



UNIVERSITY OF CENTRAL FLORIDA

# **Biomedical Sciences MS Graduate Program Handbook 2019-2020**

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*Revised May 2019*

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***The MS Biomedical Sciences program (non-thesis) reserves the right to make any changes or amendments to the Program/Handbook information, rules, or policies within the students' period of study upon majority approval of the program faculty, director and coordinator.***

## Welcome to the Biomedical Sciences Graduate Program at UCF!



We are excited that you have chosen UCF and our Graduate Program to continue your training and education in Biomedical Sciences. We offer a wide range of training opportunities in important areas of biomedical research including Cancer Biology, Cardiovascular Disease, Neurosciences and Infectious Disease and Immunology. In the past years, the Program has grown in the numbers of both students and faculty mentors. Our researchers have also experienced a rapid rise in our funding for impactful research projects, as well as in our reputation for outstanding training of the next generation of Biomedical Scientists. We look forward to having you as an important part of our Graduate Student Community.

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## **Program Coordinator Introduction & Welcome**

Welcome to the Burnett School of Biomedical Sciences Graduate Program at the University of Central Florida (UCF)!

This non-thesis graduate program is designed to offer you advanced knowledge in Biomedical Sciences to prepare you for professional careers in medical fields, higher education, and research. The curriculum of the program is comprehensive which includes fundamental and advanced courses in Microbiology, Molecular Biology and Biomedical sciences. The required undergraduate teaching and capstone experience should further your verbal and writing communication skill.

As a new master's student, you will face many new experiences that can be both rewarding and challenging. Course work will provide a basic grounding in relevant topics, and expectations are for you to go beyond the assigned classroom readings and use your curiosity to build your knowledgebase to support your future career.

The program director, program coordinator, faculty and staff are available to help you succeed in the program. You are encouraged to interact with your peers and to participate in the intellectual life of the university. You have already made the decision to enter a graduate degree program. This decision commits you to uphold the academic and ethical standards of UCF and the discipline of Biomedical Sciences. If you have any questions or problems, please ask for advice. We are here to help.

We wish you all the best of success during your graduate experience at UCF!



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Editor-in-Chief  
World Journal of Gastroenterology

### **FACEBOOK**

**Like us on Facebook!**

<https://www.facebook.com/BurnettSchoolGraduatePrograms/>

# Biomedical Sciences MS

Together, the [Graduate Student Handbook](#) and your graduate program handbook should serve as your main guide throughout your graduate career. The Graduate Student Handbook includes university information, policies, requirements and guidance for all graduate students. Your program handbook describes the details about graduate study and requirements in your specific program. While both of these handbooks are wonderful resources, know that you are always welcome to talk with faculty and staff in your program and in the Graduate College.

The central activities and missions of a university rest upon the fundamental assumption that all members of the university community conduct themselves in accordance with a strict adherence to academic and scholarly integrity. As a graduate student and member of the university community, you are expected to display the highest standards of academic and personal integrity.

Here are some resources to help you better understand your responsibilities:

- [Academic Honesty](#)
- [Academic Integrity Training](#) - Open to all graduate students at no cost
- [Plagiarism](#)

## Introduction

### Mission Statement and Overview

**Mission:** The Master of Science in Biomedical Sciences program is for students who wish to further their knowledge in the field and prepare for professional careers in medical fields. This program also addresses the need of applicants who wish to pursue a teaching career in secondary schools, two-year and four-year colleges or other careers without an active research role.

The Graduate Faculty includes more than 100 reputable scientists with established achievements in diverse aspects of biomedical sciences including metabolic disorders, cardiovascular sciences, infectious disease, neuroscience, cancer, nanoscience, biomedical engineering, drug discovery, and much more.

Visit: <https://med.ucf.edu/biomed/graduate-programs/graduate-faculty/>.

Our students are recruited from outstanding programs from all over the United States and over 18 other countries. Our students receive top tier education, rigorous training in basic and clinical research, outstanding mentoring, and lifelong professional development. They become well trained in research and regulations while conducting experiments involving the use of human subjects and animals. They learn, retain, and apply fundamental knowledge in biomedical sciences. They graduate from the program as scientists with excellent education, research training, and focused career goals. Many go on as postdoctoral fellows, academics, scientists, and researchers.

Visit: <https://med.ucf.edu/biomed/graduate-programs/wherearetheynow/>

First year students are required to complete laboratory safety, radiation safety, biosafety, and blood borne pathogen courses. Students are also required to attend Pathways to Success seminar series including Academic Integrity, Graduate Grantsmanship, Graduate Teaching, Personal Development, Professional Development, and Research.

The program administrators, faculty and staff are dedicated to educate, train, and mentor tomorrow's scientists and future colleagues and collaborators. Our Graduate Student Association plays the big brother/sister role to complement the role of our faculty to help our students feel at home and succeed.

## **College Awarding the MS Degree in Biomedical Sciences**

MS Biomedical Sciences students will graduate with a Master's of Science in Biomedical Sciences degree.

## **Student Responsibility to Keep Informed**

It is the student's responsibility to keep informed of all rules, regulations, and procedures required for graduate studies. Graduate program regulations will not be waived or exceptions granted because students plead ignorance of the regulations or claim failure of the adviser to keep them informed.

## **Student Accessibility Services**

Student Accessibility Services (SAS) views disabilities as an integral part of the rich diversity at the University of Central Florida. To that end, we work collaboratively with students, faculty, and staff to create an inclusive educational environment for students. BSBS students with disabilities must contact the professor at the beginning/or prior to the semester to discuss the needed accommodations. Students who need accommodations must be registered with the Student Accessibility Services office. For more information, please contact [sas@ucf.edu](mailto:sas@ucf.edu) or (407) 823-2371.

## **UCF Golden Rule**

The Golden Rule Student Handbook is a compilation of various policies and procedures from 10 different UCF departments and was specifically created to provide the answers to many of your questions regarding University rules and regulations. This publication attempts to define your rights and responsibilities and give you a better understanding of your role as a member of the UCF community. <http://goldenrule.sdes.ucf.edu/>

## **BSBS Program Orientation**

All new graduate students are required to attend our New Graduate Student Orientation, which is held one week before Fall classes begin. Graduate students will meet with program leaders who will give an overview of the program choreography, guidelines, and expectations for our graduate program. New graduate students will also attend our Welcome Colloquium and complete all program orientation requirements including lab & safety and animal safety training.

# **Research Divisions**

## **Division of Cancer Biology Research**

Researchers in the Division of Cancer Research are on the vanguard of cancer biology, investigating:

- How patients' genes play a role in their cancer risk.
- What causes cancer and cancer metastasis.
- How cancer cells communicate with the neighboring normal cells.
- The epigenetic changes that play a role in developing drug resistance.
- Discovering new ways to harness the immune system to fight cancer.
- Identifying new targets for companion diagnostics with treatments that reduce side effects.

<https://med.ucf.edu/biomed/divisions/cancer-research/>

## **Division of Immunity and Pathogenesis**

The mission of the Immunity and Pathogenesis Division is elucidation of the cellular and molecular mechanisms at the interface of infection, inflammation and immunity. Our group has broad interest and expertise in microbial pathogenesis, innate immunity, inflammatory signaling pathways and immunological memory.

Discoveries are being translated into innovative diagnostics, vaccines, and therapeutic strategies to improve human health.

Projects are related to:

- Respiratory diseases (*Mycobacterium tuberculosis*, non-tuberculous mycobacteria, influenza, parainfluenza, respiratory syncytial virus and asthma)
- Sexually transmitted diseases (*Chlamydia trachomatis*, human papilloma virus and Zika virus)
- Vector-borne diseases (Lyme disease and emerging vector borne viruses)
- Inflammatory diseases (Inflammatory bowel disease, peritonitis, autoimmune arthritis and hypersensitivity)

<https://med.ucf.edu/biomed/burnett-school-of-biomedical-sciences-research/divisions/immunity-and-pathogenesis/>

### **Division of Molecular Microbiology**

The Division of Molecular Microbiology conducts basic and applied research related to bacterial, parasitic, and viral diseases that are of major public health concern. Research is focused in two broad areas:

- Understanding the fundamental principles of microbial pathogenesis.
- Development of next-generation antimicrobial drugs.

