

How to ~~survive~~ ^{thrive} in the UC SMP: Student Perspectives on the M.S. in Physiology Program at University of Cincinnati College of Medicine

Introduction

First of all: Congratulations! While you may wish you were *actually* in med school, this program is itself competitive, and you should feel proud for already having made it this far. You've been accepted to this program because multiple people believe that you deserve a place in med school. It's now just a matter of showing it.

Second of all: Good luck. While you may be the exception, the general consensus is that this program is tougher than expected. Put it this way: if you had worked as hard in college as you'll need to this next year, getting the necessary GPA for med school admission would not have been a problem. You're in for an intense year that will be over before you know it. Stay motivated, stay driven, ride out the bumps, and this program can help you get to where you want to go. Written and up-dated primarily by students in the MS program, the goals of this evolving document are to assist prospective and future students (1) evaluate the program and determine its relevance to their own educational goals; (2) prepare for the program and help ensure success; and (3) ease the transition in moving to Cincinnati and starting the program. To that end, we are investing the time to answer some common questions, provide guidance, and blaze the trail for our successors. We think it's a great program, and we hope it will help others make the most of the opportunity. Throughout this guide is advice from a survey of classmates from over the past 10 years.

What to expect

As you know, this program is designed to help you get into medical school. Regardless of your background, this program provides you with an opportunity to enhance your chances for medical school admission, gain a comprehensive perspective on what med school is really like, and to hone your academic/study skills. You will

take a number of classes, three of which will be with the 1st year medical students: Fundamentals of Molecular Medicine, Fundamentals of Cellular Medicine, and Musculoskeletal-Integumentary.

Fundamentals of Molecular Medicine &

Fundamentals of Cellular Medicine prepare students for the organ blocks by presenting foundational concepts and principles in molecular and cellular medicine. This includes an analysis of cellular structures and organelles, protein structure and function, nucleic acid biochemistry, replication and repair of DNA, the processes of transcription and translation, regulation of gene expression, modern molecular techniques used for diagnosis and research, the metabolism of carbohydrates, proteins, purines and pyrimidines, and fatty acids, human genetics (Mendelian and mitochondrial inheritance patterns and probabilities, positional cloning, cytogenetics, imprinting, triplet repeat expansions, multi-factorial diseases, tumor suppressors, and the relevance of the human genome project to medicine), signal transduction pathways, elementary nutrition, and the anatomy and pharmacology of the autonomic nervous system. Early embryogenesis, cellular adaptations and cellular aging are presented, along with elementary pharmacodynamics, pharmacokinetics, and the absorption, distribution, metabolism and excretion of pharmacologically active compounds. Students are introduced to basic concepts and principles of immunology and microbiology. The material learned in the Fundamentals forms the background for all the organ blocks that follow, one of which (MSK) will be taken by SMP students in the spring.

Musculoskeletal-Integumentary (MSK) provides a foundation in the normal structure and physiology of the integumentary and musculoskeletal systems, as well as an introduction to clinical conditions related to these

systems. Specific topics include the development of these systems and an overview of common developmental abnormalities; recognition of the structural components of skin, cartilage and bones, skeletal muscles and tendons, and joints at multiple levels of organization ranging from cells and tissues to gross anatomical structures; the physiology and biomechanics of muscles, and their actions at joints. Related topics in dermatology, genetics, imaging, microbiology and infectious disease, neurology, nutrition, oncology, orthopedic surgery, pathology, pharmacology, rheumatology, and burns and wound healing will be discussed in the context of these foundational concepts.

Prior to beginning Fundamentals, MS students are enrolled in ***Graduate Medical Physiology I***, covering *Cell, Muscle, and Cardiovascular Physiology*. Later in the year, from March through May, while medical students are enrolled in the Brain, Mind, and Behavior portion of the M1 curriculum, MS students are enrolled in ***Graduate Medical Physiology II***, covering *Renal, Respiratory, Acid-Base, Blood, GI and Endocrine Physiology*. Both GMP courses are based on the prior discipline-based Medical Physiology course at the College of Medicine and students are evaluated using the *same secure exams* that were used to evaluate medical students and benchmarked to those between 2008 and 2011.

Also, from January to April, MS students take ***Statistics and Experimental Design***, a course that examines the basic application of scientific statistical principles in clinical research, including the ways in which such research is conducted, evaluated, and applied to patient care.

MS students will also take ***Neurophysiology*** in March and April. This course provides a broad overview of the subject with a specific focus on physiology as well as recent findings in research.

Finally, students will work on various aspects of professional development and critical thinking and analysis throughout the year. Topics covered will be interviewing skills, oral communication skills (scientific presentation), and writing skills (e.g. personal statement and scientific analysis). Opportunities to interact with faculty advisors in the department and around the UC Medical Center will provide a valuable opportunity for mentorship.

