

Frequently Asked Questions (FAQs) About The MS in Medical Physiology Program

Department of Physiology and Biophysics
Case Western Reserve University School of Medicine

Answered by Thomas M. Nosek, Ph.D.
Director of the MS in Medical Physiology Program

1. Does the Department offer financial aid to MS in Medical Physiology students?

All financial aid is handled through the university's financial aid office:

<http://financialaid.case.edu/> This office should be contacted directly. No financial aid is provided by the Department of Physiology and Biophysics. Seven 2nd year MSMP students are hired as Teaching Assistants at a rate of \$15/hour for 20 hours of work/week. These are competitive positions with the selection of TA's made each May from students just completing their 1st year in the program.

2. What is the tuition for the program?

The MS in Medical Physiology is a 30 credit hour program.

Tuition is \$1827/credit hour, capped at \$21,924 (meaning if you take 12 or 18 credit hours, it's the same price)

\$17 activity fee/semester

\$1045/semester for health insurance, unless you can prove you have other health insurance and waive this

\$125/fall semester and \$156/spring semester for gym membership, unless you opt-out

3. Is there any linkage between this program and the School of Medicine at Case Western Reserve?

There is no official linkage between performance in the MSMP program and admittance to either the CWRU MD, Dental, or PA programs. However, students who perform well in our program and have a high level of performance at the undergraduate level and on the MCAT exam, are guaranteed an interview for the CWRU School of Medicine MD program. In addition, we are the faculty who teach in the MD and PA programs and some of us are involved in the admissions process for these programs. A number of our graduates have been successful gaining admittance to the CWRU MD, Dental, and PA programs.

4. Do the students that come through the program reach their professional goals (medicine, dentistry, or other professional school) after completing their coursework?

The MSMP program in the Department of Physiology and Biophysics matriculated its first class in 2011 with the goal of helping students with less than optimal undergraduate academic records achieve their career goal of being accepted into a biomedical professional program (MD, DO, Podiatric, Dental, Physician Assistant, Nursing, Optometry, Pharmacy, Anesthesiology Assistant, or Ph.D.) or to gain entry into the Biomedical/Biotechnology Industry.

If students do well in our rigorous, specialized, Physiology post-baccalaureate experience (earn a

CWRU graduate GPA of between 3.5 and 4, pass the National Board of Medical Examiner's shelf exam in Physiology at the 50th percentile or better, take advantage of the "Hidden Curriculum", and receive a strong letter of recommendation from the MSMP Administration Committee), they will have demonstrated that they can master a fast-paced curriculum similar in rigor to what they would experience in professional school.

Because Physiology forms the basis of Medicine, we believe that our Master's Degree program best prepares students for careers in biomedical professional programs and the Biomedical/Biotechnology Industry.

Approximately 90% of matriculating students earn the MS degree in Medical Physiology within 2 years. Over 50% of the students earn A's in the first year core physiology courses and a final CWRU Graduate GPA greater than 3.5.

Students typically apply to professional programs after their first or second year in the program. Data on the outcomes of the students from a matriculating class is not established until 2 years after graduation. Therefore, we have the most accurate outcomes data for the classes matriculating in 2011, 2012, and 2013.

Class Matriculating in 2011

We have outcomes data on 100% of the 43 students matriculating in 2011. Of these students, 86% were admitted to MD/DO Schools, 9% to Dental Schools (constituting 100% of all students wishing to go to Dental School), and 5% to other medical programs (Podiatry, Physician Assistant, Anesthesiology Assistant, Pharmacy, Optometry, and Naturopathic Medicine).

Class Matriculating in 2012

We have outcomes data on 80% of the 82 students matriculating in 2011. Of these students, 76% were admitted to MD/DO Schools, 10% to Dental Schools, 9% to other medical programs, and 5% to Ph.D. programs.

Class Matriculating in 2013

We have outcomes data on 66% of the 82 students matriculating in 2013. Of these students, 82% were admitted to MD/DO Schools, 9% to Dental Schools (constituting 100% of all students wishing to go to Dental School), 7% to other medical programs, and 2% to Ph.D. programs.

5. How comparable are the courses offered to first-year medical school courses?

CWRU's medical program is primarily problem based without any "courses" in the classical sense of the term. Our lecture style courses in the MS in Medical Physiology program are far MORE vigorous than those found in a traditional medical curriculum where courses in physiology are taught. Our program requires at least 20 hours of physiology courses; this is far more than any medical school requires of their students.

6. Is there advising available to every Master's student at CWRU?

When students officially accept our offer, we assign them an MSMP Faculty Advisor. This is a full time faculty member in the Department of Physiology and Biophysics who will help the students select and time the courses that they will be taking to satisfy the 30 credit hour requirement (20 required course hours in Physiology and 10 elective course hours that can be taken in any department of the university as long as they are at the 400 level or higher). The Advisor will also help the student plan their strategy for getting into a professional program and, if that does not materialize, developing an alternative career goal.