Topics of interest include HIV, tuberculosis, malaria, mechanisms of antimicrobial resistance, evolution of bacterial pathogens, genomic epidemiology, enteric diseases, toxins, and diagnostics. Student training and development are integral components of faculty research.

<https://med.ucf.edu/biomed/burnett-school-of-biomedical-sciences-research/divisions/molecular-microbiology/>

### **Division of Metabolic and Cardiovascular Sciences**

The Metabolic and Cardiovascular Research Division focuses on understanding the pathogenesis, molecular mechanisms and cell signaling of metabolic and heart diseases and to bring translational research into the clinical environment to serve our community.

#### **Major Areas of Research**

- Metabolic syndrome in diabetes and aging
- Interactions of lipids and lipoproteins in atherosclerosis
- Inflammation in cardiac diseases (Myocardial infarction, heart failure, atherosclerosis)
- Vascular and angiogenesis in cardiac diseases
- Biological energy metabolism
- Oxidative stress, free radical and reactive oxygen species
- Mitochondrial alterations pathophysiology of cardiac diseases
- Molecular and cellular cardiology
- Regenerative medicine (stem cells) in heart diseases
- Cardiac genetic and non-genetic disease modeling using 3D printing
- Tissue engineering and drug toxicity with 3D printed scaffolds
- Cardiovascular epidemiology and public health

<https://med.ucf.edu/biomed/divisions/cardiovascular/>

## Division of Neuroscience

The mission of the Neuroscience Division is to discover cellular and molecular mechanisms that govern function of the nervous system. This knowledge is then applied to expand understanding of how neurological disorders arise and may be treated.

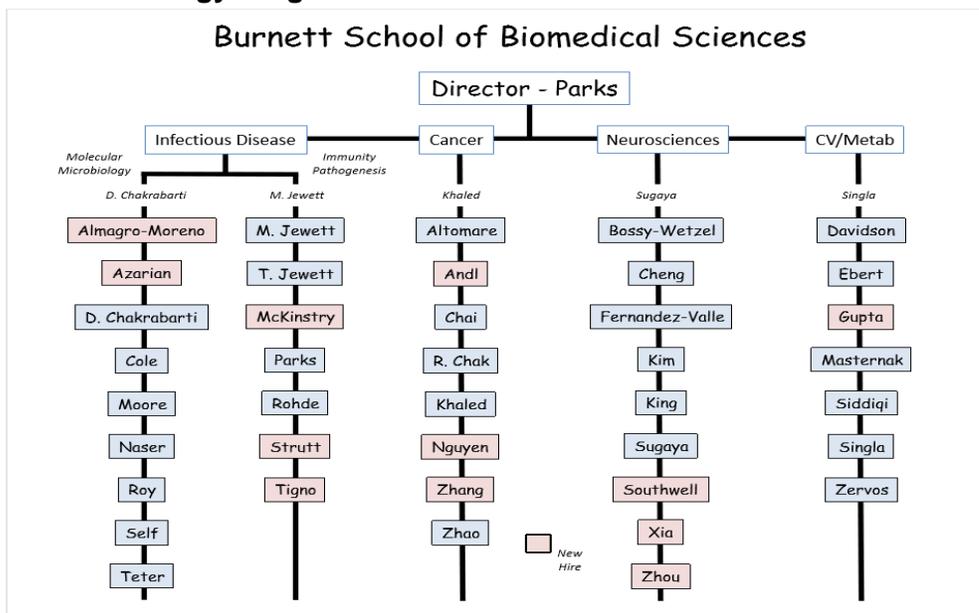
The division's researchers are conducting cutting-edge research on:

- Neurodegenerative diseases (Amyotrophic lateral sclerosis (ALS), Huntington's, Parkinson's and Alzheimer's Diseases)
- Cerebrovascular diseases (Stroke and cerebral ischemia)
- Traumatic brain injury and chronic traumatic encephalopathy (CTE) caused by concussion
- Axonal transportation dysfunctions (Charcot-Marie-Tooth disease (CMT), Perry syndrome, distal spinal and bulbar muscular atrophy)
- Sleep apnea
- Diabetes and aging-induced cardiac neuropathy
- Brain cancer such as glioblastoma multiforme (GBM) and neuroblastoma
- Optic nerve damage
- Neurofibromatosis Type 2 and schwannomatosis
- Cancers of the head and neck including oral cancer
- Regenerative medicine and stem cell therapies
- Brain machine interface
- Induced pluripotent stem (iPS) cells

Faculty collaborate with local physicians and UCF researchers (Multidisciplinary Neuroscience Alliance (MDNA, <https://med.ucf.edu/mdna/>)). They are working with Mechanical Engineering, Electrical Engineering, Computer Science, the Prosthetic Interfaces faculty cluster, Nanoscience Technology Center, Material Sciences, College of Arts and Humanity, College of Optics and Photonics, and Psychology in UCF. Collaborators also include scientists and physicians from HCA Healthcare, the Veterans Affairs Medical Center, Nemours Children's Hospital, and AdventHealth (Florida Hospital), Orlando Health and other local clinics, which enrich the clinical and translational research environment in the Neuroscience Division.

<https://med.ucf.edu/biomed/burnett-school-of-biomedical-sciences-research/divisions/neuroscience/>

**MS Thesis Note: Students interested in research and thesis work should apply to the Master of Science in Biotechnology Program.**



# MS Biomedical Sciences Program Curriculum

The Biomedical Sciences non-thesis program requires a minimum of 33 credit hours of courses that includes a capstone experience. The program addresses the need of applicants who wish to pursue a teaching career in secondary schools, two-year and four-year colleges or other careers without an active research role. Nonthesis students are not considered for departmental graduate assistantships or tuition assistance.

**Total Credit Hours Required: 33 Credit Hours Minimum beyond the Bachelor's Degree**

## Required Courses: 18 Credit Hours

- ZOO 6737 – Clinically Oriented Human Anatomy (4 credit hours)
- MCB 6226 – Molecular Diagnostics (3 credit hours)
- PCB 6595 – Regulation of Gene Expression (3 credit hours)
- PHI 5634 – Medical Ethics (3 credit hours)
- BSC 6407C – Laboratory Methods in Molecular Biology (3 credit hours) OR BSC 5418 – Tissue Engineering (3 credit hours)
- MCB 6938 – Seminar 1 credit hour (to be repeated by all students) OR MCB 6314 – Industrial Perspectives Seminar 1 credit hour

## Elective Courses: 12 Credit Hours

Nonthesis students take 12 credit hours of electives with 6 credit hours from the Biomedical Specialization and 6 credit hours from the Microbiology Specialization.

### Biomedical Specialization

- BSC 5418 - Tissue Engineering (3 Credit Hours)
- MCB 5225 - Molecular Biology of Disease (3 Credit Hours)
- MCB 6226 - Molecular Diagnostics (3 Credit Hours)
- PCB 5238 - Immunobiology (3 Credit Hours)
- PCB 5236 - Cancer Biology (3 Credit Hours)
- PCB 5275 - Signal Transduction Mechanics (3 Credit Hours)
- PCB 5527 - Genetic Engineering and Biotechnology (3 Credit Hours)
- PCB 5709C - Laboratory Virtual Simulations in Physiology (3 Credit Hours)
- PCB 5815 - Molecular Aspects of Obesity, Diabetes and Metabolism (3 Credit Hours)
- PCB 5834C - Advanced Human Physiology (4 Credit Hours)
- IDS 5127 - Foundation of Bio-Imaging Science (3 Credit Hours)
- PCB 5265 - Stem Cell Biology (3 Credit Hours)
- GEB 5516 - Technological Entrepreneurship (3 Credit Hours)

Others: If approved by Graduate Committee

### Microbiology Specialization

- MCB 5205 - Infectious Processes (3 Credit Hours)
- MCB 5505 - Molecular Virology (3 Credit Hours)
- MCB 5208 - Cellular Microbiology: Host-Pathogen Interactions (3 Credit Hours)
- MCB 6417C - Microbial Metabolism (3 Credit Hours)
- MCB 5932 - Current Topics in Molecular Biology (VAR Credit Hours)
- MCB 5415 - Cellular Metabolism (3 Credit Hours)
- MCB 5209 - Microbial Stress Response (3 Credit Hours)

- [PCB 6595 - Regulation of Gene Expression](#) (3 Credit Hours)
- [PCB 5235 - Molecular Immunology](#) (3 Credit Hours)

Others: If approved by Graduate Committee

### **Capstone: 3 Credit Hours**

An in-depth current literature research report on a relevant subject will be required for each student. The student will select a faculty adviser to chair a faculty committee of two members for evaluation of the report. *See additional information below on page 15.*

### **Comprehensive Examination**

Nonthesis students must pass an oral comprehensive exam to qualify for the Master of Science degree.

