CHARLES DREW
PRE-MEDICAL SOCIETY

COLUMBIA UNIVERSITY
CHAPTER

PULSE

The Unofficial Lifeline Guide for Columbia's Pre-Meds

Creator's Letter
Princess Francois, CC'11

Dear Charles Drew Members,

Pulse was created specifically for you! The idea for creating this came after reading a similar book I received from my participation in the University of Pittsburgh's **S**ummer **A**cademic **E**nrichment **P**rogram (SPAEP) in Summer 2009. I found the book incredibly resourceful and it served as a pre-med bible to me. My only criticism was that it was not entirely written by students. I later discovered a mini premed booklet written by students of the Harvard Pre-Med Society. An overachieving Columbian, I decided I would create one written *by* Columbia premeds, *for* Columbia premeds, combining the best aspects—depth and student perspective—of Pitt's book and Harvard's. In this endeavor, I have aspired to build upon Charles Drew's diverse activities while complementing the usual guidance of Columbia's Office of Pre-Professional Advising.

The purpose of this book is to offer honest advice about how to survive (and conquer!) the intense pre-med curriculum at Columbia. The content of this book is broad but detailed in its presentation. In these pages, you will find topics such as how to pick a major, studying abroad, extracurriculars, summer research opportunities, the "gap year", and much more. Here, students share personal stories, talking openly about mistakes they feel they made and what they might have done differently. Our motivations in sharing these stories are to pass on knowledge we hope might help you achieve the same success we want for ourselves – to become physicians with a purpose, to become physicians that pay it forward, with the first step of getting into medical school. We also want to leave a legacy for future generations of pre-meds to follow.

We hope you consider our advice and realize that we were once in your shoes. Remember that there are many resources out there to help you in your premed journey. These include not only this book, but your peers, professors, doctors, medical students, and the Pre-Professional Advising Office. Treat this guidebook as a window into these other resources and think of *Pulse* as your student-written survival guide to navigating—and excelling at—your pre-med career and a stepping stone to your ultimate dream: the M.D.

I would like to thank my co-collaborators Antoinette Allen, CC'12, and Jasmine Alves, CC'13 who took on this large project enthusiastically and made sure it did not fall through the cracks. Without their hard work and commitment, this guidebook would not have come to reality. Thank you to the editing committee who read through an enormous amount of articles despite their *very, very* busy schedules. Most importantly, I would like to thank the writers and contributors. Without their words, there would be no guidebook.

We hope this guidebook will be updated periodically as we anticipate that both the needs of students and the premed curriculum will change. As a final note, I leave you with these wise words that were once given to me: "P^3 = MD." Plan, preserve, and persist and you will become the doctor you aspire to be!

All the best and much luck to everyone,
Princess Francois, CC'11
Co-President of the Charles Drew Pre-Medical Society
Creator of Pulse: The Unofficial Lifeline Guide for Columbia's Pre-Meds

Note from Our Co-Collaborator

Antoinette Allen, CC'12

Hello there! My name is Antoinette Allen and I am the Co-Collaborator for the Charles Drew Guidebook Project. Working tirelessly through the semester, my co-collaborator, Jasmine, and the creator, Princess, have managed to finagle a pre-med guidebook written for pre-med students by both current and former pre-med students at Columbia. This was a very challenging task—harder than you might think! We are all so incredibly involved that it is difficult for us to take even just an hour or so out of our busy schedules to accomplish a large task such as this. However, we are also motivated to create something to help generations of pre-meds to come. As you will see in the forthcoming pages, there are some very amazing articles from some very amazing students who took the time and effort to contribute by speaking openly and honestly in these pages about their pre-med experiences at Columbia. I thank these students and wish them great success in the future. To the reader, I hope you find this guidebook informative, relatable, and maybe even humorous at times as you read it to cure what ails your pre-med soul!

Note from Our Co-Collaborator

Jasmine Alves, CC'13

Congratulations on making the decision to become a doctor! This Guidebook, written for Columbia premed students, by past and present Columbia students, aspires to be an essential tool for maximizing your chances of succeeding here and getting into medical school. We know that becoming a doctor is a challenging yet rewarding process, so our goal in creating this Guidebook was to help make this process go as smoothly as possible for you. To do so, we have gathered as much information and advice about what it takes to be a successful pre-med student at Columbia and made that all available to you in one place. The advice comes from students just like you who have already gone through the process. In putting this guidebook together, we hope to dispel myths about the Columbia premed experience and address everything we think a premed student needs to know—from choosing a major, to finding a research opportunity, to everything in between. Along the journey to become a doctor, you may be faced with a variety of obstacles—why not avoid some of those pitfalls by learning from the mistakes and successes of other Columbia pre-meds? The content of this book will benefit both present and future generations of premedical students. That's exactly what this book allows. I am excited and honored to be a part of this project. We hope the content of the book will benefit both present and future generations of premedical students. Truthfully, I wish I had this book freshman year, but I am grateful that I have it now. Good luck on your journey to become a doctor, and enjoy the book! We are truly thankful for everyone who has taken the time to make a contribution to this project. This book would not be possible without the help, support, and contributions of past and present members of the Charles Drew Pre-medical Society.

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"Publications | The HPS Student Guide to Premed Life." *The HPS Student Guide to Premed Life | A Guide Written by Harvard Premeds for Harvard Premeds*. 2008. Web. 23 Apr. 2011. <http://hpsunofficialguide.wordpress.com/unofficial-guide-2008/>.

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Different Roads, Same Destination

Why Pre-Med? Why Medicine?

We asked a number of seniors and graduates who have successfully completed the rigorous, sometimes discouraging pre-med track, their reason for pursing medicine. We figured this would spark the thinking process in your head regarding why are you pursuing medicine. As you know, being pre-med is a long road and becoming a physician is an even longer road. Consequently, it is very important to constantly remind yourself when things get tough why you are doing this. We hope reading these responses will give you that extra motivation to just keep pushing, just keep pushing, just keep pushing!