Students also choose a Peer Advisor from the 2nd year MSMP students who will provide the student with a student's perspective as to how to best succeed in our program and enjoy their time at CWRU and in Cleveland.

Student who are interested in Dental School will also be assigned to the Dean for Admissions at the CWRU School of Dentistry as an advisor.

7. The MSMP program is advertised as a 12 month program but yet the program is also advertised as having a flexible duration. What is the recommended time in which a student should complete the program?

The MSMP program is designed as a 12 month program. Students who do well in the first semester of the program can graduate in 3 semesters by taking a 3 credit hour elective spring semester in addition to the 10 credit hours of core physiology courses and 7 credit hours of electives summer semester. Most student opt to take 2 full academic years to complete the program in order to optimize their chances of gaining admission to professional medical programs. This 2 year option is highly recommended by the faculty, with applications to professional programs being submitted either after the first 2 semesters in the program or after completion of the program.

8. I understand that this program can be completed in 2 semesters. Is this option recommended and should students apply to medical school before entering the program?

While the program can be completed in as little as two semesters, we do not recommend that students do so. A student would have to take 15 credit hours of course (10 hours of core physiology courses and 5 hours of electives) these 2 semesters. This is a very heavy load that may jeopardize the student's ability to perform well in the program. To complete the program in two semesters requires the support of the student's MSMP Faculty Advisor and approval by the MS in Medical Physiology Administration Committee. The full benefit of this program in applying to a professional program can only be realized AFTER the first year of study. Therefore, it is recommended that students apply only after the first two semesters have been successfully completed.

9. What is the non-resident, Internet program?

The Department of Physiology and Biophysics highly recommends that all Post-Bacc students, if possible, be physically on campus so that they can attend live lectures and seminars, consult with the faculty, and be involved in the "Hidden Curriculum". In this way, they can most effectively become an integral part of the academic community and take advantage of all the educational resources available at CWRU and its affiliated hospitals (The Cleveland Clinic Foundation, University Hospital, Metro Health Hospital, and The Cleveland Veterans Association Hospital). However, we understand that physical attendance and a physical presence in Cleveland is not always possible. Therefore, we offer students who live outside of the Cleveland area or who must work during the times when the courses are offered the option of completing our program as a non-resident, Internet student.

When a student applies to our program, they should specify on their electronic application form if they want to take the program as a non-resident, Internet student and in their personal statement why. When a student is accepted into our program, they may take

courses as either a resident or non-resident, Internet student. For example, some students cannot come to Cleveland for the beginning of the program so they start taking the courses as a non-resident, Internet student that semester. When they do come to Cleveland, they continue taking the courses but as a resident student, even if this is mid-semester. The program makes no distinction between resident and non-resident, Internet students except that non-resident, Internet students are assigned a specific Teaching Assistant to work with them and their Block Exams are administered securely through Proctor. The requirements for graduation and the grading standards in all courses are equal for both resident and non-resident students.

All lectures and seminars of the core physiology courses (PHOL 481, 482, 483, 484, 498C, and 498D) are streamed live simultaneously over the Internet. Moreover, we make available the recording of the presentations as archived videos on Canvas, the Course Management System used by the University. In this way, the presentations can be viewed asynchronously at the student's convenience. Monday quizzes in PHOL 481 and 482 are taken online through Canvas. Block exams are administered under secure conditions on the student's individual computers using proctoring software through a private vendor, ProctorU. There are no extra charges for the use of these Internet resources.

The requirement of 10 credit hours of graduate electives (at the 400 level or above) can be satisfied by non-resident, Internet students in a number of ways. Firstly, there are enough elective courses offered over the Internet by the Department of Physiology and Biophysics that the requirement can be met by taking these courses. Secondly, more and more graduate-level Internet courses are being offered by the basic science departments in the School of Medicine and other departments throughout the university, that the requirement can be met by taking some of these courses. Thirdly, non-resident, Internet students can always come to Cleveland and physically take any graduate level courses offered by the university. Fourthly, the University has a policy of accepting (upon approval by the department and the School of Graduate Studies) up to 6 graduate credit hours of course work from universities other than CWRU and outside the Cleveland area if these courses have not been used to satisfy the requirements for another degree. Therefore, the student can take up to 6 credit hours of approved courses at a university close to where they live and have the credits transferred to CWRU.

Students with questions about in the non-resident, Internet program can contact Dr. Andrea Romani, Director of Admissions (Andrea.Romani@case.edu, 216-368-1625), Dr. Julian Stelzer, Deputy Director of the program (Julian.Stelzer@case.edu, 216-368-8636), or Dr. Thomas M. Nosek, Director of the program (Thomas.Nosek@case.edu, 216-256-3726).

10. Are there opportunities for clinical experience or other health related experiences made available to students through the university?