The comprehensive examination will be conducted during the capstone defense and will be administered by the capstone committee. *See additional information below on page 15.*

Please visit the [Graduate Catalog](#) to see the current curriculum for our program.

# MS Biomedical Sciences: Cancer Biology Track Program Curriculum

## Track Description

The Cancer Biology Track in the Master of Science in Biomedical Sciences Program is a non-thesis plan of study for students who want to further their knowledge in the cancer biology field and who may pursue doctoral training or professional education focused on medicine and cancer biology. Students interested in research and thesis work should apply to the Master of Science in Biotechnology Program.

The Cancer Biology Track in the Biomedical Sciences MS program requires a minimum of 33 credit hours of courses that includes a capstone experience. Students take 18 credit hours of required core courses, 12 credit hours of elective courses relevant to cancer biology and related disciplines, a capstone project focusing on cancer biology and an oral comprehensive exam.

**Total Credit Hours Required: 33 Credit Hours Minimum beyond the Bachelor's Degree**

## **Required Courses: 18 Credit Hours**

- ZOO 6737 – Clinically Oriented Human Anatomy (4 Credit Hours)
- MCB 6226 – Molecular Diagnostics (3 Credit Hours)
- PCB 6595 – Regulation of Gene Expression (3 Credit Hours)
- PCB 5236 – Cancer Biology (3 Credit Hours)
- BSC 6407C – Laboratory Methods in Molecular Biology (3 Credit Hours) OR BSC 5418 – Tissue Engineering (3 Credit Hours)
- MCB 6938 – Seminar (1 Credit Hour) (to be repeated by all students) OR MCB 6314 – Industrial Perspectives Seminar (1 Credit Hour)

## **Elective Courses: 12 Credit Hours**

Non-thesis students take 12 credit hours of electives with 6 credit hours from the Biomedical Specialization and 6 credit hours from the Microbiology Specialization.

- PCB 5025 - Molecular and Cellular Pharmacology (3 Credit Hours)
- MCB 5415 - Cellular Metabolism (3 Credit Hours)
- PCB 5235 - Molecular Immunology (3 Credit Hours)
- MCB 5225 - Molecular Biology of Disease (3 Credit Hours)
- PCB 6595 - Regulation of Gene Expression (3 Credit Hours)
- MCB 5505 - Molecular Virology (3 Credit Hours)
- PCB 5275 - Signal Transduction Mechanics (3 Credit Hours)
- MCB 6226 - Molecular Diagnostics (3 Credit Hours)
- IDS 5127 - Foundation of Bio-Imaging Science (3 Credit Hours)
- BSC 5418 - Tissue Engineering (3 Credit Hours)
- BSC 5436 - Biomedical Informatics : Structure Analysis (3 Credit Hours)
- PCB 5265 - Stem Cell Biology (3 Credit Hours)

Other elective courses must be approved by the Program Coordinator.

### **Capstone: 3 Credit Hours**

An in-depth current literature research report on a relevant subject will be required for each student. The student will select a faculty adviser to chair a faculty committee of two members for evaluation of the report. *See additional information below on page 15.*

### **Comprehensive Examination**

Non-thesis students must pass an oral comprehensive exam to qualify for the Master of Science degree.

The comprehensive examination will be conducted during the capstone defense and will be administered by the capstone committee. *See additional information below on page 15.*

Please visit the [Graduate Catalog](#) to see the current curriculum for our program.

# MS Biomedical Sciences: Infectious Disease Track Program Curriculum

## Track Description

The Infectious Disease Track in the Master of Science in Biomedical Sciences Program is a non-thesis plan of study for students who want to further their knowledge in the infectious disease field and who may pursue doctoral training or professional education focused on medicine and infectious disease. Students interested in research and thesis work should apply to the Master of Science in Biotechnology Program.

The Infectious Disease Track in the Biomedical Sciences MS program requires a minimum of 33 credit hours of courses that includes a capstone experience. Students take 18 credit hours of required core courses, 12 credit hours of elective courses relevant to infectious disease, a capstone project focusing on infectious disease and an oral comprehensive exam.

**Total Credit Hours Required: 33 Credit Hours Minimum beyond the Bachelor's Degree**

## **Required Courses: 18 Credit Hours**

- ZOO 6737 – Clinically Oriented Human Anatomy (4 Credit Hours)
- PCB 6595 – Regulation of Gene Expression (3 Credit Hours)
- MCB 6226 – Molecular Diagnostics (3 Credit Hours)
- MCB 5208 – Cellular Microbiology: Host-Pathogen Interactions (3 Credit Hours)
- BSC 6407C – Laboratory Methods in Molecular Biology (3 Credit Hours) OR BSC 5418 – Tissue Engineering (3 Credit Hours)
- MCB 6938 – Seminar (1 Credit Hour) (to be repeated by all students) OR MCB 6314– Industrial Perspectives Seminar (1 Credit Hour)

## **Elective Courses: 12 Credit Hours**

Non-thesis students take 12 credit hours of electives with 6 credit hours from the Biomedical Specialization and 6 credit hours from the Microbiology Specialization.

- PCB 5527 - Genetic Engineering and Biotechnology 3 Credit Hours)
- MCB 5205 - Infectious Processes (3 Credit Hours)
- MCB 5505 - Molecular Virology (3 Credit Hours)
- MCB 6417C - Microbial Metabolism (3 Credit Hours)
- MCB 5932 - Current Topics in Molecular Biology (VAR Credit Hours)
- MCB 5415 - Cellular Metabolism (3 Credit Hours)
- MCB 5209 - Microbial Stress Response (3 Credit Hours)
- PCB 6595 - Regulation of Gene Expression (3 Credit Hours)
- PCB 5235 - Molecular Immunology (3 Credit Hours)
- MCB 5225 - Molecular Biology of Disease (3 Credit Hours)
- PCB 5238 - Immunobiology (3 Credit Hours)
- PCB 5275 - Signal Transduction Mechanics (3 Credit Hours)

Other elective courses must be approved by the Program Coordinator.

### **Capstone: 3 Credit Hours**

An in-depth current literature research report on a relevant subject will be required for each student. The student will select a faculty adviser to chair a faculty committee of two members for evaluation of the report. *See additional information below on page 15.*

### **Comprehensive Examination**

Non-thesis students must pass an oral comprehensive exam to qualify for the Master of Science degree.

The comprehensive examination will be conducted during the capstone defense and will be administered by the capstone committee. *See additional information below on page 15.*

Please visit the [Graduate Catalog](#) to see the current curriculum for our program.

# MS Biomedical Sciences: Metabolic and Cardiovascular Sciences Track Program Curriculum

## Track Description

The Metabolic and Cardiovascular Sciences Track in the Master of Science in Biomedical Sciences Program is a non-thesis plan of study for students who want to further their knowledge in the metabolic and cardiovascular sciences field and who may pursue doctoral training or professional education focused on medicine and metabolic and cardiovascular sciences. Students interested in research and thesis work should apply to the Master of Science in Biotechnology Program.