My interest in medicine originally stemmed from my own experience of the negative effects of health care disparities: my grandmother's death. I recognized that instead of being bitter or resentful, I wanted to directly help people by providing the most compassionate care to patients. An additional appeal to medicine, for me, is its great application of various areas of science. That is compounded by my sheer enjoyment of all my medical-related experiences of shadowing and pre-med enrichment programs. I took to heart the observation that there is such a disparaging amount of minorities in the medical field despite the rapidly growing diverse population of the United States. I want be part of the increasing number of underrepresented minority, culturally competent physicians that can directly connect with patients of such diverse ethnic backgrounds and often low socioeconomic status. My passion lies in alleviating health care disparities for the community at large via becoming a physician. Hence, it is why I have such a passion for carrying out the Charles Drew Pre-Med Society's mission.

Princess Francois, CC'11

I've always wanted to be a doctor , as far as I can remember. I like helping people and just like being able to know what to do when someone is in trouble.

Melvin Green, CC'11

I decided to be pre-med because I realized I really wanted to be a physician. I wasn't, and I'm sure nobody is, pre-med just for the sake of being pre-med. Being pre-med is just one step in the process of becoming a physician. I was drawn to medicine through my interest in science, but what I really love about medicine is that it combines technical scientific knowledge with the personal touch of interacting with patients. Growing up I really appreciated caring doctors that made hospital visits more bearable. For me medicine provides the best of both worlds, it is a way of interacting with and helping patients, while simultaneously staying involved in my scientific interest in medicine.

Daniela Guisado, SEAS'11

For many people, especially for me, medicine was an interest taken up because of a sick family member or friend. I felt powerless when my father was stricken by cancer, because I did not understand what was going on with his body and I knew none of the medications and terminology. As the oldest in the family, though I was only in 3rd grade, I had to do something to take care of him. I turned to medicine. Humans have control over the body, whether through drugs or technology. Gaining knowledge about medicine is like knowing the secrets to our corner of the universe - we are our body, yet we know not our body. For people who were not inspired by the same circumstances as I, know that medicine will give you a new way of thinking, a new power. In addition, you will be making a difference in the health of others.

Amy Huang, CC'11

I chose to become pre-med because I've wanted to be a doctor for as long as I can remember. I love health science, learning new things and helping people. Becoming a physician seems like the best way to encompass all three things, so that's what I want to do.

Kimberly Laughman, CC'11

For me, becoming a Doctor means being able to help those in need; I am simply drawn to medicine. Since a young age, I have always been in a hospital because my mother worked there and dragged me with her. Eventually I became interested in the doctors who worked there, and how the hospital itself functioned. As soon as I was of age, I began volunteering in retirement homes, and then eventually, hospitals. In High School, I broke the New Jersey Record for Volunteer hours by spending 3 hours every day volunteering in the hospital. When I came to Columbia, I found an opportunity to express my love for medicine by joining the Charles Drew Premedical Society.

Brian Lewis, CC'11

I want to serve my community in a meaningful way and have a positive impact in the lives of others.

Brittany Martin, CC'11

Gazing into the rising sun after a 20-hour day of work at an intense investment bank can make anyone question their motivations. For me, I knew that I was more than capable of handling this type of work but what did I really accomplish in those 20 hours? What impact had I made? I had to find a more rewarding way to utilize my talents. I didn't have to look very far to see the transformational power that medicine possesses.

Nephrological medicine and research gave my mother a renewed life after 9 years of renal failure. Orthopedic medical techniques allowed both my brother and I to recover from the same wrist injury and resume successful athletic careers. For me, the decision to pursue medicine was based on the fact that I could apply the work ethic that brought me success in banking to a more rewarding career and change the lives of other people just as medicine had done for me.

Calvin Nash, Post-Bac'11

I want to do medicine because I'm tired of watching people who look like me – my family, my friends, my neighbors -- die prematurely. I am doing this because if not me, then who?

Kwanza Price, Post-Bacc'11

The thought of becoming a doctor always appealed to me. Good health is something that everyone strives for in order to help them accomplish their goals. I want a career that allows me to help people pursue their dreams by first helping them eliminate or minimize the obstacle of poor health. I am pursuing medicine because I want to have a role in helping improve the quality of life for members of various populations so that they can live happier. Good health is a key component to doing anything. I want to provide medical care to patients so they can all achieve everything that they want to achieve.

Connie Qiu, SEAS'11

...why not?

Patricia Rojas, CC'11

Because quality health care should be available to all and should not be complicated by cultural or communication barriers.

Jenny Ruiz, SEAS'11

Throughout my life I have come to realize that my God-given abilities would be best used if I commit to serving the sick, specifically through interventional cardiothoracic surgery. I believe in the Almighty Creator, and, in humbling myself enough to hear and understand Him, I have come to the conclusion that the best vocation for me is to dedicate my life to helping mankind defeat the atrocities of cardiovascular disease.

First-hand experience with low-income communities has shown me the state these people are in due to poor healthcare and thus poor health. The statistics show that doctors from minority and underrepresented backgrounds are more likely to work in these areas where improved healthcare is needed the most, hence me dedicating my life to raising the number of minority and underrepresented doctors in the United States and hopefully someday throughout the world.

Victor Thompson, CC'10

I want to practice medicine because I feel that medicine is a way to truly help people while at the same time belonging to challenging, stimulating, and rewarding profession.

Chris Travis, CC'11

Pre-Medical Requirements

Name: Mark Attiah, CC'09
Major: Neuroscience and Behavior
Extracurricular Activities: NSOP orientation leader; Black Students Organization; Activities Board at Columbia; Brotherhood of African Heritage; Academic Associates Program at St. Luke's, CCSC elections board; Board of visitors student representative; Lang Youth Advisor, occasional performer on the Open Mic/spoken word circuit
Random Fact: I wasn't able to legally drink until *after* I graduated.

Are you scared?

Are you tired, discouraged, worried, or nervous? Maybe all of the above? Yes? Good. That's the way it's supposed to be. The pre-med track is nothing more than a haze. The earlier you realize this, the better off you are. Being pre-med means that there are hoops that you have to jump through. This is only a bad thing when you realize you don't have the patience or the interest to jump through them. Everyone has to pay their dues.