CWRU has a HUGE medical complex. The university is affiliated with 4 hospitals and we have faculty at all of them: The Cleveland Clinic Foundation, University Hospitals of Cleveland, The Louis Stokes Cleveland Veterans Affairs Medical Center, and Metro Health Hospital and the Rammelkamp Center for Education and Research. One of the reasons we recommend that students take two years to complete the program is so that they can take advantage of all the opportunities that are available on campus. Each department in each affiliated hospital holds a Grand Rounds each week that is open to

our students. We recommend students find an area that they are interested in and attend these Grand Rounds to learn of the latest research and clinical treatments in these areas and to meet the clinical faculty. Students are welcomed to shadow faculty and observe procedures and, when possible, become engaged in either basic science or clinical research. Many students take research courses as one or more of their electives.

11. Are there laboratory research opportunities available to MS students?

Yes. Many students become involved in basic and clinical research projects, including involvement in Clinical Trials. This research experience can range from informally observing in a lab or clinic, to being paid to work part time on a Clinical Trial, to taking 1 or more PHOL 601 Research in Physiology courses, to switching to the Plan A where students take their 10 hours of electives as PHOL 451, Thesis research. In this option, students conduct original research in a faculty's laboratory and write and defend a thesis during their second year in the program.

12. Is there housing for graduate students on campus or close to campus?

Yes, there is a wide diversity of housing options within walking distance to the university. Prime housing can be found in Little Italy and the Coventry area, among others. In addition to privately owned apartments, there is graduate housing on campus. Contact the university's office of housing to get help with finding something that will meet your needs: <http://studentaffairs.case.edu/living/housing/>

13. How many students will be in the matriculating in the next fall class?

We expect between 150 and 180 will matriculate in the fall.

14. Who are the faculty who will be teaching the Medical Physiology I and II and Translational Physiology I and II courses?

Our philosophy for these courses is to have experts in the lecture content give each lecture. Therefore, a large number of faculty from the CWRU School of Medicine, both inside and outside the Department of Physiology and Biophysics, teach these courses. During the current academic year, more than 50 different faculty members will give lectures in these two courses. We consider this to be a unique and distinguishing feature of our program – that as a student you are able to meet and be taught by so many experts in various areas of physiology.

15. What is the textbook for the required first year courses?

The required textbook for the Medical Physiology I and II and Translational Physiology I and II courses is Boron and Boulpaep's **Medical Physiology** Third Edition. It is available at the CWRU bookstore and online. I recommend that you read the first chapter of each of the ten sections of the book before classes begins. It will help you to appreciate the full scope of the courses. We will begin at Chapter 1 in this textbook and work our way to the end of Chapter 62. A detailed syllabus will be provided on our course management system (Canvas) a couple of weeks before classes begin. Through Canvas you will be able to access for each lecture: the name of the lecturer, the Chapter in the required textbook that will be covered, Learning Objectives, the PowerPoint files for that lecture, streaming video of the lecture, and any supplemental reading material.

16. I understand that there is a Dual MS/MBA program. How do I apply for this

program?

The Department of Physiology & Biophysics at Case Western Reserve University offers the MS in Medical Physiology program that caters to college graduates that strengthens their academic backgrounds prior to applying to medical school, dental school, graduate school, or other health professions programs and/or to enrich their credentials for the job market. The Weatherhead School of Management offers its MBA program which is recognized as an innovative approach to Management education and builds on a foundation of core skills to prepare graduates for what's happening in business right now.

The dual degree program prepares students to participate in the fields of medical research and management, health care management, as well as give students an opportunity to develop expertise in areas of substantive interest. Moreover, dual degree students are more likely to have greater job opportunities that are at the intersection of translational science and business/health care.

Students interested in this Dual Degree program apply to the MSMP program and take the first year of required core physiology courses. If a student is in good standing after their first two semesters in the program (earned a GPA of at least 3.0 and passed the National Board of Medical Examiners Shelf Exam in Physiology and Neurophysiology), they may petition the MSMP Administration Committee by the first of May to enter the dual degree program. Upon the recommendation of the MSMP Administration Committee, the student can then apply to the MBA program through the Weatherhead School of Management admissions process.

Students in the MS/MBA program should take the GMAT exam the summer after their first two semesters in the MS part of the program in order to be eligible for financial aid through the Weatherhead School of Management.

See the following link for more information: <https://weatherhead.case.edu/degrees/masters/dual-degree/mba-ms-medical-physiology/>

17. How do I find more information about the CWRU School of Medicine?

For more information about the School of Medicine, consult the School of Medicine's website:

<http://case.edu/medicine/>

or Wikipedia:

http://en.wikipedia.org/wiki/Case_Western_Reserve_University_School_of_Medicine

18. How do I find more information about the CWRU School of Dental Medicine?

For more information about the School of Dental Medicine, consult the School of Dental Medicine's website:

<https://dental.case.edu/>

19. How do I find more information about what is going on in the Department of Physiology and Biophysics at CWRU?

For up-to-date information about our department, visit the departmental website at:
<http://physiology.case.edu/>