Advantages:

One of the main advantages of this program is the direct integration with medical school classes; if you've ever wondered what it's like to be a med student, taking classes with them is a great way to find out. The information is, predictably, similar to undergrad courses in the same subjects, but you learn to an entirely different level of detail, and the pace can seem relentless. Although you won't be an actual medical student, this program will give you a good taste of what medical school is like - the long hours, the stress, and the rewards of learning medicine. And if you're looking for a way to prove to an admissions committee that you can handle the workload, coming here and beating the med student average is just about the best way to do it.

Another advantage of this program is the small size; there are only about 32 students in the program, which means there is a lot of interaction, especially with the Physiology faculty. They certainly know who we are and are more than willing to help us with the admissions process. Several of the Physiology Faculty are either current or former members of the medical school admissions committee, and they've conducted interviewing workshops for us, etc. It's a clear advantage over many other masters' programs.

Preparation for the program

Being prepared is important since you will need to "hit the ground running" on the very first day of class. The fall semester has proven to be the most difficult and important, due to the increased difficulty of the medical school classes and the need for your best performance in order to supplement your applications with your current grades (if you choose to apply to med school while in the program). In most cases students will already have the MCAT behind them, and this is highly recommended. If you decide to re-take the MCAT, it is advisable to wait until the following summer, since the curriculum represents excellent preparation for the MCAT; there is ample time to take it in June or July following the program, and you will have scores in time for the new admissions cycle. Students have reliably performed very well on the MCAT after completing the program. If you are planning on applying to medical school while in the program, you should make every effort to have your AMCAS and secondary applications complete and submitted before classes start. There will not be a great deal of time available to write application essays.

Also once classes start, you will want to obtain a “letter of intent” from the program director. This is basically a letter summarizing the program. You should send this letter out to all of the medical schools for which you complete secondaries. This will let schools know to be looking out for grades, update letters, and exactly what the program entails.

What classes are like

Med Classes (the medical school blocks taken *with* the med students): Fundamentals of Molecular Medicine, Fundamentals of Cellular Medicine, and Musculoskeletal-Integumentary.

These classes are the main focus of the curriculum and last throughout the fall and spring semesters. The lectures for these classes are generally PowerPoint presentations and are posted to Canvas or LCMS+ (the internet-based tools that UC uses to manage classes) either before or right after the lecture. In addition, classes are webcasted and recorded for later viewing. Because all the PowerPoint files and recordings are posted online, catching up on a missed lecture is fairly easy. Most students attend the lectures daily; it’s easier to know what they’re pointing at on screen with the laser pointer, which you may not get listening and viewing later. However, there is no penalty for missing classes and the medical students are openly encouraged to study in whatever manner works best for them. Just be sure you listen to and take detailed notes on every lecture, skipping is a no-no and will come back to bite you on test day. Also, there will be some required sessions involving patient presentations and in-class quizzes, make sure to keep up to date on the schedule and NEVER miss a required session. All anatomy sessions, both those in the cadaver lab and those with peer-practice surface anatomy, are required as well. There are weekly tests in Fundamentals and bi-weekly tests in MSK, so be sure you don’t fall behind. These sessions help to keep you caught up with the material and are a good way to judge your progress. Exams are multiple choice, but they are difficult. After exams, there will usually be some form of exam review. Take advantage of this time – you can’t improve if you don’t know your weaknesses. EVERY question on a weekly or bi-weekly exam will be based on information on lecture slides. While looking at outside material can help, do your best to know the slides cold. One outside source which may be helpful is the “Internal Medicine CD files” found in Canvas. While the old tests may not resemble your tests 100%, they are very helpful at gauging your progress. This is more true for the GMP classes (below), but these

old tests are still a great review tool for the medical blocks. Another very good resource for the tests during the medical blocks are board review books in the appropriate topics. First Aid and BRS (Board Review Series) both provide good outside summaries of testable material. While weekly/biweekly exam questions are written by the course director and each week’s lecturers, end of block exams consist entirely of NBME questions. Familiarizing yourself with the multitude of board-like questions available in review books and online will be to your benefit.

More advice for the med blocks

“Utilize your LC preceptors and mentors, which is why it is why it is imperative to form a good relationship with them - they are a huge help in telling you what to expect in the classes.” Also, make Anki your best friend starting from day 1. Learn how to use the cool features to optimize your studying.”