You pay your dues by having to take these pre-med requirements classes as a rite of passage:

1 year of Chemistry + 1 semester Chemistry lab
1 year of Math (usually completed by 1 year Calculus by most Columbia University Students)
1 year of Physics + 1 semester of 3 credit Physics lab if in SEAS or 2 semesters of 1 credit Physics lab if in CC
1 year of Biology + 1 semester of Biology Lab
1 year of Organic Chemistry + 1 semester of Organic Chemistry Lab
1 year of English (completed by 1 year of Literature Humanities or 1 year of Contemporary Civilization)

***Please note: These pre-med requirements are completed in a different order depending if you are SEAS or CC and your major. Please check out sample schedules of CC and SEAS pre-meds for a better idea of the normal completion of these requirements.*

In my mind, being a pre-med at Columbia is not a compliment. The courses have a way of bringing out the worst in people. The sometimes frantic, neurotic, high-strung stress junkies that populate 209 Havemeyer can be intimidating; I had to keep reminding myself that bedside manner isn't learned in undergrad.

Make no bones about it; it's tough. But, contrary to popular belief, it's not impossible.

Don't let the pre-med advisors discourage you too much; your word is the last word. Get to know your professors by making a schedule of office hours and going to them. Make a study group if that works for you, but don't fall into the trap of not being prepared for them or having too many people in them. You won't get anything out of them and you'll have wasted your time.

Doing research is a hoop you have to jump through. Do it. If you like it, stick with it. If not, then you can say that it's not for you, no harm, no foul. When you do it though, try to make sure that you do something that actually is interesting to you. You might be surprised.

There's no reason that you can't be a doctor if you really want to. The track is to test the second part of that sentence. Studying for science classes is an art that has to be refined. I'm still doing it now. Each course that you take is different, and you have to learn how to learn. One thing that holds constant is that doing problems always helps. The more old exams and practice problems you can get your hands on the better.

Applying is all about timing, and the rule is the earlier the better. I had my AMCAS verified by July 13th which is considered early. I gave myself a 1-week time window between when I received a secondary and when I sent it in. Just make sure you don't make mistakes. Interviewing is only scary at first. Once you get some experience on the interview trail, you get more comfortable.

Make time for life outside of the classroom or the lab. Do things that you enjoy doing outside of medicine. Not only do medical schools want well-rounded students, it helps to put your mind at ease, knowing that you're not turning into a robot. I'm sure your friends and significant others will thank you. Thus, they should thank me for telling you. Tell them I said you're welcome.

Things are better on the other side, at least where I am. Things are less adversarial, and people actively try to help each other out. The work doesn't get any easier, but assuming you enjoy this medical stuff, you'll be learning what you want to learn. So there is light at the end of this tunnel, just lock in on it and the tunnel won't seem so dark.

The Columbia Pre-Med Experience

Name: Eric Ndikumana, CC'12
Major: Neuroscience and Behavior
Extracurricular Activities: Cross country/ Track& Field
Random Fact: I am the eighth child of nine

Almost three years ago, I walked through the gates of Columbia University, very optimistic about my career goal. From a very young age, I had always wanted to be a doctor. Walking through those gates was one of the many steps that I had to take to in order to accomplish that goal. From as early as middle school, it seemed that everyone that I told I wanted to be become a doctor told me horror stories about the premed experience—it was brutal, atrocious, nearly impossible. I was finally here at Columbia University to face what I had been warned about.

Coming to campus, I was very naïve. I was confident that hard work would definitely equal success in the premed curriculum. Then I had my first chemistry exam. I performed well below average. I not only failed my first college exam but worried that I might also fail a major pre-med requirement. I had spent over a week preparing for this exam. For the first time, I finally understood what most people had described about the pre-med experience. Fear and frustration about my failure began to overwhelm me and the weight became unbearable. I could not believe that I was failing a premed course. After all, it was the very first exam I had failed in my entire life. Some weeks passed, and I met other premed students. I became great friends with them and spent countless hours, day and night, studying with them and preparing for the next exam. Finally, success! I did very well the second time around.

The following year, like most premed students, I took Physics, Calculus and Biology. Physics and Calculus were not as bad as I had had adequate high school preparation. I performed fairly well in these two classes and was above average. But then there was Biology. Almost all the students who had taken this class had described Bio with Dr. Deborah Mowshowitz as one of the hardest classes at Columbia University. Like them, I came to learn that this class was not a joke and also one of the hardest classes I had ever taken at Columbia. I had never taken any biology class in my life before Dr. Mowshowitz's class. All the material was brand new to me. I spent countless hours with my friends from Chemistry preparing for the first exam. Once again, I failed. It became clear to me why Biology was hard. You could prepare as much as you wanted and feel confident that you knew the material, but your efforts were no guarantee that you would pass. Biology ended up being one of my worst academic experiences at Columbia. At the same time, after finishing the course, it was a positive experience because I felt that no other class would be as difficult. I had reached the peak.

Now a year after taking my first Bio class at Columbia, I am taking Organic Chemistry. Unlike General Chemistry, after my first semester, I ended up loving Orgo. I felt confident that I could perform well and compete well with anyone. I began to feel more confident about myself and my abilities. Nothing seemed it was going to be as bad. I was just as good as anyone, if not better. This confidence, which took me nearly three years to build up, was a main key to my success with Orgo: I performed well above average.

As the end of my premed experience nears, I look back at the sleepless nights and anxiety. My success through premed greatly depended on my friends – the people whom I spent countless night studying with and who comforted me whenever I did not do well on an exam. The confidence I built up this year – the belief that I am as good and smart as anyone else -- has made this year one of the best. Looking back, I really believe that confidence is the key. But I also understand that building confidence takes time, experience, and the right support system.

Freshman Year:
Pushing Through the Start of the Struggle

Name: Doreen Agboh, CC'14
Major: Neuroscience and Behavior
Extracurricular Activities: Black Students Organization; Community Impact: America Reads; Charles Drew Pre-Medical Society; African Students Association
Random Fact: I have a twin brother.

Columbia University's pre-medical studies are like a battle field where only the best and brightest survive. Often, you will find yourself pulling all-nighters to prepare for a plethora of midterms. Butler will become your second home. You will develop a habit of coffee binge drinking. The times will be rough, daunting, and unexpected grades will come crashing your way. Lit Hum books will deter you from completing that oh-so-interesting chemistry reading. Many of your comrades who once started off gung-ho for the pre-med track will slowly begin to disappear -- leaving you in a field of dying soldiers. Though the times will be hard and the work will be pressing, I think hard-work and dedication coupled with these tips will help you succeed:

1. **READ, READ, READ!** There's nothing worse than trying to cram for midterms the day before. Most times, cramming is very ineffective and leads to little comprehension and fewer facts memorized. Reading ahead will allow you to fully grasp the information in the textbook. This will allow you to do better on midterms and quizzes.