The Metabolic and Cardiovascular Sciences Track in the Master of Science in Biomedical Sciences Program is a non-thesis plan of study for students who want to further their knowledge in the metabolic and cardiovascular sciences field and who may pursue doctoral training or professional education focused on medicine and metabolic and cardiovascular sciences. Students interested in research and thesis work should apply to the Master of Science in Biotechnology Program.

**Total Credit Hours Required: 33 Credit Hours Minimum beyond the Bachelor's Degree**

## **Required Courses: 18 Credit Hours**

- ZOO 6737 – Clinically Oriented Human Anatomy (4 Credit Hours)
- PCB 6595 – Regulation of Gene Expression (3 Credit Hours)
- MCB 6226 – Molecular Diagnostics (3 Credit Hours)
- PCB 5815 – Molecular Aspects of Obesity, Diabetes and Metabolism (3 Credit Hours)
- BSC 6407C – Laboratory Methods in Molecular Biology (3 Credit Hours) OR BSC 5418 – Tissue Engineering (3 Credit Hours)
- MCB 6938 – Seminar (1 Credit Hour) (to be repeated by all students) OR MCB 6314 – Industrial Perspectives Seminar (1 Credit Hour)

## **Elective Courses: 12 Credit Hours**

Non-thesis students take 12 credit hours of electives with 6 credit hours from the Biomedical Specialization and 6 credit hours from the Microbiology Specialization.

- MCB 5415 - Cellular Metabolism (3 Credit Hours)
- PCB 5834C - Advanced Human Physiology (4 Credit Hours)
- PCB 5265 - Stem Cell Biology (3 Credit Hours)
- CHM 5305 - Applied Biological Chemistry (3 Credit Hours)
- BSC 5436 - Biomedical Informatics : Structure Analysis (3 Credit Hours)
- BSC 5418 - Tissue Engineering (3 Credit Hours)
- PCB 5709C - Laboratory Virtual Simulations in Physiology (3 Credit Hours)
- MCB 5225 - Molecular Biology of Disease (3 Credit Hours)
- PET 6366 - Exercise, Nutrition and Weight Control (3 Credit Hours)
- PET 6388 - Cardiovascular Physiology (3 Credit Hours)

Other elective courses must be approved by the Program Coordinator.

### **Capstone: 3 Credit Hours**

An in-depth current literature research report on a relevant subject will be required for each student. The student will select a faculty adviser to chair a faculty committee of two members for evaluation of the report. *See additional information below on page 15.*

### **Comprehensive Examination**

Non-thesis students must pass an oral comprehensive exam to qualify for the Master of Science degree.

The comprehensive examination will be conducted during the capstone defense and will be administered by the capstone committee. *See additional information below on page 15.*

Please visit the [Graduate Catalog](#) to see the current curriculum for our program.

# MS Biomedical Sciences: Neuroscience Track Program Curriculum

## Track Description

The Neuroscience Track in the Master of Science in Biomedical Sciences Program is a non-thesis plan of study for students who want to further their knowledge in the neuroscience field and who may pursue doctoral training or professional education focused on medicine and neuroscience. Students interested in research and thesis work should apply to the Master of Science in Biotechnology Program.

The Neuroscience Track in the Biomedical Sciences MS program requires a minimum of 33 credit hours of courses that includes a capstone experience. Students take 18 credit hours of required core courses, 12 credit hours of elective courses relevant to neuroscience, a capstone project focusing on neuroscience and an oral comprehensive exam.

**Total Credit Hours Required: 33 Credit Hours Minimum beyond the Bachelor's Degree**

## **Required Courses: 18 Credit Hours**

- ZOO 6737 – Clinically Oriented Human Anatomy (4 Credit Hours)
- PCB 6595 – Regulation of Gene Expression (3 Credit Hours)
- MCB 6226 – Molecular Diagnostics (3 Credit Hours)
- PCB 5837 – Cellular and Molecular Neuroscience (3 Credit Hours)
- BSC 6407C – Laboratory Methods in Molecular Biology (3 Credit Hours) OR BSC 5418 – Tissue Engineering (3 Credit Hours)
- MCB 6938 – Seminar (1 Credit Hour) (to be repeated by all students) OR MCB 6314 – Industrial Perspectives Seminar (1 Credit Hour)

## **Elective Courses: 12 Credit Hours**

Non-thesis students take 12 credit hours of electives with 6 credit hours from the Biomedical Specialization and 6 credit hours from the Microbiology Specialization.

- SPA 6417 - Cognitive/Communicative Disorders (3 Credit Hours)
- PCB 5275 - Signal Transduction Mechanics (3 Credit Hours)
- ZOO 5748C - Clinical Neuroanatomy (5 Credit Hours)
- ZOO 5749C - Clinical Neuroscience (5 Credit Hours)
- CAP 6616 - Neuroevolution and Generative and Developmental Systems (3 Credit Hours)
- PCB 5838 - Cellular and Molecular Basis of Brain Functions (3 Credit Hours)
- BSC 5418 - Tissue Engineering (3 Credit Hours)
- PCB 5709C - Laboratory Virtual Simulations in Physiology (3 Credit Hours)
- MCB 5225 - Molecular Biology of Disease (3 Credit Hours)
- PCB 5834C - Advanced Human Physiology (4 Credit Hours)
- EXP 5254 - Human Factors and Aging (3 Credit Hours)
- IDS 6916 - Simulation Research Methods and Practicum (3 Credit Hours)
- EXP 5208 - Sensation and Perception (3 Credit Hours)
- PSB 5005 - Physiological Psychology (3 Credit Hours)
- EXP 6116 - Visual Performance (3 Credit Hours)
- EXP 6506 - Human Cognition and Learning (3 Credit Hours)
- PSB 6348 - The Neuroanatomical Basis of Psychological Function (3 Credit Hours)
- PSB 6328 - Psychophysiology (3 Credit Hours)
- PSB 6352 - Neuroimaging Design and Analysis Methods (3 Credit Hours)

Other elective courses must be approved by the Program Coordinator.

### **Capstone: 3 Credit Hours**

An in-depth current literature research report on a relevant subject will be required for each student. The student will select a faculty adviser to chair a faculty committee of two members for evaluation of the report. *See additional information below on page 15.*

### **Comprehensive Examination**

Non-thesis students must pass an oral comprehensive exam to qualify for the Master of Science degree.

The comprehensive examination will be conducted during the capstone defense and will be administered by the capstone committee. *See additional information below on page 15.*

Please visit the [Graduate Catalog](#) to see the current curriculum for our program.

# Capstone

The capstone project is an in-depth literature review of a topic (relevant to the capstone chair's research area) selected jointly by the student and the capstone project mentor. The literature review should be designed and written with the possibility to be published as a mini-review article.

An oral presentation on the written capstone report will be used as a final examination. A majority of the program faculty must be present for the final examination. The report should be submitted for consideration of publication as a review article in appropriate journals.

- The student will select a faculty adviser to chair a faculty committee for evaluation of the report. Students are encouraged to contact faculty as early as possible in order to identify a faculty whose research focus complements the student's interest. Students must submit a signed Capstone Committee form to the Program Office for Dr. Saleh Naser's approval.
- The student and the mentor should select one additional faculty member to serve on the capstone evaluation committee. A second faculty member is optional.
- The student should develop a capstone topic in consultation with the Capstone Advisor and submit a project outline/draft to the Committee for approval.
- Over the semester, students will meet with their assigned mentor during office hours as needed to complete a literature search and to prepare for the review paper and presentation.

## Capstone Registration

- **MCB 6026 - Molecular Biology and Microbiology Capstone 3 Credit Hours (minimum)**

Once you are ready to defend your Capstone project, you must register for the capstone course (MCB 6026) for three credit hours. It is important that you register for the capstone course with the intention of completing the project at the end of the semester. Faculty members are discouraged from giving "I" incomplete grade for the capstone course.

## Capstone Report

The capstone project requires a written report (in a format of a mini-review manuscript), and a presentation (project defense) in front of the capstone committee. Students may ask for advice and guidance from the project mentor/chair.