MS-Specific Classes *not* taken with the medical students

Graduate Medical Physiology I & II: All of the above applies, except for the portions regarding attendance and the last bit regarding using board review books. Unlike with the med school classes, attendance at all of the GMP lectures is mandatory. You are in a class with only the MS students, so if you don’t show up it’ll be obvious. Not to mention that some lecturers give daily quizzes which can help boost – or bring down – your grade. Take advantage of the small class size and the expert instructors, most of whom were or still are instructors for medical school classes. The primary difference is that the med school exams will have a strong emphasis on pathology, whereas the GMP exams will focus much more on the details of physiology. *Understanding* is much more important than *memorizing!* Several passes through the material is the best way to succeed in these courses.

Statistics and Experimental Design for the Biomedical Sciences: Be active in class and put solid effort into each workshop. This class isn’t meant to be tricky and is simply about putting in the work and being an active participant in class sessions.

Neuroscience: This class is relatively new so there may yet be some changes. Each class focuses on a different aspect of neurophysiology and behavior, and the course can serve as good preparation for the MCAT for students intending to re-take it after the program.

More advice for classes in general

“Adapt your study habits for each one, what works for one class might not necessarily work for another. Don't listen when people tell you a class is easy and you don't need to worry about it. Go hard in every class.”

“Underestimate NOTHING. Every class has its own challenges, but they are all difficult in their own way.”
Do not prioritize anything else above doing well in this program. You only get one shot.”

Capstone Project (This course has been re-configured for 2018-2019 & 2019-2020)

The literature review paper is very important in that it accounts for a large portion of your overall GPA for the program. Thus, completing the review paper to the best of your ability is crucial to help ensure you complete the program and earn a Master of Science degree. Give good thought to which type of project you want to do. Most advisors in the department are better able to facilitate a literature review; as well, a literature review can be more “on your own time” while a traditional research project requires time in the lab. A research project may also necessitate seeking an outside advisor depending upon your interests and who's available. On the other hand, if you don't already have significant research experience, this is a great opportunity to gain more exposure. If nothing else, you can gain a better understanding of the difficulties associated with research (!) as well as the degree to which you might want to make it a part of your future career. The majority of the work on your review paper will be in the spring semester and to some extent during the early part of next summer, but getting started earlier is better – you can start in the fall if you are committed enough. During the first few weeks of school, you will need to select a topic and a faculty advisor. When selecting a topic, it is most important to choose a topic in which you are interested. Each topic has many different aspects which allow you to focus on an area that interests you. It is also important to select a faculty member with whom you will be able to work well with. Some faculty members will provide a very structured approach while others tend to allow the student to take their own approach. Throughout the first two semesters you will need to begin reading articles and meeting with your advisor. An outline will be due at the end of the fall semester, so you will need to be familiar with your topic by this time. A quick piece of advice – get to know the faculty early and find your advisor earlier rather than later. Developing a good relationship with your advisor early in the year and having a general idea of where you are

going with your project will make life a lot easier when it comes time to work on it.

Additionally, your faculty mentor may also be asked to contribute to your letter(s) of recommendation that the Program Director will send out to AMCAS, so getting to know your mentor early is clearly an advantage to you. One recommended strategy is to try and meet with your mentor once a week to discuss a paper(s) you have read, to ask questions, and just to get to know them. Writing the initial draft is one of the hardest parts and can take several months. Once you have a good draft, complete with figures and references, it is a good idea to have other students and/or faculty members read it and give you feedback. Revising and editing can also take a long time; you may have to read more papers and possibly re-work some of your ideas and conclusions. The entire process requires a lot of effort and can certainly be challenging, but it is not impossible. The best advice is to start early and plan on working on your review paper throughout the entire year. This will help you in several ways. One, by starting early, you will avoid the stress of meeting deadlines. Second, reading up on your subject early on will give you the knowledge to attend seminars and guest speakers that may come to present on your topic. There are a lot of high profile researchers from around the country who come to UC to give presentations, and odds are that you may have read some of their work in your research. Being able to talk with them about their ideas and asking them questions can be incredibly helpful. Finally, writing your review paper is a process of self-education and can be a great supplement to the didactic courses you will take. The amount of research you do should make you almost an expert in some fields, which can be incredibly helpful when you encounter the same material a month or two later in one of your classes. Similarly, everything you learn in class throughout the year will help you write your review paper.

Other learning opportunities

The biggest advantage of a program of this sort is that you gain access to a college of medicine. One of our classmates made a contact with the chair of cardiothoracic surgery, and secured an open invitation for our class to the weekly teaching lectures in that department. A couple of students have been able to scrub in and observe surgeries with that department. Others worked in the emergency and radiology departments. There are many medical and civic volunteer opportunities both close to the University and across the city. A demonstrated commitment to

volunteerism is an important component for any medical school application, UCCOM included. Here's a list of a few opportunities:

Cincinnati Children's: A world-renowned pediatric hospital that is ranked within the top five nationally. They will require a TB vaccination, two reference contacts, an application form, and a steady commitment (for students that is approximately 40 hours per year). More information can be found at:
<http://www.cincinnatichildrens.org/give/volunteer/>.

