BIOMEDICAL SCIENCES - CELLULAR AND MOLECULAR BIOLOGY - M.S.

College of Sciences and Humanities
School of Biomedical Sciences
www.kent.edu/biomedical

About This Program

You'll dive into the inner workings of life as you build advanced skills in cellular and molecular biology through hands-on research and real-world lab experience. Guided by expert faculty and collaborative research opportunities, you'll prepare to tackle complex biomedical questions and pursue careers in research, biotechnology or academia.. Read more...

Contact Information

- **John Johnson** | BMS@kent.edu | 330-672-3849
- Connect with an Admissions Counselor

Program Delivery

- **Delivery:**
  - In person
- **Location:**
  - Kent Campus

Examples of Possible Careers and Salaries*

Biological science teachers, postsecondary

- 9.3% much faster than the average
- 64,700 number of jobs
- $85,600 potential earnings

Medical scientists, except epidemiologists

- 6.1% faster than the average
- 138,300 number of jobs
- $91,510 potential earnings

Biological scientists, all other

- 2.2% slower than the average
- 44,700 number of jobs
- $85,290 potential earnings

Natural sciences managers

- 4.8% about as fast as the average
- 71,400 number of jobs
- $137,940 potential earnings

* Source of occupation titles and labor data comes from the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

For more information about graduate admissions, visit the graduate admission website. For more information on international admissions, visit the international admission website.

Admission Requirements

- Bachelor's degree from an accredited college or university
- Minimum 2.750 undergraduate GPA on a 4.000-point scale
- Academic preparation adequate to perform graduate work in the desired field (recommended courses in chemistry, cell biology, genetics and biochemistry)
- Official transcript(s)
- Résumé or curriculum vitae
- Goal statement (applicants should describe their research experience and goals in pursuing an advanced degree)
- Three letters of recommendation
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions to waive) by earning one of the following:[1]
  - Minimum 94 TOEFL iBT score
  - Minimum 7.0 IELTS score
  - Minimum 65 PTE score
  - Minimum 120 DET score

[1] International applicants who do not meet the above test scores will not be considered for admission.

Application Deadlines

- **Fall Semester**
  - Application deadline: November 15

All application materials (including applicable fee, transcripts, recommendation letters, etc.) submitted after this deadline will be considered on a space-available basis.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements		
ANTH 68637	BIOANTHROPOLOGICAL DATA ANALYSIS I	4-5
or BSCI 60104	BIOLOGICAL STATISTICS	
BMS 60110	CAREER AND PROFESSIONAL SKILLS FOR LIFE SCIENTISTS	2
BMS 60120	LABORATORY TECHNIQUES IN BIOMEDICAL SCIENCES	2
BMS 61000	RESPONSIBLE CONDUCT OF RESEARCH	1
BMS 61001	INTRODUCTION TO BIOMEDICAL SCIENCES	1
BSCI 50143	EUKARYOTIC CELL BIOLOGY	3
BSCI 60144	SELECTED READINGS IN EUKARYOTIC CELL BIOLOGY	1
Graduate Electives, choose from the following:		11-12
Any Biological Sciences (BSCI) Graduate Courses (50000 level or higher)		

	Any Biomedical Sciences (BMS) Graduate Courses (50000 level or higher)	
	Other graduate courses as approved by thesis committee	
Culminating Requirement		
BMS 60199	THESIS I [1]	6
Minimum Total Credit Hours:		**32**

[1] Students selecting the thesis must continually register for BMS 60199 for maximum 6 credit hours toward the degree. Students may need to register for BMS 60299 to complete the thesis requirement; however, those credit hours do not, whatsoever, count toward the degree.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
-	3.000

- Minimum 15 credit hours of overall hours must be letter graded (required and elective courses).
- No more than one-half of a graduate student's coursework may be taken in 50000-level courses.
- Grades below C are not counted toward completion of requirements for the degree.

Program Learning Outcomes

Graduates of this program will be able to:

1. Publish their research in peer-reviewed journals.
2. Demonstrate the ability to teach undergraduate students.
3. Seek employment in fields that reflect their area of training.

Full Description

The Master of Science degree in Biomedical Sciences–Cellular and Molecular Biology prepares creative research scientists for careers in teaching, research and biotechnology. Graduates possess an in-depth comprehension of experimental design at the cellular and molecular levels of biological organization, as well as competency in current techniques in the discipline. Major research emphases include signal transduction, biochemistry and pathobiology, gene regulation, cell systems biology, cell and tissue ultrastructure, membrane structure and function, molecular aspects of neurobiology and endocrinology, genetics and metabolism of microorganisms, virology and immunology and enzymology with an emphasis on protein dynamics and folding, as well as cytochrome P-450s.

The M.S. degree in Biomedical Sciences–Cellular and Molecular Biology is offered in consortium with the Cleveland Clinic and Northeast Ohio Medical University (NEOMED). Program faculty are drawn from several departments at Kent State and the other two institutions. Additional participant faculty are located at area clinical facilities and hospitals. This multi-departmental and inter-institutional structure gives master's student access to the talents of a broadly diverse research faculty, as well as significant research facilities and resources.