The average capstone report ranges from 10-15 single-space page in a manuscript format with proper citations. The capstone report must be checked using [iThenticate.com](http://iThenticate.com) by the committee chair before the report is shared with the committee.

The student is required to submit the finalized capstone report to the Committee and the Program Office one week before the scheduled capstone examination date.

Before graduation, the report should be submitted for consideration of publication as a review article in appropriate journals.

## Capstone Defense/Comprehensive Examination

Non-thesis students must pass an oral comprehensive exam and capstone defense to qualify for the Master of Science degree.

The capstone defense and comprehensive exam evaluation is designed to evaluate the student knowledge and understanding of the project and other relevant subjects in the field. Questions asked by the capstone committee to evaluate the student competent in the field will satisfy the requirement of the comprehensive exam during the

capstone defense. The oral presentation in a form of 30-40 min seminar should be followed by questions and discussion. The student will be evaluated on performance in all three sections (written report, oral presentation and ability to answer questions).

**Written:** Creativity / Literature data / Factual Knowledge / Ability to analyze data and form conclusion

**Oral:** Communication Skills / Presentation Ability to present data / Follow analysis /Ability to answer questions to demonstrate command of knowledge

Should the student fail, a second opportunity will be provided within 2 weeks of the first attempt. A second failure will result in "U" in the course and dismissal from the program.

No visitors are allowed during the capstone defense.

Please visit the [Graduate Catalog](#) to see the current curriculum for our program.

## Timeline for Completion

MS graduate students will complete this program in 1 year and 1 semester. Students may be approved for an accelerated schedule to complete the MS program in 1 year. Students are required to meet with the MS Program Coordinator to create a Plan of Study.

## Teaching Requirement

### **Classroom Laboratory Assistants Requirements**

Students without significant prior teaching experience, such as, but not limited to, a minimum of a year in secondary schools or colleges, are required to serve as Classroom Laboratory Assistants (For a minimum of one semester). Students must contact Instructor Gregory Weigel to obtain a classroom assignment. Once you fulfilled this requirement, you must submit your signed MS Biomed Classroom Requirement form to the Program Office.

Classroom Laboratory Assistants may be assigned as instructors of record for undergraduate courses, as assistants to the faculty in their teaching responsibilities or in other roles directly related to credit-earning formal course instruction, or as tutors for students on specific course-related material or general skills. Classroom Laboratory Assistants assisting members of the faculty may have responsibilities that include assisting in laboratory courses, grading, and preparation of course materials, or performing clerical tasks associated with course instruction.

### **Overall Expectations**

- Professionalism with time, attire and interaction with students and staff
- Communication is very important.
- Teaching labs rely on your assistance
- Proper PPE (Personal Protective Equipment) must be worn in labs.
- Proper training on equipment is necessary before use.

*The program will pursue, to the fullest of our policy, any complaint of unacceptable behavior or misconduct. This may end in placing students on probation, or dismissal from the program.*

## Lab and Safety Training

All Graduate Students are required to complete the following Lab and Safety Training Courses below during Orientation week. [ehs.ucf.edu/](https://ehs.ucf.edu/)

- EHS102 Biological Safety Orientation Online
- EHS140 Blood borne Pathogens Online
- EHS201 Laboratory Safety Orientation Online
- EHS301 Radiation Safety Orientation Online
- EHS116 Practical Session

## Research Shadowing (Optional)

Students are encouraged to discuss with their capstone mentor the possibility of joining the lab for research shadowing of other graduate students. Acquired lab skills should assist students with the capstone project and with future endeavors.

## BSBS Policy Statement on Academic Integrity

Integrity is a critical foundation of science and scientific training. As such, any incident of cheating, plagiarism, or other forms of academic misconduct at any time by any student in the programs, may result in dismissal from the program. All graduate programs organized in the Burnett School of Biomedical Sciences hold students to the highest standards of academic conduct and scientific conduct.

There are many forms of misconduct, both in academics and in science. In research, these primarily include the falsification or fabrication of data during one's research project, or the plagiarism of text, figures or data from someone else's work (such as a published or on-line paper). These examples of misconduct, as well as other examples will be discussed in the Practice in Biomedical Science course or other courses.

In academics, the unauthorized use of electronic devices during exams, or any other means to gain an advantage during an examination will be considered academic misconduct. Copying another student's work who is currently taking a course or previously took a course will also be considered academic misconduct. Both the student who supplied such material and the student who attempts to use such material are both in violation of the standards.

Many other examples of misconduct exist and common sense should dictate to the student what is and is not permissible. If you question whether an action could be considered misconduct (academic or scientific) – ask the program coordinator or BSBS director. **Ignorance of what constitutes misconduct is not an excuse.**

**All first year graduate students are required to sign the Burnett School of Biomedical Sciences Academic Integrity Program Form before the 1<sup>st</sup> day of Fall classes. This form addresses academic integrity and the consequences to students for academic misconduct.**

## **BSBS Graduate Disciplinary Policy**

The graduate program reserves the right to carry out full disciplinary action against student misconduct. Any documented case of scientific or academic misconduct is the basis for immediate dismissal from the program. The incident(s) will be reported to the student's advisor, the graduate committee, and the UCF Office of Student Conduct. After reviewing the case, the Director of the Biomedical Sciences Graduate program will have the authority to recommend dismissal of the student from the graduate program.

## **BSBS Graduate Policy Statement on Enforcement of Programmatic Requirements**

Students who fail to complete programmatic requirements (e.g., program forms, academic integrity workshops) by the specified deadlines\* may be placed on academic probation. If this occurs, the student will be given specific written notice of the terms of the probation and will have one semester to correct the deficiency. If the deficiency is corrected, then the probation will be lifted. If the student fails to correct the deficiencies within the specified time period (1 semester), then the student will not be permitted to register for classes and may be subjected to dismissal from the program.

All official communications regarding probation must include the Program Associate Director and the Associate Dean of Graduate Studies.

## **BSBS Graduate Grievance Procedures**

If significant issues arise between a student and their mentor that cannot be resolved amicably, the student should first consult with the Program Coordinator and secondly with the Program Director to resolve the issues. If these first steps do not resolve the conflict, the student has the right to request a thesis committee meeting to attempt to resolve such issues.

This request for a meeting of the full committee cannot be overruled by the chair (mentor) and the meeting should be chaired by a thesis committee member and not the mentor. If sought by the student this meeting should also include the Program Coordinator. The Program Director and Associate Director should also be informed of the meeting and have the right to attend to help resolve the issue(s).

## **Financial Support**

Non-thesis master's students in this program are not eligible to receive a Graduate Teaching Assistantship (GTA) or tuition remission from the program.

If you are interested in applying for loans or externally funded need-based awards, visit the Office of Student Financial Assistance website at [finaid.ucf.edu/](http://finaid.ucf.edu/) and complete the Free Application for Federal Student Aid (FAFSA), which is available January 1 each year.

For additional information about funding for graduate school, please visit [Funding for Graduate School](#).

## **Office of Student Financial Assistance**

The mission of the Office of Student Financial Assistance is to provide UCF students and the University Community comprehensive quality service by offering options for financial assistance and efficient delivery of aid. Financial aid counseling is available by appointment. Due to confidentiality, counseling by phone and email is limited. Student Financial Assistance, a unit of Student, Development and Enrollment Services, is dedicated to the attainment of UCF's mission and goals. For detailed information, visit their website at <https://finaid.ucf.edu/>.

## **Student Account Services**

The mission of the Student Account Services office is to serve the students who attend our university by billing fees, campus housing, and other university charges accurately and efficiently, and collecting and crediting tuition revenue. We are here to provide students with quality service and information by maintaining accurate financial records and communicating policies and information to students concerning their accounts. For more information, please visit: <https://studentaccounts.ucf.edu/>

# Other Program Requirements

## **Academic Integrity - Ethics/Responsible Conduct of Research Workshops**

The College of Graduate Studies and the Office of Research and Commercialization offer a series of workshops to enable graduate students to fulfill our programs two-workshop requirement in ethics and responsible conduct of research. **All Master's students are required to complete at least one CORE workshop and at least one other CORE or ELECTIVE workshop, for a total of two workshops.**

CORE and ELECTIVE workshops are offered every Fall and Spring semester. There will be a limited offering of sessions during the Summer semesters. The ethics/responsible conduct of research (RCR) workshops are provided at no cost and are open to all UCF graduate students and postdoctoral associates.