University Hospital: The main teaching hospital for the University of Cincinnati, College of Medicine. There are numerous opportunities here, and many students have set up shadowing, work, and/or volunteer opportunities in the emergency medicine, cardiothoracic surgery, and radiology departments.

One City – This is an umbrella organization for many volunteer opportunities in Cincinnati that provide assistance and outreach for tutoring children, assisting the homeless, employment training, and provides a health clinic for those discharged from hospital services but are not able to receive follow-up recovery care. Upon registering with them they will email or call you with volunteer opportunities that they need staff for. You may choose as many or as few as you like. This program is popular among some of the medical students because there is not a set schedule and events are often on the weekends. More information can be found here:
<http://www.onecity.org>.

The National Underground Railroad Freedom Center – A dynamic center and satellite of the Smithsonian Institution located in downtown Cincinnati on the banks of the Ohio River. In addition to their powerful exhibits on the history and continued presence of slavery, they frequently hold many outreach activities that require volunteer help. If you are involved with the exhibit aspect of the Center they may need you more regularly, but if you are involved with events only, there may be more flexibility in scheduling. More information can be found here:
<http://www.freedomcenter.org/volunteeringatthefreedomcenter/volunteering.html> .

Starfire Council – An organization that pairs volunteers with groups of disabled individuals of all ages. There are all sorts of outings and events, and it really doesn't even feel like volunteering – you just hang out and have

fun with everyone! Their website provides more information on the program, and is available at:
<http://www.starfirecouncil.org>.

Med Mentors- Med Mentors is a great opportunity to give back to the community. Essentially you (and another MS student-if you choose to pair up) are paired with a mentee, anywhere from elementary to high school. Throughout the year you will form a meaningful relationship by activities that you choose to do together. Dr. Lim is the faculty advisor for this program, so keep an eye out for her email at the beginning of the Fall.

Endzone Tutoring Club - A weekly tutoring club that serves local Cincinnati students of all ages. Endzone usually meets on Saturdays from 10am-Noon, and you are paired up with a student in a subject you feel comfortable with. It's a great way to sharpen your communication skills while also impacting the local community. More information will be sent via email at the beginning of the Fall

That's just the tip of the iceberg. Cincinnati.com is a website that features things to do in Cincinnati and also has a diverse list of volunteer opportunities:
<http://shopatcincinnati.com/volunteer/oppselect.asp>.

Student Acceptances

What you're probably wondering more than anything is: Does the program work? Like every program, you get out of it what you put in, and if you do well, it will help with admissions. It won't get you in on its own, but if you combine it with good qualifications before coming, excellent results are possible. Similar to most programs of its type, the MS program helps most when compensating for a single "blemish" on an area of your application – typically providing the most help for students with a low GPA in relation to a solid MCAT. However, regardless of your situation, there is no doubt that this type of program is a message to admissions committees that you are serious enough to invest a year of your life (and a good amount of money) in your pursuit of medicine. Completion of this program will unquestionably significantly strengthen your application credentials, as seen by the incredible rate of acceptance for program graduates (with typically over 90% of all graduates ultimately gaining acceptance to medical school).

Graduates have been accepted into a number of different schools, including the following:

Armed Services Medical School
California Northstate University College of Medicine
Case Western Reserve University School of Medicine
Chicago College of Osteopathic Medicine
East Tennessee State College of Medicine
Eastern Virginia Medical School
Howard University College of Medicine
Lake Erie College of Osteopathic Medicine
Marshall University Joan C Edwards School of Medicine
Medical College of Georgia
Medical College of Wisconsin Medical School
Medical University of South Carolina College of Medicine
Michigan State University College of Osteopathic Medicine
New York Medical College School of Medicine
Northeast Ohio Medical University College of Medicine
Nova Southeastern University College of Osteopathic Medicine
Oakland University William Beaumont School of Medicine
Ohio State University College of Medicine
Ohio University Heritage College of Osteopathic Medicine
Philadelphia College of Osteopathic Medicine
Rosalind Franklin University Chicago Medical School
Stony Brook University School of Medicine
SUNY Brooklyn
SUNY Downstate College of Medicine
SUNY Upstate College of Medicine
Temple University School of Medicine,
Texas A&M Health Science Center College of Medicine
Touro College of Osteopathic Medicine
Tulane University School of Medicine
Univ South Carolina School of Medicine (Columbia)
University of Calgary Cumming School of Medicine
University of California at San Diego School of Medicine
University of California at Los Angeles School of Medicine
University of Cincinnati College of Medicine
University of Cincinnati College of Medicine (MD/Ph.D)
University of Colorado School of Medicine
University of Iowa Carver College of Medicine
University of Kentucky College of Medicine
University of Louisville School of Medicine
University of North Carolina School of Medicine

