

# Master of Science in Applied Anatomy

Thinking beyond the possible



Build a solid foundation in human form and function.  
Improve your eligibility for admission to a PhD, MD, DDS or PA program.



SCHOOL OF MEDICINE

CASE WESTERN RESERVE  
UNIVERSITY

# An In-Depth Study

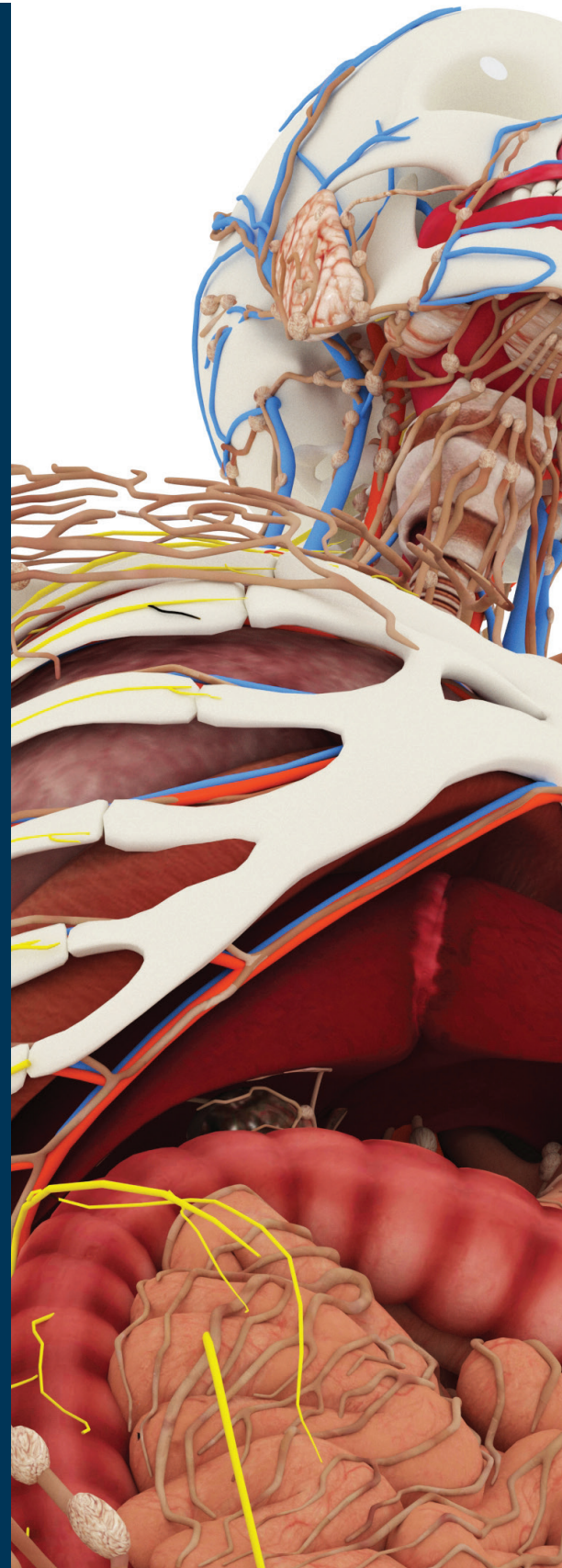
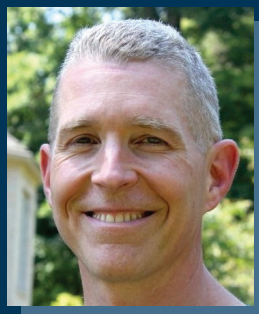
## From the Program Director

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The Department of Anatomy at Case Western Reserve University School of Medicine is synonymous with academic excellence and a personalized student experience. In our courses, students learn from world-renowned faculty who are recognized for their teaching. Plus, these faculty serve as academic advisors and mentors for our students, leading to strong, lasting relationships—a factor that our graduates often cite as one of the program’s most valuable features.

We offer a rigorous curriculum, a focus on experiential learning and an ideal cohort size—one that is large enough to offer diversity but small enough for you to know all your classmates. This is why our MS in Applied Anatomy has attracted graduate students to Cleveland for nearly 25 years. We continuously improve our curriculum based on student feedback to maximize the academic and professional advantage it gives students to achieve their career goals. I hope we have the opportunity to do the same for you.