<https://graduate.ucf.edu/pathways-to-success/>

**Note: You must complete this requirement by the end of Summer (1<sup>st</sup> year).**

## **Professional Seminars, Program Colloquium and Symposia**

Students are strongly encouraged to attend departmental seminars including the weekly BSBS Friday seminar, the research divisions meetings, and guest seminars. **Attending at the annual BSBS colloquium and symposia is required.**

Each Fall and Spring, graduate students have the opportunity to attend seminars given by distinguished speakers who lectures about their research. The seminars offer a wide variety of diverse topics and are an important part of your graduate experience. **Graduate students are expected to attend these events.**

Students should take opportunities to present a poster or a topic of research at a conference. To obtain financial support to present at a conference (other than through your program) or to engage in comparable creative activity at a professional meeting, visit the Graduate Travel Fellowship section at [graduate.ucf.edu/](https://graduate.ucf.edu/). For additional information, please call (407) 823-2766.

For information about the Council of Southern Graduate Schools (CSGS) thesis and dissertation awards, see their website: [csgs.org/](https://csgs.org/) > Awards.

## **Attendance Requirement**

Students are expected to attend all classes, lectures, seminars and complete all research and laboratory assignments by the deadlines specified. **Supervisors must be notified if you are going to be absent from the research lab or the teaching lab.**

## **Program of Study**

A Program of Study is a listing of course work agreed to by the student and the degree program specifying course degree requirements. Students are required develop a Program of Study in consultation with the faculty Advisor and Program Coordinator, Dr. Saleh Naser.

**The Program of Study must be completed, signed and submitted to the Program Office by the Spring Semester of the first year. The Program Office will submit your form to the College of Graduate Studies. Please email program forms to [BSBSGradForms@ucf.edu](mailto:BSBSGradForms@ucf.edu).**

**Note: Students wanting to complete the MS Biomedical Sciences program in 1 year must complete a Program of Study and meet with the Program Office before the Add/Drop Deadline for the Fall semester of the 1<sup>st</sup> year.**

**Graduate Students are expected to:**

- Complete the Environmental Health & Safety workshops.
- Demonstrate dedication to coursework and teaching responsibilities.
- Maintain satisfactory academic performance - Minimum 3.0 GPA.
- Select a Capstone Chair and Committee and complete a Capstone Project.
- Complete Academic Integrity Training.
- Submit all forms to the program office.

**6000 Level Courses in a Program of Study**

A minimum of fifteen credit hours (including thesis hours) of a Program of Study must be in 6000-level courses, which are designed for graduate students. The University Graduate Council must approve any exceptions to this requirement. (See [Graduate Catalog](#))

- At least half of the credit hours used to meet program requirements must be at the 6000 level.

**New graduate students from UCF that completed Molecular Biotechnology and Biotech Lab methods & other program courses as undergraduates (4000 level) cannot register for these courses again at 5000 level. Graduate students are required to meet with the program office to review alternative course selection(s).**

**Grades**

**Grades of every student will be evaluated after each semester. A Grade point average of 3.0 is required.**

See Policy Below:

- The program will allow a maximum of two “C” grades in the program.
- Any student who receives a grade below a C grade in any course will automatically be dismissed from the program.
- If a student’s GPA falls below a 3.0 but remains above a 2.0, the student will automatically be placed on academic probation by the College of Graduate Studies. Students will receive a notice of probation at the beginning of the probation period, and the notice of probation will be imprinted on the student’s academic transcript.

Students will have up to 9 credit hours (one-semester) of course work (graded A-F) to attain a graduate status GPA of 3.0 or higher, at which point they will be removed from probationary status. If the student has not attained a graduate status GPA of 3.0 by the end of the probationary nine credit hours, he/she will be dismissed from the university.

- Any student who receives two consecutive “U” grades, will automatically be dismissed from the program.
- Any student who receives a GPA below 2.0, will automatically be dismissed from the program.
- Any student found guilty of scientific or academic misconduct will be immediately dismissed from the program
- International students placed on probationary status will be sent to the UCF Global for advisement regarding the immigration status implications of this action.

## **Review of Academic Performance**

The primary responsibility for monitoring academic performance standards rests with the degree or certificate program. However, the academic college and the UCF College of Graduate Studies will monitor a student's progress and may dismiss any student if performance standards or academic progress as specified by the program, college or university are not maintained.

Satisfactory academic performance in a program includes maintaining at least a 3.0 graduate status GPA (defined below) in all graduate work taken since admission into the program. Satisfactory performance also involves maintaining the standards of academic progress and professional integrity expected in a particular discipline or program. Failure to maintain these standards may result in dismissal of the student from the program.

## **Graduate Status - GPA**

A graduate status GPA will be calculated based on the graduate courses taken at UCF since admission into each degree or certificate program. The graduate status GPA is used to monitor the student's progress in the program. The university requires that students must maintain a graduate status GPA of at least 3.0 or higher in order to maintain regular graduate student status, receive financial assistance, and qualify for graduation. This GPA requirement cannot be waived.

Please note that the graduate status GPA does not carry forward from one program to another or from non-degree status into a degree or certificate program.

## **Graduate Studies GPS**

The Graduate Studies GPS is an advisement tool you can use to plan your academic career, check your progress and assist you in registering in upcoming semesters. To access your report, navigate to the student portal at [my.ucf.edu](http://my.ucf.edu) enter your PID, then go down to Main Menu>Self Service>Student Center. At the drop down box, select "Graduate Plan of Study", then hit the right-facing arrow to process your report.

## **Directed Independent Study Courses**

A maximum of three courses may be taken as independent study, for a total of no more than six semester hours. (Program Approval is needed for Independent Study)

## **Transfer Credit Policy**

Work taken at an accredited institution BEFORE a student is given graduate status at UCF may be transferred into the student's program of study.

No more than **9 semester hours** of graduate credit(s) (5000 level or more) may be transferred into the graduate program from UCF post-baccalaureate work or from other accredited institutions. The program accepts up to 9 hours of graduate course work taken at UCF while an undergraduate student as part of an undergraduate program of study. (Program approval needed to accept additional courses.)

Acceptance of such courses into a graduate program of study will be recommended by the Major Advisor, and must be approved by the Graduate Committee. This does not apply to undergraduate course work taken while an undergraduate student.

## **Graduate Program Registration**

Graduate students will work with the Program Graduate Service Office to register for courses each semester. Students must email [BSBSGradAppts@ucf.edu](mailto:BSBSGradAppts@ucf.edu) to schedule an appointment or email [BSBSGradRegistration@ucf.edu](mailto:BSBSGradRegistration@ucf.edu) for registration assistance.

## **Graduate Program Leave Policy**

Non-thesis student must discuss their leave with the Program Coordinator, then complete the graduate leave of absence form, and receive program approval before going on leave. Failure to comply with the program leave of absence policy may lead to dismissal from the program. **The form must be approved two weeks in advance of**

requested date(s).

### **Independent Learning**

In the final semester of study, non-thesis students will complete a capstone course that requires an in-depth current literature research report on a relevant subject, which will serve as the independent learning experience. Before graduation, the report should be submitted for consideration of publication as a review article in appropriate journals. The student will select a faculty adviser to chair a faculty committee of two members for evaluation of the report.

### **Changing Your E-mail, Address or Phone Number**

It is important to remember that all official university communication will be sent to your e-mail address or physical address on file. Students are responsible for updating their e-mail, physical address, and phone number. This can be done online through myUCF or by submitting a written request to the Student Services office.

### **Graduation Application – File Your Intent**

You must first be approved to graduate by your committee and the Program Office before filing an intent to graduate for the semester you are approved. Log onto <https://my.ucf.edu/> and follow this navigation: Student Self Service> Student Center> other academics (drop down menu) > Intent to Graduate> Apply.

