

# Medical Scientist Training Program

Degree Offered:	M.D.-Ph.D.
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## Overview

UAB's outstanding research and clinical training programs provide a unique opportunity for students interested in careers in basic biomedical research. As a designated NIH Medical Scientist (M.D.-Ph.D.) Training Program (MSTP), students are admitted concurrently to the School of Medicine and the Graduate School in order to pursue both the M.D. degree and the Ph.D. degree. Ph.D. study in this program is available in the areas of biochemistry, structural, and stem cell biology; biomedical engineering; biostatistics; cancer biology; cell, molecular and developmental biology; epidemiology; genomics, and bioinformatics; health behavior; immunology; microbiology, neuroscience; nutrition sciences; pathobiology and molecular medicine; public health; sociology; and vision science.

Individuals admitted to this highly competitive program must have excellent undergraduate academic records and MCAT scores. In addition, successful applicants must have demonstrated their commitment to a career pathway as an investigator with active participation in an original research project prior to admission. Fellowship support, including a stipend and payment of tuition and fees, is provided to successful applicants.

In general, M.D.-Ph.D. students will first complete the basic science phase of the medical curriculum and the first-year core curriculum of their chosen Ph.D. discipline simultaneously. The second phase of study will focus on mentor selection, research path, and completion of a dissertation research project leading to the Ph.D. degree. The final phase of the program is a series of clinical rotations and an abbreviated set of acting internships to complete the M.D. degree. Normally, the program involves about 8 years for completion, depending on the time required to complete the dissertation research.

Interested applicants must complete the standard AMCAS application to the UAB School of Medicine and a short secondary application to the M.D.-Ph.D. program once the AMCAS application has been reviewed for consideration. More information is available at <https://www.uab.edu/medicine/mstp/admissions>

Students who have initiated study in the University of Alabama School of Medicine or the UAB Graduate School may also apply to the MD-PhD Program. Please contact the MSTP Directors for further information.

## Biochemistry & Structural Biology (BSB) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b> <sup>1</sup>	8
<b>Theme Required Course</b>	6
GBSC 742 GBS Student Theme Meeting Course <sup>2</sup>	
<b>GBS Required Courses</b>	23
GRD 717 Principles of Scientific Integrity	
<b>Grant-Writing/Scientific Communication</b> <sup>3</sup>	
Biostatistics <sup>4</sup>	
Journal Clubs <sup>5</sup>	
<b>Three Advanced Courses</b> <sup>6</sup>	
<b>MSTP/ARISE Required Courses</b>	39
MSTP 794 Translational Research Seminar <sup>7</sup>	
MSTP 795 Continuing Clinical Education <sup>8</sup>	
<b>Research</b> <sup>9</sup>	
<b>Total Hours</b>	76

<sup>1</sup> Four modular courses selected from the following: GBS 710, GBS 712, GBS 714, GBS 720, GBS 724, GBS 740A, GBS 740B, GBS 741, GBS 744, GBS 750, GBS 751, GBS 752, GBS 753, GBS 760, GBS 762, GBS 763, GBS 764, GBS 769, GBS 770, GBS 774, GBS 781, GBS 782, GBS 784, GBSC 718, GBSC 727, GBSC 729, GBSC 744, GBSC 747

<sup>2</sup> Required each fall and spring semester

<sup>3</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBSC 726, GRD 709, or other approved course

<sup>4</sup> Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course

<sup>5</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>6</sup> Three advanced courses selected from the following: GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course.

<sup>7</sup> Required every semester

<sup>8</sup> Required each fall and spring semester

<sup>9</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Cancer Biology (CANB) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b>	8
GBS 710 Cell Signaling	
GBS 769 Carcinogenesis	
GBS 770 Pathobiology of Cancer	
GBS 774 Cancer Immunology	
<b>Theme Required Courses</b>	6
GBS 777 Cancer Biology Seminar <sup>1</sup>	
<b>GBS Required Courses</b>	23

GRD 717	Principles of Scientific Integrity	
<b>Grant-Writing/Scientific Communication</b> <sup>2</sup>		
<b>Biostatistics</b> <sup>3</sup>		
<b>Journal Clubs</b> <sup>4</sup>		
<b>Three Advanced Courses</b> <sup>5</sup>		
<b>MSTP/ARISE Required Courses</b>		<b>39</b>
MSTP 794	Translational Research Seminar	<sup>6</sup>
MSTP 795	Continuing Clinical Education	<sup>7</sup>
<b>Research</b> <sup>8</sup>		

76

<sup>1</sup> Required each fall and spring semester.

<sup>2</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBSC 726, GRD 709, or other approved course.

