

ANIMAL MOLECULAR AND CELLULAR BIOLOGY

Program Information

The animal molecular and cell biology (AMCB) graduate program offers Master of Science and Doctor of Philosophy degrees. Faculty are drawn from these disciplines:

- Animal Sciences
- Biochemistry and Molecular Biology
- Large Animal Clinical Sciences
- Obstetrics and Gynecology
- Zoology

Early in the program, students choose a faculty supervisor who will ensure the quality of their research experience. Students may also do optional rotations through the laboratories of one or more other faculty. The Annual Research Symposium features guest speakers and student research presentations. A weekly journal club and monthly seminars draw on the knowledge and diversity the campus offers in molecular and cell biology.

Core course requirements for the M.S. degree are BCH 5045 Graduate Survey of Biochemistry (4 cr.), registration in a 1-credit graduate seminar course and successful completion of a course on responsible and ethical conduct of research. Core course requirements for the Ph.D. include BCH 5413 Mammalian Molecular Biology and Genetics (3 cr.) and GMS 6421 Cell Biology (4 cr.), registration in two graduate seminar courses and successful completion of a course on responsible and ethical conduct of research.

Contact P.J. Hansen at pjhansen@ufl.edu or visit the program's website at <https://programs.ifas.ufl.edu/animal-molecular-and-cellular-biology/>. (<https://programs.ifas.ufl.edu/animal-molecular-and-cellular-biology/>)

Degrees Offered

Degrees Offered with a Major in Animal Molecular and Cellular Biology

- Doctor of Philosophy
 - no concentration
 - concentration in Domestic Animal Genomics
 - concentration in Reproductive Biotechnology
- Master of Science
 - no concentration
 - concentration in Domestic Animal Genomics
 - concentration in Reproductive Biotechnology

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

Courses

Animal Molecular and Cellular Biology Courses

Code	Title	Credits
ABE 6933	Special Topics in Agricultural and Biological Engineering	1-4

ALS 5932	Special Topics	1-4
ALS 6046	Grant Writing	2
ANS 5446	Animal Nutrition	3
ANS 5935	Reproductive Biology Seminar and Research Studies	1
ANS 6288	Experimental Techniques and Analytical Procedures in Meat Research	3
ANS 6313	Current Concepts in Reproductive Biology	2
ANS 6387	Genetic Analysis of Complex Traits in Livestock	3
ANS 6447	Ruminant Nutrition	4
ANS 6449	Vitamins	3
ANS 6458	Advanced Methods in Nutrition Technology	3
ANS 6636	Meat Technology	3
ANS 6702	Physiology of the Mammary Gland and Lactation	2
ANS 6704	Mammalian Endocrinology	2
ANS 6705	Muscle Physiology	1
ANS 6707	Growth Physiology in Farm Animals	1
ANS 6711	Current Topics in Equine Nutrition and Exercise Physiology	2
ANS 6715	Gastrointestinal and Feed Microbiology	3
ANS 6716	Physiology in Farm Animals	1
ANS 6718	Nutritional Physiology of Domestic Animals	2
ANS 6723	Mineral Nutrition and Metabolism	3
ANS 6750	Reproductive Physiology in Farm Animals	1
ANS 6751	Physiology of Reproduction	3
ANS 6767	Advanced Endocrinology	3
ANS 6905	Problems in Animal Science	1-4
ANS 6910	Supervised Research	1-5
ANS 6932	Special Topics in Animal Science	1-3
ANS 6936	Graduate Seminar in Animal Molecular and Cell Biology	1-2
ANS 6939	Animal Molecular and Cellular Biology Journal Colloquy	1
ANS 6940	Supervised Teaching	1-5
ANS 6942	Supervised Extension in the Animal Sciences	1-3
ANS 6971	Research for Master's Thesis	1-15
ANS 7979	Advanced Research	1-12
ANS 7980	Research for Doctoral Dissertation	1-15
BCH 5045	Graduate Survey of Biochemistry	4
BCH 5413	Mammalian Molecular Biology and Genetics	3
BCH 6206	Advanced Metabolism	3
BCH 6415	Advanced Molecular and Cell Biology	3
BCH 6740	Physical Biochemistry/Structural Biology	3
BCH 6876	Recent Advances in Membrane Biology	1
BCH 6877	Recent Advances in Structural Biology	1
BME 5401	Biomedical Engineering and Physiology I	3
GMS 6012	Human Genetics	1
GMS 6013	Developmental Genetics	1
GMS 6014	Applications of Bioinformatics to Genetics	1
GMS 6051	Signal Transduction	1
GMS 6061	Nuclear Structure and Dynamics	1
GMS 6062	Protein Trafficking	1
GMS 6065	Fundamentals of Cancer Biology	3
GMS 6079	Computers in Biology	1
GMS 6140	Principles of Immunology	4
GMS 6143	Cells of the Innate Immune System	1
GMS 6221	Ethics in Genetics	1
GMS 6231	Genomics and Bioinformatics	3
GMS 6331	Stem Cell Biology	1
GMS 6400C	Principles of Physiology	6

GMS 6421	Cell Biology	4
GMS 6647	Transcriptional and Translational Control of Cell Growth and Proliferation	1
GMS 6861	Applied Biostatistics I	3
MCB 5305L	Microbial Genetics and Biotechnology Laboratory	2
MCB 6485	Advanced Techniques in Microbiology and Cell Science	2-4
PCB 5065	Advanced Genetics	4
PCB 5235	Immunology	3
PCB 5615	Molecular Evolution and Systematics	4
PCB 6816	Thermal Physiology	1
PHA 6449	Pharmacogenomic and Genomic Data Analysis	3
PHC 7090	Advanced Biostatistical Methods I	3
PHC 7091	Advanced Biostatistical Methods II	3
STA 6093	Introduction to Applied Statistics for Agricultural and Life Sciences	3
VME 5244	Physiology: Organ Systems	4
VME 6464	Molecular Pathogenesis	3
VME 6602	General Toxicology	3
VME 6650	Principles of Mammalian Pharmacology	4
VME 6767	Issues in the Responsible Conduct of Research	1

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
STA 6093	Introduction to Applied Statistics for Agricultural and Life Sciences	3
STA 6329	Matrix Algebra and Statistical Computing	3