2. **Stay healthy.** With hundreds of pages of reading a week and millions of papers to write, you might find yourself neglecting your health. Make sure to take care of yourself. Watch what you eat and plan time to go to the Dodge Gymnasium for a good workout.

3. **Participate in non-academic activities.** Branch out and get involved. Many medical schools look for well-rounded students. Make sure not to join activities just because they will enhance your resume. You should not pick certain activities just because they will make you like a "better" medical school applicant. Instead, join activities because you have a particular interest in them. Overall, activities will not only make you more well-rounded, but will allow you to be more involved in the Columbia Community.

4. **Go to class.** This may seem basic, but it can be very hard to do. Unlike high school, big lecture classes do not take attendance and it is not mandatory for you to go to class. It may also seem more pleasing to skip class because you can often download the lecture slides online. This is why many students skip out on big classes such as *Frontiers of Science* or *General Chemistry* lectures. Though it

may seem like a brilliant idea to skip class, the professor is likely to say many things in class that you can't pick up from the slides on Courseworks. Thus it would best to go to class and learn directly from the professor.

5. **Plan ahead.** Keep a schedule and stick to it. Plan out your studying and homework schedule for each class. This stability will help you stay on top, Begin studying for tests early so that you can be better prepared for the examinations. In addition, being organized will also help you to be a better student.

6. **Don't be afraid to ask for help.** In high school, you probably did not have to ask others for help (you were probably the one helping others). Being a Columbia student, however, there will be times where *you* will need help. Professors tend to fly through topics rather quickly and cover topics on the surface because they do not have a lot of time to cover all their material. If you are stumped on a topic, don't be afraid to ask a friend for help. Talk to an upperclassmen comrade, or go to your professor's office hours. This will help you clarify topics and cause you to do better in class.

7. **Go to Pre-Medical Events.** Many pre-medical events provide useful information for pre-medical students as well as great networking opportunities. Also, seeing doctors and medical students who were once in your shoes helps you stay motivated and optimistic about succeeding to medical school.

8. **Start internship searches early.** Freshman year will go by in a flash. If you wait for the last minute to search for internships, much of the better internships will be gone. Start searching for internships *early* in order to raise your chances of finding a good summer internship.

9. **Network! Network! Network!** Have a plethora of friends with different majors and backgrounds. Don't limit your friends to only those who are pre-medical students. Also, build friendships with upperclassmen. They have once been in your position and give good advice for succeeding at Columbia. Columbia also has many guest speakers and career fairs. Use these opportunities to talk to professionals and build connections with established individuals. You never know, the connections you make may help you in the future.

10. **Work hard, play hard.** My mother has always told me, "All work and no play makes Jack a dull boy." In other words, dedicating all of your time to school work will lead to a rather boring personality as well as a boring time in college. While studying is important, it is also important to take a break from all studying and set time aside to hang out with friends or simply go out. Enjoy yourself on the weekends, but make sure to do your work as well. After all, the college years are the most exciting, new, and fun times of your life -- right?

As a pre-medical student at Columbia, my experience has definitely been a learning process. Because of the large workload involved with the pre-medical track as well as the Core, I am constantly pushed to work harder, study more, and think deeper. College itself has definitely taught me how to balance my time effectively. Thus far, my time as a pre-medical student and a college student at Columbia has been very challenging but overall enjoyable and exciting.

To keep myself focused and structured, I follow the above these tips. By adhering to these tips, you will be able to get through you courses and ultimately get one step closer to medical school. The journey may be hard, but as long as you stick to your devotion and stay ahead in your work, you will be one less individual lost in the battle of achieving admission to medical school. Good luck!

Sophomore Year: An Uphill Battle

Name: Lindsey Hastings-Spaine, CC'13
Major: Neuroscience and Behavior
Extracurricular Activities: Charles Drew Pre-medical Society; STRIVE; CU Global Health
Random Fact: of Sierra Leonean decent; First Generation College Bound; A Neo-Soul and Jazz fiend; A free-Spirit and Lover of the people; in my next life, I want to be a creative director for a major Fashion magazine or at least a hippy…

If there was one word that I could use to sum up my sophomore year I would use…grueling. In my description of sophomore year as such, it is not to discredit any other year as a pre-med at Columbia. Truth be told, **every** year is difficult. However, sophomore year has been extremely challenging.

First and foremost, as a sophomore you are expected to 'double-up in your sciences'. This means either enrolling in Physics *and* Biology, or Physics *and* Organic. Chem., or Biology *and* Organic Chem. (for the really brave souls!). I opted to take the Physics and Biology combination. I made this decision mainly because I am a science major and Professor Mowshowitz's Biology class serves as a prerequisite for future classes I will need to take in my major.

As a freshman, I would constantly hear upperclassmen pre-meds refer to sophomore year as the "hell year;"they rarely had something positive to say about their second year at Columbia. Personally, I felt that I had already endured my 'hell year' as a freshman at Columbia. How could it possibly get worse? To make a long story short, I had been naive. The main difference between freshman year as a pre-med and sophomore year is that in your first year you are 'learning' a lot of things for the first time, for example, how to *actually* study, how to balance a social life with your studies, etc. But the work aspect of freshman year is not terribly difficult. As a sophomore, you already have your 'friend base' established, and your overall focus on school and study habits have improved greatly. But the workload, and difficulty, increase exponentially in sophomore year. CC readings and responses, Professor Mowshowitz's Biology Problem Sets, and Physics Homework alone can have you feeling overwhelmed. And these are just 3 classes! As I recollect on sophomore year's midterm and finals weeks, chills run down my back (no exaggeration, lol).

