CELL BIOLOGY, PH.D.

About the Department

The graduate program is designed to prepare individuals for academic and research careers in cell biology. Students are encouraged to obtain a broad background in the various disciplines and develop and pursue a research project in one of the areas of scientific investigation currently available in the department.

All degree candidates participate in teaching courses offered by the department. Each student will work with a departmental faculty advisor and a committee composed primarily of departmental faculty members. To fulfill students' specialized needs and interests, the department offers advanced courses taught by faculty whose expertise is closely related to the contents of the course work. Students may also choose electives that emphasize anatomical or pharmacological studies. Related biomedical courses taught by other departments in the University also are available. Graduate assistantships and fellowships are available to qualified students on a competitive basis.

Areas of Specialization

Developmental biology, retinal biochemistry; gene regulation, neurobiology of sensory systems, autonomic and cardiovascular pharmacology, nerve regeneration, cell cycle, cancer biology, and cell signaling mechanisms

Career Opportunities

The interdisciplinary nature of the Cell Biology Graduate program provides students with the breadth of knowledge and technical acumen that is highly sought in today's competitive job market. Graduates from the Cell Biology program have numerous exciting career opportunities in academia, industry, the government, and the private sector. Graduates can devote their careers to full-time research at government-sponsored laboratories or the pharmaceutical industry. Alternatively, a graduate can choose a career in academia, which includes teaching and/or performing basic science research at universities and medical schools.

Cost

It is the student’s responsibility to ensure they are enrolled in the prescribed courses and to pay tuition and fees at the time designated by the Bursar's Office. Details regarding tuition/fee charges and collection are available from the Bursar’s Office.

Prerequisites

- Bachelor’s degree in a relevant major.
- Grade point average of 3.0 in the last 60 hours of coursework applied to degree.
- GRE general exam is optional.
- Proof of language proficiency for international applicants.
- Three letters of recommendation.

Doctor of Philosophy Degree Requirements

Candidates for the PhD degree must meet the following minimum requirements:

1. 90 credit hours acceptable to the student's graduate committee;
2. obtain at least a B average in the required graduate courses (Integrated Core Curriculum, Cellular and Molecular Developmental Biology, Statistics);
3. attendance and participation in departmental seminar activity and Journal Club;
4. successful completion of a comprehensive qualifying examination;
5. a research proposal, original investigation, written dissertation, and general dissertation defense (A maximum of 60 credit hours is allowed for dissertation research.)

At the discretion of the Graduate Education Committee, equivalent courses from other accredited institutions may be substituted for any of the requirements.

Fall YEar 1

Code	Title	Hours
BMSC 5021	Methods in Biomedical Research	1
BMSC 6012	Molecular Systems I	2
BMSC 6112	Molecular Systems II	2
BMSC 6152	Cellular Systems I	2
BMSC 6052	Cellular Systems II	2
BMSC 5001	Integrity in Scientific Research	1
BMSC 5221	Interdisciplinary First Year Journal Club	1
CELL 5990	Special Studies in Cell Biology *	3

Spring year 1

Code	Title	Hours
CELL 6111	Advanced Cell Biology I-Cells and Tissues	1
CELL 6121	Advanced Cell Biology II-Advanced Cell Signaling	1
BMSC 5011	Experimental Design and Applied Statistics	1
CELL 5990	Special Studies in Cell Biology *	3
GPIBS Selective		7

Summer year 2

Code	Title	Hours
CELL 5990	Special Studies in Cell Biology	1-8
or CELL 6000	Cell Biology Laboratory Rotation	

Fall Year 2

Code	Title	Hours
CELL 6130	Advanced Cell Biology III-Capstone	2
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1
CELL 5990	Special Studies in Cell Biology	2
or CELL 6000	Cell Biology Laboratory Rotation	
CELL 6980	Research for Doctors Dissertation	3-6
Written General Exam		

Spring Year 2

Code	Title	Hours
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1

CELL 6980	Research for Doctors Dissertation	14
Oral General Exam		

Summer year 3

Code	Title	Hours
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1
CELL 6980	Research for Doctors Dissertation	4-7

Fall Year 3

Code	Title	Hours
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1
CELL 6980	Research for Doctors Dissertation	4-7

Spring year 3

Code	Title	Hours
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1
CELL 6980	Research for Doctors Dissertation	4-7

Summer YEar 4

Code	Title	Hours
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1
CELL 6980	Research for Doctors Dissertation	4-7

Fall Year 4

Code	Title	Hours
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1
CELL 6980	Research for Doctors Dissertation	4-7

Spring Year 4

Code	Title	Hours
CELL 5960	Current Topics in Cell Biology	1
CELL 6010	Cell Biology Graduate Research Seminar	1
CELL 6980	Research for Doctors Dissertation	4-7

Electives/Selectives

Code	Title	Hours
CELL 6063	Cellular and Molecular Developmental Biology	3
CELL 6321	Molecular and Cellular Aspects of Vision	1
CELL 6401	OU Cancer Center Program Meeting	1
CELL 6421	Tumor Board	1
CELL 6960	Directed Readings in Cell Biology	1-3

Notes

- Student's advisory committee sets the remainder of any needed requirements to meet the 90 hours required for the degree.
- All electives are subject to a minimum and maximum enrollment. Credit hours are subject to change. (Note: There are additional electives offered by other departments-mentor should help choose appropriate electives.)
- Cell Biology Graduate students are allowed to enroll in elective courses related to their research needs and long-term career goals subject to approval of the Mentor and Advisory Committee. These credit hours are offset by a reduction in the dissertation research credit hours that the student is enrolled in concurrently.
- When no other courses are being taken, students enroll for more dissertation hours. Graduate Research Assistants must enroll for a minimum of 6 hours in the fall and spring and 3 hours in the summer.

* Direct Admission Students only

Admission Requirements

The department of Cell Biology is a participant in the new interdisciplinary Graduate Program in Biomedical Sciences (GPiBS) (http://graduate.ouhsc.edu/Graduate-Programs/PhD-Programs/Graduate-Program-in-Biomedical-Sciences/), which combines the expertise of the six programs at the University of Oklahoma Health Sciences Center: Biochemistry & Molecular Biology, Cell Biology, Microbiology & Immunology, Neuroscience, Pathology and Physiology. Students wishing to enter the Cell Biology graduate program apply to GPiBS as described in the GPiBS section of the Bulletin. An application is filed with the Office of Admissions and is accompanied by official transcripts and results of the Graduate Record Examination (GRE), and TOEFL for foreign applicants. Three letters of recommendation, from individuals who can address the candidate's research potential and suitability for graduate school, are also required.

Program Objectives

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