Julie A.  
Professor
- Mavian, Carla Nartuhi  
Assistant Professor
- Mccarty, Donald R.  
Professor
- McIntyre, Lauren M.  
Professor
- Menezes, Amor  
Associate Professor
- Mergia, Ayalew  
Professor
- Merritt, Matthew E.  
Professor
- Moroz, Leonid Leonidovich  
Distinguished Professor
- Mulligan, Connie Jo  
Professor
- Oppenheimer, David G.  
Associate Professor
- Paul, Annalisa  
Research Professor
- Peter, Gary Frank  
Professor
- Ranum, Laura Page  
Distinguished Professor
- Reed, David Lee  
Curator
- Renne, Rolf Friedrich  
Professor
- Resnick, James Lewis  
Professor
- Ryan, Joseph Francis  
Associate Professor
- Salemi, Marco  
Professor
- Sayour, Elias  
Professor
- Schatz, Desmond A.  
Professor
- Scott, Edward W.  
Professor
- Seaver, Elaine C.  
Professor
- Soltis, Douglas Edward  
Distinguished Professor
- Soltis, Pamela S.  
Distinguished Professor
- Song, Sihong  
Professor
- Swanson, Maurice S.  
Professor
- Traktuev, Dmitry Olegovich  
Research Associate Professor
- Triplett, Eric  
Professor
- Vaillancourt, David E.  
Professor
- Vallejos, Carlos E.  
Professor
- Vermerris, Willem  
Professor
- Vulpe, Christopher Dillon  
Professor
- Wallace, Margaret R.  
Professor
- Wang, Eric Tzy-Shi  
Professor
- Wang, Jianping  
Professor
- Wayne, Marta L.  
Professor
- Wu, Lizi  
Professor
- Xie, Mingyi  
Associate Professor
- Zhou, Lei  
Professor
- Zolotukhin, Serge  
Professor