Please be aware that if the *Intent to Graduate* is submitted after the term deadline, you will **no longer be eligible** to participate in the Commencement Ceremony for that semester and your name **will not appear** in the list of degree candidates within the associated Commencement Program.

### **Schedule Graduation Appointment with the BSBS Program Office**

All graduate students are required to meet with the Program Office one semester prior to graduation to review their program specific requirements and degree audit. Please email [BSBSGradAppts@ucf.edu](mailto:BSBSGradAppts@ucf.edu) to schedule an appointment.

### **Diploma**

Your diploma will be mailed approximately 6 to 10 weeks after the commencement ceremony to the address indicated on your Intent to Graduate form. Students who have changed their address should contact the College of Graduate Studies at [graddegr@ucf.edu](mailto:graddegr@ucf.edu). Questions can be directed to the College of Graduate Studies at 407-823-4132.

Diplomas cannot be released if you have a nonacademic hold. It is your responsibility to resolve holds as quickly as possible.

[Student Account Services](#) and the [Registrar's Office](#) will notify students of any outstanding financial obligations prior to the Commencement ceremony. All financial obligations must be met in order to receive a diploma and official transcripts. Transcripts that reflect the degree earned will be available approximately 4-6 weeks after the ceremony and requests may be made through the [Registrar's Office](#).

### **Commencement Ceremony Information**

Please visit the College of Graduate Studies website for Commencement information (tickets, event schedule, Simulcast time and locations). <https://commencement.ucf.edu>.

### **Cap & Gown Order**

Candidates are required to wear official regalia available exclusively through the [UCF Bookstores](#) (407-882-0364) and online through [Herff Jones](#). All rented items are due back by **5pm** on Graduation Day.

**Please inform your faculty advisor of your Graduation Ceremony date and time so they can attend this event with you. Also notify the Program Office if you will be attending.**

# Graduate Student Associations

## **Biomedical Sciences Graduate Student Association**

BSGSA is a registered student organization at the University of Central Florida that serves as the official advocate and representative for graduate students in the Biomedical Sciences program. We provide a relaxing environment where graduate students can have fun while discussing relevant issues that directly affect our program.

BSGSA also helps welcome incoming students and organizes meetings aimed to help students overcome the major milestones of the Masters and PhD programs. Recently, we have been working closely with the Graduate Student Association and GSA Advisory Board to affect policy changes relating to graduate students as a whole. **Parent Organization:** *Office of Student Involvement*

The goals of BSGSA include:

1. To provide a forum for discussion of issues relevant to graduate students within the Burnett School of Biomedical Science and others in the university community.
2. To organize, promote and conduct activities beneficial to Biomedical Sciences graduate students and enhance their graduate education at the University of Central Florida.

Contact: [BSBSGSA@gmail.com](mailto:BSBSGSA@gmail.com)

## **UCF Graduate Student Organization**

The Graduate Student Association (GSA) is UCF's graduate organization committed to enrich graduate students' personal, educational and professional experience. The Purpose of GSA is to support a culture that continually seeks out and identifies needs common throughout the graduate community, increase visibility of graduate student excellence, expertise, and professionalism through collaboration with other university partners, and demonstrate initiative, vision, and leadership in the development and execution of programming and professional development opportunities. To learn more or get involved, please visit [facebook.com/groups/UCFgsa/](https://facebook.com/groups/UCFgsa/). Contact Information: [gsa@ucf.edu](mailto:gsa@ucf.edu)

# Professional Development

## **Pathways to Success Workshops**

Coordinated by the College of Graduate Studies, the Pathways to Success program offers free development opportunities for graduate students including workshops in academic integrity, graduate grantsmanship, graduate teaching, personal development, professional development, and research. For more information and how to register, please visit [graduate.ucf.edu/pathways-to-success/](http://graduate.ucf.edu/pathways-to-success/).

## **Graduate Research Forum**

The Graduate Research Forum will feature poster displays representing UCF's diverse colleges and disciplines. It is an opportunity for students to showcase their research and creative projects and to receive valuable feedback from faculty judges. Awards for best poster presentation in each category will be given and all participants will receive recognition.

The College of Graduate Studies and the Graduate Student Association invite all UCF students, community, and employers to attend the Graduate Research Forum. For more information, contact [researchweek@ucf.edu](mailto:researchweek@ucf.edu).

## **Graduate Excellence Awards**

Each year, the College of Graduate Studies offers graduate students who strive for academic and professional excellence the opportunity to be recognized for their work. The award categories include the following:

**Award for Excellence by a Graduate Teaching Assistant** – This award is for students who provide teaching support and assistance under the direction of a lead teacher. This award focuses on the extent and quality of the assistance provided by the student to the lead instructor and the students in the class. (Not intended for students who are instructor of record)

**Award for Excellence in Graduate Student Teaching** – This award is for students who serve as instructors of record and have independent classroom responsibilities. The focus of this award is on the quality of the student's teaching and the academic contributions of those activities.

For the nomination process and eligibility criteria, see the College of Graduate Studies website [graduate.ucf.edu/awards-and-recognition/](http://graduate.ucf.edu/awards-and-recognition/).

## **International Advising**

International Affairs and Global Strategies (IAGS) serves as a source of information, advocacy, and support to prospective, new and current international students and scholars at the University of Central Florida. IAGS provides students and scholars with immigration advising and assistance in adjusting to new academic and cultural environments.

### **UCF Global**

Website - <http://global.ucf.edu/>  
Address: 4356 Scorpius St, Orlando, FL 32816  
Building GB 139  
Orlando, FL 32816-0130  
Phone: (407)823-2337 | Fax: (407)823-2526

## **Forms**

**All required forms must be submitted to the program office before your degree will be certified (No Exceptions)**

- ❖ Teaching Requirement
  - ❖ Academic Integrity
  - ❖ Capstone & Comprehensive Exam Forms
  - ❖ Final Capstone Report
  - ❖ Program Survey
- 
- [Burnett School of Biomedical Sciences Program Forms](#)
  - [College of Graduate Studies Forms and References](#)  
A complete listing of general forms and references for graduate students, with direct links, may be found here.
  - [Graduate Petition Form](#)  
When unusual situations arise, petitions for exceptions to policy may be requested by the student. Depending on the type of appeal, the student should contact his/her program adviser to begin the petition process.
  - [Traveling Scholar Form](#)  
If a student would like to take advantage of special resources available on another campus but not available on the home campus; for example, special course offerings, research opportunities, unique laboratories and library collections, this form must be completed and approved.

## Useful Links

- [Biomedical Sciences MS](#)
- [Burnett School of Biomedical Sciences](#)
- [College of Graduate Studies](#)
- [Academic Calendar](#)
- [Bookstore](#)
- [Campus Map](#)
- [Computer Labs](#)
- [Counseling Center](#)
- [Financial Assistance](#)
- [Golden Rule Student Handbook](#)
- [Graduate Catalog](#)
- [Graduate Student Association](#)
- [Graduate Student Center](#)
- [Housing and Residence Life](#)
- [Housing, off campus](#)
- [Knights Email](#)
- [Learning Online](#)
- [Library](#)
- [NID Help](#)
- [Pathways to Success](#)
- [Recreation and Wellness Center](#)
- [Register for Classes](#)
- [Shuttles Parking Services](#)
- [Student Health Services](#)
- [Thesis and Dissertation \(ETD\)](#)
- [UCF Global](#)
- [UCF IT](#)
- [University Writing Center](#)

### **Fall 2019 Academic Calendar**

The Registrar's Office manages the official Academic Calendar, which contains the dates and times for all registration periods, application deadlines, holidays, special events, and more. You can filter the calendar, save it, or subscribe to it!