University of Pennsylvania School of Dental Medicine
University of Rochester School of Medicine and Dentistry
University of Texas Health Science Center at San Antonio School of Medicine
University of Toledo College of Medicine
University of Wisconsin School of Medicine and Public Health
Virginia Commonwealth University School of Medicine (MD/PhD)
Virginia Tech Carilion School of Medicine
Wayne State University School of Medicine
Western University of Health Sciences College of Osteopathic Medicine of the Pacific
Wright State University College of Medicine

Study Spots

There are a variety of places to study around the University and Cincinnati. These include:

Graduate student room – An old lab in the department has been designated as study space for students in program. Each of us has our own desk for studying along with storage lockers and some comfy chairs for relaxing.

College of Medicine – There is abundant study space throughout the medical school building and with your student ID you have access to it 24/7.

Panera Bread Company – Two locations, one on Calhoun Street on the south side of West campus and another in the Hyde Park Plaza. Free refills on coffee, enough said.

Sitwells Coffee House – Located right on Ludlow Ave. Great coffee, food, and space to study.

Awakenings – Located in the Hyde Park Square. Good coffee blends, espresso bar, plus art, music, and wine tastings (Not recommended while studying). Open late on the weekends. Parking can be tricky.

Starbucks – There are several around, one in the hospital, one on McMillan Street south of West campus, and a new one opening next to Awakenings.

IHOP/Waffle House – Good, cheap, late night eats. Can be a lifesaver during exam week.

Housing

Relative to many parts of the country, housing is fairly inexpensive in the Cincinnati area. Most students live in the Clifton, Ludlow area and walk to class every day or live farther away in Hyde Park or Mount Lookout (about a 10-15 minute drive) and drive into school. There is a parking deck attached to the medical school building and you can buy a parking pass from the University. Also there is a great bus system around the campus and the city. As students, we get free bus passes so finding somewhere on a bus route can also be very convenient. If you can come out to visit and look at some apartments before school starts. Simply looking at apartments online can be somewhat deceiving compared to looking at the in person.

Recreation

The University of Cincinnati has an incredible Recreation Center, that was just recently constructed. There are several basketball courts, racquetball courts, a climbing wall, indoor track, very spacious free-weight and cardio areas, and a swimming pool with whirlpool. Also there is a brand new gym in the basement of the medical school building. Check out their website at <http://www.uc.edu/reccenter/>.

There are quite a few things to do in Cincinnati, from pro sports teams (the Bengals and Reds) plus UC and OSU in college sports. There is a very good zoo a few blocks from the medical campus, and an aquarium just across the river in Kentucky. The Air Force Museum in Dayton (~40 miles away) is huge and impressive. The Kings Island amusement park is just outside the city, and Cedar Point (“one of the best amusement parks in the world” according to one of our classmates) is 3-4 hours away. A group of us recently went ice skating at Fountain Square (Cincinnati’s version of Rockefeller Plaza). As far as restaurants and nightlife, some highlights mentioned by our class:

The Hofbrauhaus (“1 of only 3 in the world, great Dunkel, get a DD before embarking and bring your table dancing shoes”)

The Newport Levee “with a ton of fun bars (Bar Louie amongst others)”

Mount Adams is “a super cool place to go and hang out. There are a lot of super trendy restaurants and very nice houses with a great lookout of the city.”

Mount Airy “has a number of really nice (very unpopulated, except for the deer) hiking trails for a study break.”

Mount Lookout “has several great restaurants and bars including a pizza place open until 4am on Friday and Saturday and several half price sushi joints”

Hyde Park Square “great food and drink”

Rookwood Plaza in Hyde Park “The Pub, Rusty Bucket, Buca di Beppo, and The Wine Guy Bistro – several places with great food and a great selection of drinks”

Final thoughts from last year’s class: “Don’t isolate yourself from your classmates - they will be a great support to you, in both good times and bad.” “You’re in this program for a reason. No one owes you a thing. No one will baby you or spoon feed you in this program. You need to work for everything. Do well, and you will get into medical school. Learn to work well with your classmates. You’re not competing against them. If everyone does well, everyone gets into medical school. That is the dream. GOOD LUCK!”