<sup>3</sup> Course selected from GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course.

<sup>4</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>5</sup> Three advanced courses selected from the following:  
GBS 700, GBS 702, GBS 715, GBS 718, GBS 726 GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709,GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course.

<sup>6</sup> Required every semester.

<sup>7</sup> Required each fall and spring semester.

<sup>8</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Cell, Molecular & Developmental Biology (CMDB) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b> <sup>1</sup>	8
<b>Theme Required Courses</b>	7
GBS 792 CMDB Seminar	<sup>2</sup>
<b>GBS Required Courses</b>	
GRD 717 Principles of Scientific Integrity	
<b>Grant-Writing/Scientific Communication</b> <sup>3</sup>	
<b>Biostatistics</b> <sup>4</sup>	
<b>Journal Clubs</b> <sup>5</sup>	
<b>Three Advanced Courses</b> <sup>6</sup>	
<b>MSTP/ARISE Required Courses</b>	<b>39</b>
MSTP 794 Translational Research Seminar	<sup>7</sup>
MSTP 795 Continuing Clinical Education	<sup>8</sup>
<b>Research</b> <sup>9</sup>	

77

<sup>1</sup> Four modular courses selected from the following: GBS 710, GBS 712, GBS 714, GBS 720, GBS 724, GBS 740A, GBS 740B, GBS 741, GBS 744, GBS 750, GBS 751, GBS 752, GBS 753, GBS 760, GBS 762, GBS 763, GBS 764, GBS 769, GBS 770, GBS 774, GBS 781, GBS 782, GBS 784, GBSC 718, GBSC 727, GBSC 729, GBSC 744, GBSC 747

GBS 781, GBS 782, GBS 784, GBSC 718, GBSC 727, GBSC 729, GBSC 744, GBSC 747

<sup>2</sup> Required each fall and spring semester.

<sup>3</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBSC 726, GRD 709, or other approved course

<sup>4</sup> Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course.

<sup>5</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>6</sup> Three advanced courses selected from the following:

GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course.

<sup>7</sup> Required each semester

<sup>8</sup> Required each fall and spring semester

<sup>9</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Genetics, Genomics and Bioinformatics (GGB) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b> <sup>1</sup>	8
<b>Theme Required Courses</b>	7
<b>GBS Required Courses</b>	
GBS 742 GBS Student Theme Meeting Course	<sup>2</sup>
<b>MSTP/ARISE Required Courses</b>	
MSTP 794 Translational Research Seminar	<sup>7</sup>
MSTP 795 Continuing Clinical Education	<sup>8</sup>
<b>Research</b> <sup>9</sup>	

**Total Hours** **77**

<sup>1</sup> Four modular courses selected from the following: GBS 710, GBS 712, GBS 714, GBS 720, GBS 724, GBS 740A, GBS 740B, GBS 741, GBS 744, GBS 750, GBS 751, GBS 752, GBS 753, GBS 760, GBS 762, GBS 763, GBS 764, GBS 769, GBS 770, GBS 774, GBS 781, GBS 782, GBS 784, GBSC 718, GBSC 727, GBSC 729, GBSC 744, GBSC 747

<sup>2</sup> Required each fall and spring semester

<sup>3</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBSC 726, GRD 709, or other approved course

<sup>4</sup> Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course.

<sup>5</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>6</sup> Three advanced courses selected from the following:  
 GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course.

<sup>7</sup> Required each semester

<sup>8</sup> Required each fall and spring semester

<sup>9</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Immunology (IMM) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b>	8
GBS 740A Introduction to Immunology Part 1	
GBS 740B Introduction to Immunology Part 2	
GBS 744 Mucosal Immunology	
GBS 741 Lymphocyte Biology	
<b>Theme Required Courses</b>	6
GBSC 742 GBS Student Theme Meeting Course <sup>1</sup>	
<b>GBS Required Courses</b>	23
GRD 717 Principles of Scientific Integrity	
<b>Grant-Writing/Scientific Communication</b> <sup>2</sup>	
Biostatistics <sup>3</sup>	
Journal Clubs <sup>4</sup>	
Three Advanced Courses <sup>5</sup>	
<b>MSTP/ARISE Required Courses</b>	39
MSTP 794 Translational Research Seminar <sup>6</sup>	
MSTP 795 Continuing Clinical Education <sup>7</sup>	
Research <sup>8</sup>	
<b>Total Hours</b>	76

<sup>1</sup> Required each fall and spring semester

<sup>2</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBSC 726, GRD 709, or other approved course

<sup>3</sup> Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course

<sup>4</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>5</sup> Three advanced courses selected from the following:

GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course.