—Despite the hell of sophomore year, it is a necessary stepping stone. If you can survive sophomore year, you can survive anything the pre-med track at Columbia throws your way. I'd say the best advice I can give to any incoming pre-med sophomores is to *stay ahead* and *stay on top*. When I say "stay ahead" I mean coming to lecture already having a good idea of what is going to be covered by the instructor. This means reading lecture notes and slides, or skimming, the day before. With this

approach, I found that I got so much more out of going to lecture. The material stuck more and reduced the time I needed to *re*-learn. Now when I say 'stay on top', I am referring to assigned work. For example, Professor Mowshowitz does a nice job of detailing exactly what problems should be completed in relation to where she is in lecture. Do everything you can to stay on her schedule. Trust me; it will be to your benefit.

As I stated earlier, sophomore year is a beast. But if you stay ahead and on top, the beast is not so scary. In conclusion, I'll leave you with this quote:

"Keep your dreams alive. Understand to achieve anything requires faith and belief in yourself, vision, hard work, determination, and dedication. Remember all things are possible for those who believe." -- Gail Devers

Junior Year:
A Year of Self-Discovery and Solidification

Name: Chinyere "ChiChi" Okunji, CC'12
Major: Biochemistry
Extracurricular Activities: Sabor Dance Troupe; Raw Elementz; Intercultural Resource Center (IRC); Multicultural Recruitment Committee (MRC); Charles Drew Pre-Medical Society; STRIVE
Random Fact: I was born in Nigeria and came to the US at age 4.

After taking Professor Mowshowitz's Introductory to Biology class and Physics, I thought I finally was accustomed to the rigor and intensity of the pre-medical curriculum at Columbia. But the learning curve got steeper. That is, it became even *more* difficult to master the subject. My biggest challenge was probably taking organic chemistry and the corresponding lab . I think these courses were difficult for me because I did not have the prior knowledge necessary to truly understand the mechanisms of chemical reactions studied in these classes. However, what I did find was that going to office hours really helped in that it kept me focused. Working with other students on the lab report was an effective technique for me. For each lab, each teaching assistant was assigned at least 5 students, so going to them for help was not always feasible. In the end, I would not recommend taking both classes concurrently during the Fall semester (when first starting organic chemistry) because the lab would have most definitely been less time intensive and demanding if I had already had exposure to the mechanisms normally introduced in lecture. Nevertheless, the experience showed me that hard work does reap reward.

Organic chemistry felt like learning a new language (in fact I recommend Organic Chemistry I as a second language written by David R. Klein). Once I understood the general rules needed for an acid-base hydrolysis, I could apply it to any mechanism. Still, as all premedical classes, organic chemistry requires discipline and the motivation to pre-read, re-read, and review the material. What made my situation more challenging was that I also was taking Biology laboratory at the same time as the organic chemistry lecture. For me, after finishing the practical for the fetal pig dissection, bio lab was not as difficult as I expected. After working endlessly on the organic chemistry lab reports, biology lab reports didn't seem so bad.

My biggest concern junior year was probably deciding how to arrange my schedule so I could finish both my Core requirements and my pre-med requirements. I suggest finishing all these requirements by junior year so that by senior year you are truly taking classes that you enjoy and feel will be

essential for any future endeavors that you seek. I took Animal Physiology during my junior year. I figured I might as well become accustomed to material I might see on the MCAT or in medical school.

Some insights I've gained over the years are: 1) the professor's lecturing style does impact how receptive you will be to a class and 2) taking electives help you question if your career path is really the right and appropriate fit for you. I realized that I enjoyed biotechnology and molecular biology a lot more than my animal physiology class. Perhaps, I want to pursue a PhD or MD/PhD instead of a MD because I am more intrigued by molecular medicine. As a premed student, junior year is definitively the year to really nail down your ambitions, finish your requirements, and start preparing for the future -- even if you are unsure about what that future holds.

Senior Year: The Real World Ever So Close

Name: Jasmine Jackson, SEAS'11
Major: Biomedical Engineering
Extracurricular Activities: Charles Drew Pre-Medical Society; National Society of Black Engineers; Volunteer at Harlem Hospital
Random Fact: I love to eat sweets.

Biomedical Engineering is definitely not an easy road to medical school, but it is the one I chose. As a consequence of that decision, I have taken six classes for the majority of my time at Columbia because of the premed requirements being added to my already heavy coursework for my major. Because of my major, my premed experience was probably harder than it needed to be but I do not regret it. Most medical school admission officers who I have spoken to seem impressed by my studies. It makes me different from other applicants. Overall, I think biomedical engineering has given me some unique skills and a perspective about medicine that I would not have gotten with another major. This is something that I think will be of benefit to me in the future.

This spring, my last semester at Columbia (YYYEEESSSS!), I finally got the chance to take just five classes—a relief. The course load is not as bad as it had been since I am better adjusted to Columbia and engineering. Sadly, however, there are some added stresses to being a senior that people do not warn you about such as senior design, taking the MCAT, and trying to find a job.

I decided to take a year off before medical school so that I would have time to relax and not have to go through the interview process during my senior year. Because I made that decision, I had more time to prepare for the MCAT. I actually started studying for the test in June, right after my junior year. I purchased a Kaplan book and that is really the only study material I have used besides a few practice tests from other companies. My test day was at the end of August. When I got the results in September, I was not very pleased. I spoke to people in the admissions office of a few medical schools. They all said that I should re-take the exam (not the advice I wanted to hear). And so, I registered to take the exam a second time at the end of January. The second time around, I changed my studying habits. Instead of spending so much time reviewing concepts, I spent the majority of my time taking practice tests. I also enrolled in the Propremed course offered to Columbia and Barnard students (for free!) so I had more studying aids. It was helpful to learn about the exam concepts from an instructor compared to just reading on my own. My Fall courseload had not allowed me much time to study, but I spent my entire spring break hunched over my MCAT books. When I got the results in February, my score had increased by 6 points! Initially, I did not have much faith about how well I would do but I guess anything is possible with hard work.

Having completed the MCAT hurdle, I started focusing on getting a job after graduation. Since I would not be going straight to medical school, I needed to find something to do for a year. Personally, I do not like bench research. I would prefer clinical research or a job as a medical assistant or something similar. The process of finding a job has been more stressful than I ever imagined. I have applied to more jobs than I can remember and have gone on a number of interviews. The interviews are stressful because I have to make time for them and try to make a good impression. While I wait to hear back from the jobs I already applied to, I apply for more jobs. The more the merrier, I suppose. I hope that something works out and I do not have to move back home after graduation.