More two cents’ worth

For posterity, this section has more comments from individuals from previous classes

1st Edition

I think this program has a lot of positives that I hadn’t anticipated:

1. The small class size — we really get to know one another and we are integrated very well with the medical students.
2. The medical students here — the overwhelming majority are very supportive and friendly. I would say I have not experienced any negativity from them and if anything have made good friendships and gotten great perspectives from several.
3. The faculty — I was surprised how every lecturer reminds us constantly of their open door policy; some even give us their home phone number! The point is they give us multiple ways to contact them and remind us not to hesitate if we need help with concepts we may be struggling with.
4. The opportunities from the hospital — the cardiothoracic surgery department has kind of adopted us! We are allowed to attend their

weekly cardiothoracic conferences which include journal reviews, case reviews, or lectures on specific types of imaging and procedures. It is a great place to try out your new physiology knowledge, and indeed, one of the thoracic surgeons makes it a point to question us on what we've learned that week! We have also been invited to shadow cardiothoracic surgeries and tour their research laboratories. I have been amazed and honored to be a part of this experience.

5. The research opportunity — you are working one-on-one with a faculty member on a research topic chosen from a list at the beginning of the year. Although the bulk of this will be during the spring and summer quarters, early and intense work early has facilitated some of the students networking with other researchers, and getting clinical, lab-based, and conference invitations.

2nd Edition

That said, I also have some recommendations:

1. Start strong, stay strong. Even if you have had biochemistry and physiology before, you will study this in a new (i.e. all clinically-oriented) and intense way. You will need to study the syllabus several times over, and do every old/practice quiz or test that comes your way. Go over your questions carefully and try to think about the material from every angle possible.
2. Try to visit here before you move. There are dozens of neighborhoods here and lots of types of housing available. It might be worth a trip to make sure that you will be living in a place you like, that is close enough to things you need, and will feel like it works for you.
3. Start on your review paper early and work hard. Being ahead of the curve here may open some opportunities for you that you might not otherwise have had.
4. If you are applying this year, have your AMCAS and secondaries submitted ASAP, i.e. during the summer if possible.

3rd Edition

Take advantage of the plethora of resources available to you at UCCOM! As a previous classmate mentioned, you are attached to the hospital – there are literally hundreds of physicians who work in an academic environment within a one mile radius of where you will

attend classes. Don't be shy, if you want/need to shadow, look up physicians who practice in the specialty you're interested in and call or email them! My classmates and I both found everyone we contacted very open to allowing us to shadow, all it took was a simple email explaining who we were (MS student at UCCOM) and why we were interested in shadowing them. Another major advantage of being at the medical school is your access to the admissions office. Use it. You will be introduced early in the program to the Assistant Dean of Admissions. Meet with them early and often to address weak points in your application and seek advice for what you should be focusing on (besides doing well in the program, obviously). These meetings are important to not only refine your application, but to show your interest in UCCOM. One caveat is not to assume that addressing the issues they outline will automatically get you in – but there is no doubt that it will vastly increase your chances.

The last thing I'd like to add is perhaps the most important piece of advice. Do not get discouraged, ever. If you get a bad grade, brush it off and move forward – believe it or not grades in the program aren't everything. This isn't to say that doing well is not important – it can only help you – but grades alone don't guarantee successful admission to medical school. Finishing the program, and finishing strong, is by far more important. Also, if you don't get into medical school on your first application cycle, be it during the program or the year after, don't get down! Re-apply early and focus on improving yourself during your gap year. Keep meeting with the deans of admissions at any schools you are seriously interested in. Get a job (don't forget you have an MS degree now). Shadow at hospitals associated with schools you're interested in. Continue volunteering wherever you live with an organization that you are passionate about. Do some research if you can. Persistence and hard work really do pay off, and wallowing in self-pity will not help you one bit. There is no method to the madness that is the application process, just accept things as they come and in the end I assure you that things will work out if you keep focused and stay positive.

4th Edition

A lot of the things that I wanted to talk about were already covered by previous writers, so I thought I'd share some perspective on other things that I think are also important for having success in the program and beyond.

Probably the hardest thing for me throughout the year was staying focused and motivated. I feel a good analogy would be that studying for the MCAT is like a sprint, whereas this program is more of a marathon, at least in terms of staying focused. At the beginning of the year, everyone is excited about starting school again and studying together. But as the weeks tick by, and you take test after test with no word from med schools about the status of your application, it can be hard to summon the motivation each day to slog through the hours of lecture and review material. Burnout is definitely a real thing to be mindful of, and it's really important to find whatever it is you need as a source of motivation. Make sure you nurture your passions!