<sup>6</sup> Required every semester

<sup>7</sup> Required each fall and spring semester

<sup>8</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Microbiology (MIC) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b>	8
GBS 760 Bacterial Genetics and Physiology	
GBS 762 Virology	
GBS 764 Introduction to Structural Biology Methods	
GBS 763 Microbial Pathogenesis	
<b>Theme Required Courses</b>	8
GBS 768 Communicating Science: Reading, Writing and Presentation	
GBSC 742 GBS Student Theme Meeting Course <sup>1</sup>	
<b>GBS Required Courses</b>	23
GRD 717 Principles of Scientific Integrity	
<b>Grant-Writing/Scientific Communication</b> <sup>2</sup>	
Biostatistics <sup>3</sup>	
Journal Clubs <sup>4</sup>	
Advanced Courses <sup>5</sup>	
<b>MSTP/ARISE Required Courses</b>	39
MSTP 794 Translational Research Seminar <sup>6</sup>	
MSTP 795 Continuing Clinical Education <sup>7</sup>	
Research <sup>8</sup>	
<b>Total Hours</b>	78

<sup>1</sup> Required each fall and spring semester

<sup>2</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBS 768, GBSC 726, GRD 709, or other approved course

<sup>3</sup> Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course

<sup>4</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>5</sup> Three advanced courses selected from the following:

GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course

<sup>6</sup> Required every semester

<sup>7</sup> Required each fall and spring semester

<sup>8</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Neuroscience (NEURO) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b>	8
GBSC 744 Neuroanatomy	
GBSC 729 Cell Neurophysiology	
GBS 714 Developmental Neuroscience	
GBSC 727 Neuro Systems	

Theme Required Courses	9	MSTP 795	Continuing Clinical Education <sup>7</sup>
GBS 737	Neuro Student Summer Seminar Series <sup>1</sup>		
NBL 703	Nuerobiology Seminar Series <sup>2</sup>		
<b>GBS Required Course</b>	<b>23</b>	<b>Research <sup>8</sup></b>	
GRD 717	Principles of Scientific Integrity		
<b>Grant-Writing/Scientific Communication <sup>3</sup></b>			
<b>Biostatistics <sup>4</sup></b>			
<b>Journal Clubs <sup>5</sup></b>			
<b>Three Advanced Courses <sup>6</sup></b>			
<b>MSTP/ARISE Required Course</b>	<b>39</b>		
MSTP 794	Translational Research Seminar <sup>7</sup>		
MSTP 795	Continuing Clinical Education <sup>8</sup>		
<b>Research Hours <sup>9</sup></b>			
<b>Total Hours</b>	<b>79</b>		

<sup>1</sup> Required each summer semester

<sup>2</sup> Required each fall and spring semester

<sup>3</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBSC 726, GRD 709, or other approved course

<sup>4</sup> Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course

<sup>5</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>6</sup> Three advanced courses selected from the following:  
GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course

<sup>7</sup> Required every semester

<sup>8</sup> Required each fall and spring semester

<sup>9</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Pathobiology, Pharmacology, & Physiology (P <sup>3</sup>) Theme - MSTP/ARISE

Requirements	Hours
<b>Module Courses</b>	<b>8</b>
GBS 750	Intro to Physiology
GBS 751	Intro to Physiology II
GBS 752	Intro to Pathobiology
GBS 753	Intro to Pharmacology & Toxicology
<b>Theme Required Courses</b>	<b>6</b>
GBSC 742	GBS Student Theme Meeting Course <sup>1</sup>
<b>GBS Required Courses</b>	<b>23</b>
GRD 717	Principles of Scientific Integrity
<b>Grant Writing/Scientific Writing <sup>2</sup></b>	
<b>Biostatistics <sup>3</sup></b>	
<b>Journal Clubs <sup>4</sup></b>	
<b>Advanced Courses <sup>5</sup></b>	
<b>MSTP/Arise Required Courses</b>	<b>39</b>
MSTP 794	Translational Research Seminar <sup>6</sup>

<sup>1</sup> Required each fall and spring semester

<sup>2</sup> Course selected from the following: PSDO 700, GBS 716, GBS 725, GBSC 726, GRD 709, or other approved course

<sup>3</sup> Course selected from the following: GRD 770, BST 611, BST 612, BY 755, PY 716, or other approved course

<sup>4</sup> Required each fall and spring semester. Courses selected from the following: GBS 736, GBS 746J, GBS 756, GBS 776, GBS 786J, GBS 793, GBSC 700, GBSC 713, GBSC 720, INFO 673, INFO 793