Graduation seems like a bitter sweet process. I am getting to leave the stress of Columbia but am also leaving behind the college lifestyle. Having to join the real world is frightening but I think I am ready for it. Alright, it is more like I hope I am ready for the real world. Either way, here I come!

Aristotle *AND* Chemical Reactions? Balancing Core Curriculum and Pre-Med

Name: Isaac Nyarko, CC'13
Major: Socio-Cultural Anthropology
Extracurricular Activities: Charles Drew Pre-Medical Society; African Students Association; Black Students Organization; Emerging Leaders Program
Random Fact: I am from the South Bronx

Columbia University is a wonderful institution where one can obtain a high quality education and experience intellectual challenges and rewards. One aspect which sets Columbia University apart from other universities is the core curriculum. This Columbia tradition began in the early part of the 20th century. The Core Curriculum is a set of common courses required of all Columbia University undergraduates. It is considered the necessary general education for students, irrespective of their choice in major. I am going to consider only three of the courses which I have completed or am currently enrolled in. The three courses are Literature Humanities, University Writing, and Contemporary Civilization.

Literature Humanities, commonly known as Lit Hum, is a course designed to enhance students' understanding of main lines of literary and philosophical development that have shaped western thought for nearly three millennia. While enrolled in this course, one has to read about 23 books, 12 in the fall semester and 11 in the spring semester, in addition to attending twice weekly two-hour discussion sessions. As a premed student, one important skill to master is effective allocation and management of one's time. Speaking from personal experience, there are going to be times when one cannot read all of the assigned pages and those are the times where one has to realistic and use internet resources. One important thing about internet resources such as "Sparknotes", and "Gradesaver" is that one has to make sure that one does not make as an excuse not to read the books but as backup options. Remember that these websites only provide summaries. If one becomes totally dependent on these websites, one will miss certain events or ideas not described that the teacher might ask about in class or on an exam. I have had this happen to me, where my Lit Hum teacher asked me about something that happened in History of the Peloponnesian War by Thucydides, and I was frozen because I did not read that book, I had a summary of it online.

Everything that I have described also pertain to another class called Contemporary Civilization or CC with the central purpose of introducing students to a range of issues concerning the kinds of communities – political, social, moral, and religious – that human beings construct for themselves and the values that inform and define such communities; the course is intended to prepare students to become active and informed citizens. In this course one reads 12 books in the fall semester and, 15

book and 2 articles in the spring semester for a total of 29 books and articles. This course deals with more philosophical theories and ideas which are difficult to comprehend, so I definitely recommend reading these books. One general advice though is that since these books deal more with ideas rather than with stories, one can make more generalization and firmly assert ones ideals during discussion and papers.

The last course is University Writing or U. Writing. This course facilitates students' entry into the intellectual life of the university by helping them become more capable and independent academic writers and readers (CU). My main advice for this course is to skim the readings and make sure that you dedicate the majority of your time to writing the essays because that is what can make or break you in the class. I believe that even if you are a good writer and you want to get an "A" for the class, then make sure to utilize the writing center because if they review your essay, your grade for that paper will surely increase. Overall, when balancing these core classes that require large amounts of reading, just set aside more time in your schedule, and always make sure to have your book at hand so that you can utilize every free moment available to the readings.

Remember, as a Columbia College student you must complete the following as part of the Core Curriculum. Visit http://www.college.columbia.edu/core/ for more information:

- Literature Humanities (2 semester; 1st Year)
- Contemporary Civilization (2 semester; 2nd Year)
- University Writing (1 semester; 1st Year)
- Frontiers of Science (1 semester; 1st Year during semester not taking University Writing)
- Art Humanities (1 semester; any time before senior year)
- Music Humanities (1 semester; any time before senior year)
- Science Requirement (2 semesters)
- Foreign Language Requirement (equivalent of 4 semesters)
- Global Core Requirement (2 semesters)
- Physical Education Requirement (2 semesters + Pass Swim Test)

As a SEAS student you must complete the following as part of the Core Curriculum. Visit http://www.studentaffairs.columbia.edu/csa/advising_seas for more information:

- University Writing (1 semester; 1st Year)
- Literature Humanities OR Contemporary Civilization OR Global Core (2 semesters; 2nd Year)
  NOTE: As a pre-med, you must take Literature Humanities OR Contemporary Civilization to fulfill the English Requirement.
- Art Humanities OR Music Humanities (1 semester)

Major: Economics

Name: Brandon Christophe, CC'12
Major: Economics
Extracurricular Activities: Columbia College Student Council; Sigma Phi Epsilon; Activities Board at Columbia; Charles Drew Pre-Medical Society
Random Fact: I am a TV junkie. My favorite shows are The West Wing, Entourage, and Modern Family.

Life as an economics major/premed concentrator is interesting, to say the least. At times it feels like you are a double major simply because the only overlapping requirements are two semesters of calculus and the economics major is very large. I made the decision to pursue such a program because of my distinct interest in economics and finance in conjunction with my desire to become a physician. The world of opportunities is endless, especially if you pursue an M.D./MBA program upon graduation but please, do not choose this program if you are not really invested in both! Just like any premed student at an academically competitive institution, you will undoubtedly question whether you have made the right decision, so what's the best advice I could give you?

If you are going to major in something that is unrelated (meaning lack of overlapping courses) to your premed classes, make sure it is something you love. As I write this, I am taking a break from an econometrics problem set that I have already poured two and a half hours into. Unlike the kid across the Butler Reference Room table, I am not terribly unhappy because I enjoy my major.

So what is the downside of this whole economics-premed scheme? At Columbia University and especially in the College, you face the monolithic challenge of completing your major, your concentration, and, wait for it, your Core classes. If you did not test out of your language requirement you are looking at taking a maximum of two electives (assuming you average 5-6 classes a semester). What's the upside? You will stand out on your medical school applications and be well versed to pursue careers that are not strictly limited to only being a doctor, but include options such as healthcare administration, consulting, finance, and more.

Major: Biology

Name: Kimberly Laughman, CC'11
Major: Biology
Extracurricular Activities: Peer Health Exchange; Charles Drew Pre-Medical Society
Random Fact: I like writing.