Darin Croft, PhD  
Program Director, MS in Applied Anatomy  
Professor and Paleomammalogist,  
Department of Anatomy



# of the Human Body



In the Master of Science in Applied Anatomy program at Case Western Reserve University, our students broaden and deepen their knowledge of basic biology, human health and disease while gaining hands-on experiences to better prepare themselves for a biomedical career.

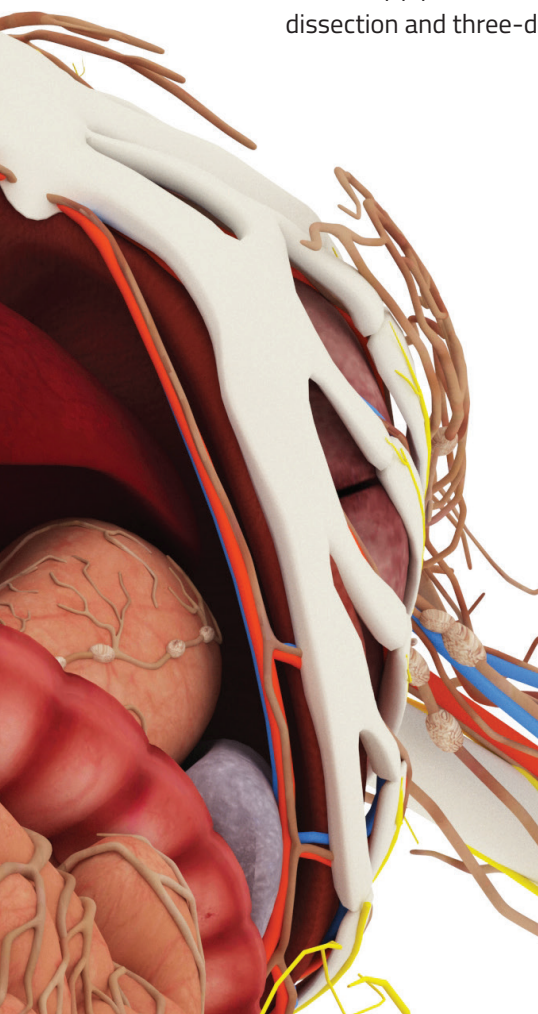
Students receive a comprehensive education in the anatomical sciences through a program that fosters professional and intellectual development. Our curriculum offers opportunities to blend classroom learning with hands-on experiences such as research and teaching.

Students gain extensive training in the macro- and microscopic structure of the entire human body through regional and systemic approaches that integrate virtual microscopy, problem-based learning, whole-body anatomical dissection and three-dimensional neuroanatomical imaging.

## PROGRAM HIGHLIGHTS

- Elective courses offer students flexibility to focus on their areas of interest.
- Our augmented-reality software HoloAnatomy complements and accelerates classroom learning.
- Multiple pathways: We offer thesis and non-thesis options, as well as a dual MD/MS degree.\*

\*Only available to students who have already been admitted to CWRU's MD program.



**"I would recommend this program for those who are looking to teach, go for their PhD or simply further their education in the health sciences."**

—Elisabeth Hare, '21

# Why Pursue an MS in Applied Anatomy at Case Western Reserve University?

- Intimate class sizes that enhance the small-group teaching experience.
  - Accessible professors and a close-knit community that create a supportive, enriching environment that is rare in biomedical education.
  - The opportunity to teach others while honing your communication and mentoring skills, and deepening your knowledge of core content.
  - Strong preparation for future graduate study in medicine, dentistry, nursing or higher education.
  - Excellent way to expand your knowledge and skills for a career in research or to continue your studies in a doctoral program.
- Our new, state-of-the-art, 485,000-square-foot Sheila and Eric Samson Pavilion at Case Western Reserve and Cleveland Clinic's Health Education Campus houses the Frances Payne Bolton School of Nursing, School of Dental Medicine and School of Medicine.



## What You Will Learn

### Core courses include:

#### Embryology:

This course uses discussions and presentations to review the basic morphological changes that occur in human development (and vertebrates in general) from fertilization to birth.