<sup>5</sup> Three advanced courses selected from the following:  
GBS 700, GBS 702, GBS 715, GBS 718, GBS 726, GBS 727, GBS 729, GBS 739, GBS 742, GBS 749, GBS 754, GBS 757, GBS 758, GBS 765, GBS 775, GBS 778, GBS 779, GBS 783, GBSC 705, GBSC 706, GBSC 707, GBSC 709, GBSC 710, GBSC 712, GBSC 714, GBSC 715, GBSC 717, GBSC 721, GBSC 724, GBSC 725, GBSC 728, GBSC 730, GBSC 732, GBSC 734, GBSC 735, GBSC 736, GBSC 740, GBSC 741, GBSC 743, GBSC 745, GBSC 746, GBSC 748, INFO 701, INFO 702, INFO 703, INFO 704, INFO 751, INFO 762, INFO 796, INFO 797, BME 723, BME 770, BME 772, BME 780, or other approved course

<sup>6</sup> Required every semester

<sup>7</sup> Required each fall and spring semester

<sup>8</sup> Student must complete 24 hours total of dissertation research, MSTP 799 or PSDO 799.

## Courses

### MSTP 793. Basic Research Forum. 1 Hour.

This course is for entering MD-PHD students to meet the GBS Core-Course requirements. The following list consists of desirable competencies for enrolled MD-PHD students to achieve while in this course: (a) Learn fundamental topics in biomedical research that will not be covered in SOM courses; (b) Fill gaps in curriculum between GBS707/709; and (c) Introduce topics that may be of interest for future lab rotations.

### MSTP 794. Translational Research Seminar. 1 Hour.

The CAMS Translational Research Seminar series, required fall, spring and summer semesters, invites UAB faculty (PhD, MD, MD-PhD or MPH) who are conducting translational research to present their work to students in the MSTP. The goal of the presentation is three fold: (a) to inform students about the career path of the investigator, (b) to provide them with information regarding the initiation and conduct of translational research, and (c) to expose students to current developments in basic and clinical research. There are two to three sessions each year in which panels or round tables discuss topics, including mentor selection, preparation for residency, residency selection, and the overall UAB MSTP experience. Lecturers give a 45-minute presentation followed by a 15-minute question and answer session. This course is open only to MD-PhD students.

**MSTP 795. Continuing Clinical Education. 1 Hour.**

This course is designed to maintain clinical skills and knowledge during students' dissertation research years. MSTP students will take the course every fall semester and spring semester during their PhD dissertation phase. Each semester, students will be required to complete seven course components. Some components serve to maintain clinical skills and includes students conducting a resident-supervised clinical encounter as well as completing one half day of shadowing. Other components serve to maintain or bolster clinical knowledge and include students attending case conferences and/or participating in simulation sessions. This course is open only to MD-PhD students.

**MSTP 796. Anatomy Lab TA Opportunity. 1 Hour.**

From 23 TOTAL dissections between the MS1 and MS2 years, students choose any 6 dissections to teach depending on their availability. Overview: MS4 students will serve as Anatomy Teaching Associates for MS1 and MS2 students during scheduled lab times to make preclinical training more robust and clinically relevant. Course benefits for MS4 students: - Small-group anatomy training aimed to improve knowledge of anatomy & dissection skills. - Teaching & mentoring experience of students with less clinical experience. - Flexible schedule: Preferred dissections may be changed up to 1 week before the preclinical scheduled lab time. Format: - Students will attend a 1-hour orientation session addressing effective teaching techniques in August of the entering year (accommodation for absence can be made on a case-by-case basis). - The week prior to their chosen dissections, students will receive 2 hours of small group training in SOM lab under the directions of trained UAB Anatomist and Course Director Dr. Resuehr. During this training, students will perform the relevant cadaveric dissection which will be saved for demonstration during the preclinical lab. -TAs will be assigned to a group of preclinical students during their scheduled lab time to help answer questions. Particular emphasis will be placed on providing preclinical students with clinical correlates. Learning Objectives: - Dissect and identify all associated structures of their chosen dissections emphasizing the relation of structures to each other and common pathologies. - Understand common anatomical variations (if applicable). - Understand anatomically relevant information pertaining to clinical procedures. - Understand geriatric changes. - Mentor and teach students with less experience.

**MSTP 798. MSTP Non-Dissertation Hours. 1-8 Hour.**

Laboratory research pre-qualification. Only open to MSTP students.

**MSTP 799. MSTP Dissertation Hours. 1-8 Hour.**

Dissertation research. Only open to MSTP students.

**Prerequisites:** GAC Z