I chose to be a biology major because biology is my favorite of all the pre-med sciences. Mowshowitz's course was hell, but the material she taught actually was interesting and made sense to me. When choosing my major, I looked at requirements and the types of upper-level courses that were offered. Biology worked perfectly for me because I wanted to take courses like genetics and physiology, and I also planned to work in a lab during my time here. Often, when you work in a laboratory (especially if you have no prior lab experience), you won't be paid for the work you do, but if you're a biology major you can take W3500-Independent Research for two semesters (or SURF plus one semester) and have your lab work count for course credit towards fulfilling the lab requirement.

As a pre-medical student, a major in biology only requires a few upper level courses, because by simply being pre-med you're already going to take a lot of the courses required for the major. In addition to your pre-med load, you'll have four upper level biology courses and a lab requirement (which can also be filled with a lab course if you choose to opt out of independent research). It is a great major if you have other interests (I took a bunch of creative writing courses and photography 1), but don't want to overload yourself by trying to fulfill an entire non-science major.

To fulfill my requirements I took developmental biology, taught by Alice Heicklen, Biochemistry, taught by Liang Tong and Brent Stockwell, Physiology, taught by Natalia Galfianakis, and Genetics, which is now taught by Ava Brent-Jamali. When I took Genetics, it was taught by two other teachers, but I now TA the course with Ava and she seems like a pretty good professor. The exams are straightforward and she is pretty understanding when students need help in the course. Physiology with Professor Galfianakis is a great course to take last- it's pretty simple. Her exam was the first one in the history of Columbia science courses that I crammed for two nights before and didn't bomb! It's a great reward after all the torture you're sure to endure as a Columbia pre-med. Biochemistry is a necessary evil- it's hard and boring but it'll serve you well when applying to medical school. If you can, avoid developmental bio. I'm sure there are better, and more interesting courses you could take.

Overall, biology is probably the simplest (read: *least complicated*, not easiest) major a pre-medical student. I enjoyed it and I think it gave me the freedom to do a lot of things that I wouldn't have been able to if I had started a non-science major from scratch.

Major: History

Name: Princess Francois, CC'11
Major: History
Extracurricular Activities: Leader of Charles Drew Pre-Medical Society; Columbia Community Outreach Planning Committee; Team Leader of "Consent is Sexy" Program; Student Advisor for Emerging Leaders Program; Member of Caribbean Students Association and Haitian Students Association; Bibliographic Assistant/Media Consultant at Butler Reserves
Random Fact: I am a native Brooklynite born of West Indian (Haitian) descent and East Indian (Indian) descent. When it comes to writing and eating, I am a lefty, but am ambidextrous in all other aspects.

Random Person Ask: "So what is your major?"
I respond: "I'm Pre-Med and History."
Random Person Responds: "Wow. That sounds intense." "Hmmm, that's a very interesting combo."

These are often the responses I get when I tell people my major. Pre-medical studies and history were academic focuses I found initially appealing but took a while for me to commit to.. Despite what many people think, being humanities major *and*, pre-med is a LOT of work. The experience has been very difficult because I have had to strategically plan out how I would complete the Core Curriculum, the pre-med requirements AND the history major. The stress lies in the fact that he pre-med requirements and history major requirement do not overlap at all. Finding overlap between my history major and r Major Cultures/Global Core requirement, was a lot simpler.

Imagine having to read hundreds of pages a week for a class (sometimes whole books!) along with writing papers ranging from eight-page term papers to twenty-page seminar papers. On top of the writing, many of these papers required outside research. I also had to find the time to study for science exams and complete the core. It takes a lot out of you. I have found myself in situations where I had to write a twelve-page paper with thirty footnotes along with studying for an Orgo final one night at Butler which carried over into 4am the next day,
I have often questioned why I put myself through it all.

Regardless of the stress, I realize I absolutely love what I do. I could not imagine myself doing anything else. But trust me, it took a while to realize that I could pursue my passion for history and still go to medical school. I actually started off as a chemistry major. I took Chemistry Seminar freshman year and, taking the pre-med requirements out of sequence, also enrolled in Organic Chemistry instead of Biology my sophomore year. It was after this experience that I realized I did not enjoy chemistry enough to continue and decided to pursue a completely different direction.

History was something I always had a great interest in during high school. My Global History/A.P. US History teacher was actually the person who helped me recognize my love for the subject. She would constantly hint that I should pursue a history major. I ignored her at the time as I was set on pursuing a science track in college. When I got to college, I thought I would have to desert my history interests. Then I had a moment of self-reflection and insight and it dawned on me: if I do not pursue my history interest at Columbia, when will I ever? I love that Columbia, given its liberal arts emphasis, allows students to pursue completely different tracks simultaneously.

As a history major, I had to choose a specialization. My specialization is colonization and it has allowed me to take very interesting classes such as *U.S. in the World*, *Modern Caribbean*, and *Colonial Encounters*. I have been able to study the perspectives of both the colonized and the colonizer. I have found this very fascinating. I think history becomes very relevant when considering current issues such as disparities in health or education. My history background has provided me a completely different perspective on these issues that I may not have gotten as a regular science major. I believe the knowledge I have gained will allow me to become a more culturally competent physician. Also, because of the flexibility of my history major, I have also taken random, but interesting courses, like the *Social and Cultural History of Food in Europe*.

Over time, I became better at managing everything. I knocked out most of the Core during the first two years and completed most of my history major during the third and fourth years, taking two history classes a semester. Along the way, I completed my pre-med requirements on time and will be graduating as most this year after only four years. That said, certain semesters I overloaded and took six classes. No matter what, I ended up taking at least five classes a semester. Sometimes I felt I spread myself too thin by not having the time to devote to one specific subject and be the "true historian" or the "true scientist." But because I overloaded (probably unnecessarily) in the beginning of my Columbia career, I have room now in my senior year to take a lighter schedule as well as take classes I absolutely love. As I tell people, this spring semester is by far my best semester as I am actually fully engaged in my classes. Right now, I am taking classes that I find to be very interesting. These include *Crossroads in Bioethics* (which has a lot of relevancy for physicians, *History of Food*, *Race in the Making of the United States*, *Physiology* (perhaps a bit more traditional in terms of a hard-science course), and *Comparative Perspective in Inequality* (interesting and has relevance to anyone as a member of society).