Additionally, I think it's important to keep in mind, while you are in the program, that you really are being evaluated on all aspects of your performance. The most obvious aspect is your grades and how well you perform on the many, many tests you will sit for. But I think what is also as important is how you interact and fit in the med school environment. As Dr. Lorenz will undoubtedly remind you, it's important to make a good impression on the various people you run into on the med campus. The med school places a good deal of importance on "professionalism" so you want to demonstrate that as best you can. This means things like not being late for classes or events, participating in discussions, and generally acting like this is where you want to be. Even if you would rather be at home studying for an upcoming quiz, it's important to be mindful of the fact that faculty and med students take a lot of time out of their day to help you succeed, so it's important to be respectful and polite. Even if you feel like you would be more productive doing other things in other places, try not to show it. Trust me, people will notice if you act like a jerk, and it would really be unfortunate to put all that hard work into studying and doing well in class but then make a bad impression in the minds of the faculty due to behavior. Listen to what Dr. Lorenz and Dr. Mackenzie have to say, while sometimes it's difficult to hear things after a rough day, or brutal exam, in the long run, their guidance and advice has proven to be sound time and time again. This is not to say that you should try to remain as inconspicuous as possible though. On the contrary, you should really take advantage of this year to put yourself out there and learn as much as you can about your future career. Of course grades should come first, but you should definitely also do things like shadowing and getting to know some of the first year med students that

you run into. Engaging with the med students is really helpful, especially in anatomy, and you can often pick up tips or review materials that are super helpful. Even if you are initially a shy person, you will want to work on these skills eventually to become a good doctor in the future, and now is as good a time to start as any. Even though almost all of your time will be dominated by studying, making room for small pockets of time to focus on other things will be worth it in helping you stay focused on the overall big picture goal of becoming a great physician.

5th Edition

Don't think of the Master's Program as a program that will get you into medical school; think of it as a valuable part of your training as a future physician. What you get out of this year is going to be determined by what you put into it, and if you only put in enough to get into medical school, you'll probably be successful, but you'll miss out on such a rich and valuable opportunity. The benefit of this program extended far beyond getting accepted into medical school and the skills I learned and the connections I made during my time as a Master's student have been undoubtedly invaluable. I walked away from this program with skills that will be incredibly valuable as a medical student, resident, and future physician; skills that I didn't and won't get during my 4 years of medical school. I have a strong conceptual grasp of biostatistics, I can evaluate scholarly articles and experimental data in a more sophisticated way, and I learned how to handle myself seriously and professionally as a student.

If you really dedicate yourself to your capstone and really take the time to critically read and interpret the literature, you can become an expert in your area of focus. And when I say expert, I don't mean that you'll merely be able to regurgitate facts. As an expert, you'll have a sophisticated and nuanced understanding of your area of expertise and you'd be able to speak as an individual that is familiar with current trends and future hypotheses. Not only that, but if you take the time to really understand the experiments, results, and reasoning that led to our current understanding of a particular topic, your ability to evaluate literature will be far beyond that ability of any medical students and even on par with some senior residents.

Doing well in this program opens doors. If you can impress your capstone advisor, you may be invited to do lab work and potentially get published. If you're

enthusiastic about what you learned from your review of the literature, you may be allowed to continue your work as true, blue research on the bench. I'd like to emphasize this because not all publications are created equal and admissions committees as well as residency directors recognize that. Being an author on a case report is not going to be viewed in the same manner as being an author on an experimental study. To be published as an author of a study, you need a much more sophisticated understanding of the topic and the implications of the findings than writing up an interesting case work up. Moreover, speaking to summer program directors for potential summer projects between M1 and M2 year, many explicitly state that they screen based on GPA and MCAT. However, often times, these programs will screen GPA based on your MOST RECENT degree. This means that although your application may have initially been screened out due to your undergraduate GPA, doing well as a Master's student and having a great graduate GPA may allow you to participate in summer programs in which you may not have originally qualified.

But more than anything, what I most appreciate about the Master's program was that it created an environment where I could continue to mature. In my mind, everyone who enters the Master's program is doing so because they acknowledge a deficiency in their application. Maybe it was for a lack of effort; maybe there were extenuating circumstances; maybe there were missed academic opportunities. Regardless of the reasons for those deficiencies, recognizing and acknowledging those deficiencies required an immense amount of maturity. However, maturing isn't an instantaneous process and developing ourselves requires that we surround ourselves with the right people, with the right motivations, and in the right environment. The faculty and staff won't just treat you as graduate students; they won't just treat you as medical students; they will treat you as future clinicians if you prove that you can conduct yourself maturely and professionally. The faculty at UC won't assume ignorance; they'll assume knowledge. They won't assume complacency; they'll assume ambition and passion. What I valued the most from this experience was that the people within the Master's program truly believed that the students were capable medical students and had the potential to be fantastic physicians if given the opportunity to do so. And as a medical student – as a future physician – I approach my training with so much confidence because I am comfortable conducting myself as a professional.

And it is because I treated my Master's year as an extension of my training as a physician, I am more confident about this than of anything else: graduating from this Master's program will make me a better physician.