#### Histology and Ultrastructure:

This comprehensive course surveys all tissues and organs in the body by integrating microscopic identification of normal cells, tissues and organs with information about their cell biology, biochemistry and physiology.

#### Gross Anatomy:

This in-depth, cadaver-dissection-based course covers all aspects of human gross anatomy and is divided into six sections: thorax, abdomen, pelvis and perineum, upper limb and back, lower limb, and head and neck.

#### Neurological Anatomy:

Through a mix of lectures, small-group discussions and hands-on activities, students study regional anatomy via preserved human brains and sections through the central nervous system; students also "follow" functional systems through the spinal cord, brain stem and/or forebrain.

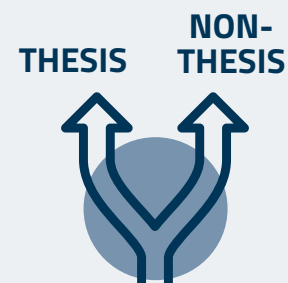
#### Selected Electives

- Imaging Anatomy
- Pharmacology
- Biochemistry
- Microbiology
- Fundamental Immunology
- Multimodal Anatomy
- Human Evolution
- Physiology
- Nutrition
- Surgical Anatomy

## Two Pathways

### Students have the option to select a thesis or non-thesis pathway.

The thesis options requires students to write a Master of Science thesis, and provides advanced exposure to anatomical sciences for those with a strong interest in research or who plan to pursue a PhD. The non-thesis option prepares graduates for advanced studies in medicine, dentistry, nursing, or education and culminates in a comprehensive exam.





## Learn While Doing

Students can enhance their resume and reinforce their classroom knowledge through career-development experiences such as working in a research lab, serving as a teaching assistant or taking part in many other hands-on opportunities. With such close proximity to world-renowned hospitals, students have almost limitless opportunities to volunteer, shadow and connect with the local health care community.

**“Getting into medical school is my goal. After one year of this program, and completing the hallmark cadaver-dissection course, I feel more prepared to become a physician.”**

—Amber Jin, '20

## Groundbreaking Research

Case Western Reserve University is one of the top 25 private research universities in the nation, ranking 19th among private institutions for federal research funding and 13th for translating research into commercial success, as evidenced by our more than 270 industrial partners.

**“I chose the non-thesis option because I wanted to take as many courses in a world-renowned medical school as possible because my goal is to become a physician. I believe these classes strengthen my application and prove to me that I can handle the pace of medical school.”**

—Martina Merrill, '21

## From Master's to MD

Case Western Reserve University recognizes the high quality of graduates from the Applied Anatomy program. As a result, the university's MD program has established a formal linkage with our program. Our students are guaranteed an interview at the medical school if they meet the following criteria:

- Minimum 3.4 undergraduate GPA
- Minimum 3.5 graduate GPA
- Minimum 90th percentile on the MCAT, and the highest levels of personal and professional conduct



# Entering Fall 2022 Class Profile

Total Class Size **18**

**67%** Female | **33%** Male

Average MCAT

**495 – 504 – 511**

Middle 80%

GRE Verbal Avg.

**159**

GRE Quant Avg.

**163**

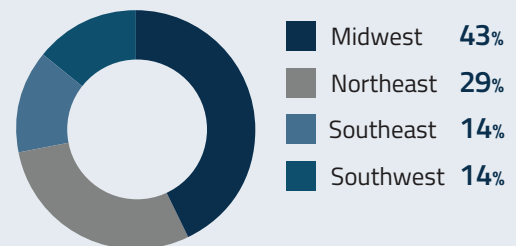
Undergrad Avg. GPA

**3.47**

## Student Diversity

**72%** U.S. Citizen/  
Permanent Resident | **28%**  
International

Geographic Location of U.S. Residents:



Student International Heritage:

Canada  
China  
Nigeria  
Sudan

“As an international student, I decided to attend the Applied Anatomy program because it combines a hands-on cadaver experience with traditional instruction so a student may build a solid foundation of human anatomy while appreciating the fundamental difference that makes each body unique.”