<https://calendar.ucf.edu/2019/fall>

### **Knights E-mail Requirement for Thesis**

*All official university student communication must be made through Knights E-mail.* This requirement includes all thesis communications, as well as documents submitted for format review. *Documents not submitted from a Knights E-mail account will be returned to the student without being reviewed.*

# Graduate Program Faculty

## FACULTY AFFILIATIONS

DR. KENNETH ALEXANDER, NEMOURS CHILDREN'S HOSPITAL  
DR. SALVADOR ALMAGRO-MORENO, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. DEBORAH ALTOMARE, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. CLAUDIA ANDL, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. JACK BALLANTYNE, DEPARTMENT OF CHEMISTRY  
DR. SHAZIA BEG, INTERNAL MEDICINE  
DR. ELLA BOSSY-WETZEL, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. ELIZABETH BRISBOIS, DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING  
DR. JONATHAN CARANTO, DEPARTMENT OF CHEMISTRY  
DR. ANALIA CASTIGLIONI, MEDICAL EDUCATION  
DR. XINQING "KARL" CHAI, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. DEBOPAM CHAKRABARTI, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. RATNA CHAKRABARTI, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. BO CHEN, DEPARTMENT OF PHYSICS  
DR. LIMEI CHEN, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. ZIXI "JACK" CHENG, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. KARIN CHUMBIMUNI-TORRES, DEPARTMENT OF CHEMISTRY  
DR. MELANIE COATHUP, INTERNAL MEDICINE  
DR. ALEXANDER COLE, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. AMY COLE, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. ALICJA COPIK, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. KAITLYN CRAWFORD, DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING  
DR. VICTOR DAVIDSON, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. WILLIAM DECAMPLI, ORLANDO HEALTH  
DR. NYLA DIL, MEDICAL EDUCATION  
DR. DENNIS DREHNER, NEMOURS CHILDREN'S HOSPITAL  
DR. STEVEN EBERT, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. CRISTINA FERNANDEZ-VALLE, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. TERRI FINKEL, NEMOURS CHILDREN'S HOSPITAL  
DR. STEPHEN FLORCZYK, DEPARTMENT OF ENGINEERING  
DR. ANNA FORSMAN, DEPARTMENT OF BIOLOGY  
DR. JANE GIBSON, MEDICAL EDUCATION  
DR. TIMOTHY GILBERTSON, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. XIUFANG GUO, DEPARTMENT OF NANOSCIENCE

DR. JAMES HICKMAN, NANOSCIENCE TECHNOLOGY CENTER  
DR. ROBERT HINES, INTERNAL MEDICINE  
DR. QUN "TREEN" HUO, NANOSCIENCE TECHNOLOGY CENTER  
DR. MOLLIE JEWETT, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. TRAVIS JEWETT, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. HYERAN KANG, NANOSCIENCE  
DR. ANNETTE KHALED, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. BRIAN KIM, DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING  
DR. YOON-SEONG KIM, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. STEPHEN KING, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. DMITRY KOLPASHCHIKOV, DEPARTMENT OF CHEMISTRY  
DR. STEPHEN LAMBERT, MEDICAL EDUCATION  
DR. WOO HYOUNG LEE, DEPARTMENT OF ENGINEERING & COMPUTER SCIENCE  
DR. XIAOMAN "SHAWN" LI, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. HANSEN MANSY, DEPARTMENT OF MECHANICAL & AEROSPACE ENGINEERING  
DR. MICHAL MASTERNAK, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. KAI MCKINSTRY, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. SEAN MOORE, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. SALEH NASER, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. GRIFFITH PARKS, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. SAMPATH PARTHASARATHY, BURNETT SCHOOL OF BIOMEDICAL SCIENCE  
DR. MUTHU PERIASAMY, COLLEGE OF MEDICINE  
DR. OTTO PHANSTIEL, COLLEGE OF MEDICINE  
DR. PETER POTREBKO, FLORIDA HOSPITAL  
DR. KAMAL POURMOGHADAM, THE HEART CENTER AT ARNOLD PALMER  
DR. KYLE ROHDE, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. EDWARD ROSS, INTERNAL MEDICINE  
DR. HERVE ROY, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. SUHA SALEH, COLLEGE OF HEALTH AND PUBLIC AFFAIRS  
DR. SWADESHMUKUL SANTRA, NANOSCIENCE TECHNOLOGY CENTER  
DR. WILLIAM SELF, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. SHADAB SIDDIQI, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. DINENDER SINGLA, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. JULIA SOULAKOVA, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. AMBER SOUTHWELL, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. ROBERT STEWARD, DEPARTMENT OF ENGINEERING  
DR. TARA STRUTT, BURNETT SCHOOL OF BIOMEDICAL SCIENCES

DR. KIMINOBU SUGAYA, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. LINDSAY TALIAFERRO, INTERNAL MEDICINE  
DR. SUREN TATULIAN, PHYSICS  
DR. KENNETH TETER, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. JUSTINE TIGNO-ARANJUEZ, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. LAURENCE VON KALM, DEPARTMENT OF BIOLOGY  
DR. WILLIAM WARREN, SANOFI PASTEUR VAXDESIGN  
DR. BRADLEY WILLENBERG, INTERNAL MEDICINE  
DR. XUGANG XIA, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. SHIBU YOOSEPH, DEPARTMENT OF COMPUTER SCIENCE  
DR. YU YUAN, DEPARTMENT OF CHEMISTRY  
DR. ANTONIS ZERVOS, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. SHAOJIE ZHANG, DEPARTMENT OF COMPUTER SCIENCE  
DR. JIHE "JACKIE" ZHAO, BURNETT SCHOOL OF BIOMEDICAL SCIENCES  
DR. HONGXIA ZHOU, BURNETT SCHOOL OF BIOMEDICAL SCIENCES

GRADUATE PROGRAM PARTICIPATING TEACHING FACULTY

DR. RAHELEH AHANGARI  
DR. CAMILLA AMBIVERO  
DR. ROBERT BORGON  
DR. EMILY BRADSHAW  
DR. TINA DOW  
DR. ALICIA HAWTHORNE  
DR. TIRRELL JOHNSON  
DR. MOHTASHEM SAMSAM

# Facilities

Faculty and staff in the School are located in four areas: The Biomedical Science and Health & Public Affairs II Building on Main Campus; the Biomedical Research Annex in Research Park; and the Burnett Biomedical Sciences facility, adjacent to the College of Medicine at the Lake Nona Medical City Campus.



**Biomedical Sciences Building, Main Campus**



**Burnett Biomedical Sciences Building, Health Sciences Campus**



**Health & Public Affairs II Building, Main Campus**



**Biomedical Research Annex, Research Park**

## Health Sciences Campus Shuttle

UCF Shuttles travel between UCF's main campus and the Health Sciences Campus at Lake Nona Monday through Friday. For the latest schedule updates please visit the Parking Services website at <http://parking.ucf.edu/shuttles/health-sciences-schedule/>

# Contact Info

## **Burnett School of Biomedical Sciences Graduate Office**

The Biomedical Sciences Graduate Services Office is an integral part of ensuring our graduate students' success. We assist with admissions, orientation, course registration, and are heavily involved in making sure our graduate students complete their required milestones throughout their graduate student career.

We are here and ready to answer all of your questions!

We are available to assist you by phone, email or in person (by appointment).

For more information, please email [BSBSGradAdmissions@ucf.edu](mailto:BSBSGradAdmissions@ucf.edu)

Lisa Vaughn, Senior Admissions Specialist

[Lisa.Vaughn@ucf.edu](mailto:Lisa.Vaughn@ucf.edu)

## **THE UCF CREED**

Integrity, scholarship, community, creativity and excellence are the core values that guide our conduct, performance, and decisions. These values comprise the guiding principles that direct the actions of the university, and its students.

### **Integrity**

I will practice and defend academic and personal honesty.

### **Scholarship**

I will cherish and honor learning as a fundamental purpose of my membership in the UCF community.

### **Community**

I will promote an open and supportive campus environment by respecting the rights and contributions of every individual.

### **Creativity**

I will use my talents to enrich the human experience.

### **Excellence**

I will strive toward the highest standards of performance in any endeavor I undertake



***The MS Biomedical Sciences program (non-thesis) reserves the right to make any changes or amendments to the Program/Handbook information, rules, or policies within the students' period of study upon majority approval of the program faculty, director and coordinator.***