6th Edition

86 cafe on Vine - Good coffee, spacious, plenty of outlets and rarely crowded. They also have a pool table and board games for breaks in-between long study sessions. The only downside is that they close early. *Rohs cafe* on McMillan - Opens late, spacious, great food nearby. It can get noisy so headphones or earmuffs are recommended.

My 2 cents

Previous years have done a great job talking about most aspects of this program. I will try to succinctly add my 2 cents without belaboring any point.

Capstone: Take advantage of your capstone project. Some of my peers published multiple papers this year, received patents and are applying to grants for their efforts, do not limit yourself. You will be able to find time for ambitious projects once you figure out how to study.

Community: There is no competition with your peers, SMP or M1. Burnout was real and it was important that we worked together. Any success we had this year was due to the support and friendship we shared.

Connections: All faculty members were welcoming in both GMP coursework and blocks, approach them freely. However, our MVP resources came from previous SMP-ers. Their advice was invaluable, take advantage of them.

Health: There are many advantages to exercising and you have a gym available to you. Healthy body, healthy mind.

Maturity: Studying and doing well in this program was our job. We put in whatever it took, whether that was 8 or 16 hours a day. And like any endeavor, failures and struggles were a part of it. Your resilience will define your success in this program so bounce back and do better.

Shadowing: If you're interested email physicians or ask your clinician-professors after class. Most requests will

be accepted. This is a great opportunity to see what you've learned put into action.

Study methods and Test-taking: We all came into this program with a different study method than the one we left with. It was important to constantly reassess what worked and what didn't. Here are some concepts and techniques that worked for us.

Studying and test-taking are in-part, memorizing facts and applying those facts logically. However, the main tenet is building an expert intuition. In other words convincing yourself that those facts make sense and forcing them to become second nature. As a student, your goal will be to see an answer choice and instantly be able to determine whether it is right or wrong and most importantly, why. The why is often a fact or formula from a lecture slide (fundamentals) or textbook (GMP).

GMP: We focused on practice problems and the GMP textbook. When doing practice problems it helped to explain in a few words why every answer choice was right or wrong. Bonus points if we were able to remember exactly where the information was presented, which slide or page in the textbook. In other words, we identified the key concept that was being tested. Every concept was found in the GMP textbook, therefore ctrl + F was a lifesaver. When reviewing concepts or trying to connect repeating concepts, ctrl + F and reading any relevant text was helpful. Anki was great for memorizing factoids.

Vocabulary, factoids and concepts must be repeated. We needed facts to become second nature and we needed to correct inconsistencies in our logic. Things that we figured out one day was definitely gone by the next. Please do not doubt this, it will NOT stick unless you repeat it. We found many ways of doing this: reviewing questions, Anki, talking things out with friends, repeatedly drawing things on the whiteboard... multiple passes was the name of the game.

For assessments in fundamentals our go-to resources were: learning objectives, slides, lectures and practice problems from BRS and Lippincott's. All information tested was from our slides and lectures unless explicitly mentioned i.e. clinical correlates from Moore's. Workflow and habit were important. A common workflow would be to: watch lectures at 2x while pausing to take notes on slides, re-read slides while

making review material, review the following day before watching the new lectures. On Saturday: attend the review session, take notes of things to review, review them, group study every single slide in the evening. On Sunday, do questions all day from BRS and Lippincott's, especially biochemistry.

This method was most effective when we approached it actively and not passively. Again the purpose was to create a strong intuition. An effective way to learn actively was to constantly ask ourselves questions, get them wrong and look up the right answer. We learned better by making mistakes and correcting them. Another method was to finish the statement "this makes sense because...". This was often best answered by the verbal lectures and google. If we understood and memorized everything on every slide we were almost guaranteed a good score, it was doable with multiple passes. We did it, you definitely can too.

For finals in fundamentals, we reviewed slides and did as many questions as we could find. This meant collectively scouring multiple textbooks. First Aid was better for organ blocks and a supplemental resource in fundamentals.

Biostatistics has been addressed earlier in this guide. Musculoskeletal was not a part of our curriculum, however, as it is an organ block, first aid and USMLE questions will probably be helpful throughout the course and especially for the final.

As a final word of encouragement, whatever your reason for coming here you are beginning with a blank slate and have the chance to excel. This is a great opportunity and the responsibility to take advantage of it now lies solely with you. There have been many others who have walked this same path that lies before you. We have been there, we struggled but we made it through. Congratulations on your acceptance and hopefully, you will find, as we have, everything you want and more.

Final words

Apologies for the length, but hopefully this document gives you some idea of what to expect this upcoming school year. If you have questions or comments, contact your assigned alumni mentor, or any of us – especially those of us who are here attending UCCOM – and we'd be happy to help any way we can (see the "Alumni" section on the MS Physiology website:

<http://med.uc.edu/msinphysiology>)