—Zac Yenczek, '20

## Our Faculty: Award-Winning Teachers

Karla Coburn, DDS, PhD

Scott W. Simpson, PhD

Darin A. Croft, PhD

Bryan Singelyn, MS

Andrew R. Crofton, PhD

Susanne Wish-Baratz, PhD, MBA

Meghan Newcomer, PhD





# Career Outcomes

The MS in Applied Anatomy degree prepares a student for a fulfilling biomedical career in a clinical, academic, or industrial setting. Many graduates continue their studies at CWRU or other top medical and graduate schools across the country. Students who complete our program have the knowledge and skills universities and employers are looking for in potential students and employees:

- Detailed knowledge of the form and function of the human body
- Familiarity with the latest scientific research methods
- Enhanced critical thinking skills
- Skills in delivering presentations and in oral communication
- The ability to analyze and synthesize data
- Polished technical writing and science communication skills

**“My coursework at Case Western Reserve required me not only to learn subjects like histology; embryology, neurology and anatomy, but also to think critically and apply these subjects to clinical cases during labs and examinations. I was finally able to achieve my MCAT goals and ultimately gain acceptance into medical school.”**

—Michael Kopka, '19



**Alumni:**

## What Are They Doing Now?

- Physician: **51%**
- Other Clinician: Certified Anesthesiologist Assistant, Dentist, Physical Therapist or Physician Assistant: **28%**
- Higher Education Faculty: **12%**
- Doctoral Researcher: **7%**
- Healthcare Engineer: **2%**

### Application Deadlines

Fall Start:  
**July 15**

Spring Start:  
**November 1**

## Start Your Journey: The Application Process

Follow these simple steps to apply to the MS in Applied Anatomy program:

1. Complete an online application by visiting: [case.edu/medicine/anatomy/admissions](https://case.edu/medicine/anatomy/admissions).
2. Include a statement of purpose explaining why the MS in Applied Anatomy is right for you.
3. Add a current resume or CV outlining work, research and volunteer experience.
4. Upload school-issued, unofficial transcripts —one for each college or university attended.
5. Share your MCAT, GRE or DAT exam scores (optional).
6. Request two letters of recommendation.
7. International students need to demonstrate English proficiency; see website for details.



# Your Future Starts Here

## Case Western Reserve University

The No. 1 university in Ohio and No. 42 in the nation, Case Western Reserve is a thriving research institution that is home to nearly 6,500 graduate students and about 5,400 undergraduates; we have 3,965 faculty and have had 16 Nobel laureates in our history. Located in the heart of one of Cleveland's most vibrant neighborhoods, University Circle, our campus is 6 miles from downtown and within walking distance of the city's premier cultural institutions.

## School of Medicine

CWRU's School of Medicine is a leader in medical education and research, thanks in part to strong partnerships with some of the nation's top hospital systems, including the No. 2 Cleveland Clinic as well as University Hospitals, MetroHealth and the Louis Stokes Cleveland VA Medical Center. Our top-25 medical school prepares physicians to provide quality care for patients with a high degree of compassion and expertise.

A few of the many "firsts" we have developed include: the CPR course, HoloAnatomy augmented-reality curriculum, successful defibrillation of the human heart, artificial human chromosome, and stool DNA tests for early detection of colon cancer.

"With the help of this program, I have now completed my first year of medical school at CWRU's School of Medicine."

—Brandon DeClouette, '18

## Life in Cleveland

Cleveland is in the midst of a nationally recognized revival in its major industries, from manufacturing and finance to health care and biomedicine. Nestled on the shores of Lake Erie and ranked as one of the country's most livable cities, Cleveland has world-renowned hospitals located on and around campus, countless cultural institutions, a diverse and thriving food scene, and accessible outdoor activities and professional sporting events. These reasons—and many others—make us proud to call Cleveland home. Cleveland rocks!

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## Contact Us

Case Western Reserve University  
School of Medicine, Department of Anatomy  
10900 Euclid Avenue  
Cleveland, OH 44106-4930

anatomy@case.edu  
216.368.3430  
facebook.com/CWRUSOM  
twitter.com/cwrusom



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[case.edu/medicine/anatomy](http://case.edu/medicine/anatomy)