So what to take from all of this? Pursue what you LOVE: It's all about passion. You will be much happier in the long run even if you have the stress of a hefty course load. At least it will be a labor of love. Plan very, very early and be strategic. I planned out my history major and pre-med track from the beginning of my sophomore year. This made registration for classes a breeze. Also, I think stepping outside of the box of the traditional science major allows for interesting everyday conversation with people. It also makes you a more interesting candidate for medical school and gives you something else to talk about during your interviews. But don't do a humanities major JUST to stand out. Do what you love and all else will fall into place!

Being a SEAS Pre-Med

Name: Daniela Guisado, SEAS'11
Major: Chemical Engineering
Extracurricular Activities: Engineers Without Borders: Ghana; Research assistant in Leonard Lab
Random Fact: I'm from a small town in upstate New York where there are literally more cows than people.

As a senior looking back at my time at Columbia as pre-med and a chemical engineering major, all I can say is that it has definitely been an experience. To put it bluntly, completing a major in SEAS is difficult, and being pre-med is difficult so doing the two together is very difficult. That being said, doing both is definitely doable, it just requires a lot of work. Nobody decides to pursue a career in medicine because they think it will be easy, so I would not let the amount of work alone discourage anyone. It is important, however, to be realistic about the amount of work that is required when attempting both pre-med and engineering curriculum simultaneously.

In my case, I came to Columbia unsure if I wanted to become a doctor or an engineer in the medical field. I decided to major in chemical engineering because many of the prerequisite classes overlapped with the pre-med requirements, and so I thought it would give me flexibility and lessen my course load. This, however, did not turn out to be the case. While I only had to take an average of 5 classes a semester, most of my engineering classes felt like multiple classes in one. From my own personal experience, I would advise anyone who is in SEAS and pre-med, but has not chosen a major yet to make sure you know exactly what the classes for that major entail so you can get an idea if it is a good fit for you. I mistakenly thought that chemical engineering would be a lot of chemistry. I was wrong. It is mostly physics, with some more physics thrown in, and lots of modeling with Excel. I know a lot of people who changed majors or transferred because chemical engineering was so different from what they expected. Talking with upperclassmen is helpful since they will be honest, maybe more so than you would like, and can help guide you in the process. At the same time, take some opinions with a grain of salt; there will always be the person taking 8 classes and claiming everything is easy, and I have come across people like this, and it is best to ignore them.

As far as classes go, make sure to take a close look at the Bulletin and the sequence for classes and try and fit in all of your pre-med requirements as early as possible to avoid having to take bio or orgo with your most difficult engineering classes. I took bio my junior year because I did not want to take it with orgo, which was also a pre-requisite class for my major, but junior year in chemical engineering is ridiculously intense and it was very difficult to find a lot of time to focus on bio. That being said, I was probably more prepared for bio because of the emphasis in problem solving I had in my chemical engineering classes was helpful for Mowshowitz's exams. One good thing about

majoring in SEAS was that I felt much better about my pre-med classes, and they seemed more manageable because my engineering classes were so intense. If you want a 4.0 GPA, majoring in SEAS might not the best decision since most classes, at least in my experience in chemical engineering, have much stricter and lower curves. Also, be prepared to receive some of the lowest grades of your life. Not exaggerating, in one of my classes the midterm average was a 16% with a standard deviation of 16. And yes we all studied. Of course this does not mean we all failed the course, but you should be prepared to say goodbye to high exam grades. You will most likely work ridiculously hard for mediocre grades, and eventually you will end up being happy about it. It can be discouraging at first, but then you will slowly start to realize that everyone is struggling just as much. Luckily in SEAS there is a lot of camaraderie in suffering together, and so there is a lot of teamwork and the environment is less competitive than in pre-med classes. Always remember you aren't suffering alone.

My best advice for keeping up with the crazy workload is clichéd, but try and be organized and start as early as possible; it is amazing how quickly you can get behind in a class, especially in engineering. I must say I have not always followed my advice as I am a natural procrastinator and I experienced many all-nighters because of it. While it is a lot of work, you have to constantly remind yourself of the goal you are working toward and medical school is not going to be any easier. Also, engineering and pre-med classes are by definition stressful, so it is important to give yourself time to just relax and have fun. Don't get too consumed by the work because you will drive yourself crazy. After all, health is the most important thing and this includes mental health.

Being a GS Pre-Med

Name: Rotsen Rocha, GS'11
Major: Neuroscience and Behavior
Extracurricular Activities: Charles Drew Pre-Medical Society; Intercollegiate Partnership Program; Columbia University's Brazilian Jiu-Jitsu Club
Random Fact: I was born in Brazil, raised in New York, resigned from Citigroup and decided to pursue medicine. I like soccer, Brazilian Jiu-Jitsu, Muay Thai and surfing. I've also skydived.

I was born in Brazil where I lived there until 1997 when my father passed away and my mother decided to move the family to the United States. The difficulties we endured during this period of transition were enormous. It was overwhelming to adjust to the new life, new language, and new culture. Although life in New York presented many different challenges, I always knew in my heart that better days would come. This optimistic view of life gave me the strength to continue and move on. I think that it is important to understand that we can always go further than we think we can, all we need to do is find that something that motivates us. In my case, that something was everything that happened in my life that I was able to conquer and made me grow stronger. Adversities unquestionably precede growth and I am thankful for them because they gave me the chance to see the person I really am.

I began working full time at Citibank in 2003. Even though I was enjoying my job, I wanted to pursue a college education. In May 2003, I registered at LaGuardia Community College, with the City University of New York. At the time, I was still unsure about what career path I wanted to follow, so I majored in Computer Network Systems Administration. However, I felt strongly about making the most of *all* of the classes LaGuardia offered. As a result, I enrolled in a variety of science and professional courses in many other fields of study in addition to the core requirements. One semester I chose to take Anatomy and Physiology as an elective, and in retrospect, this is the class that influenced me the most and made me want to pursue medical school.

In the summer of 2006, I participated in the Intercollegiate Partnership Program at Barnard College. The program allowed me to return to Columbia that Fall to enroll in science classes as a visiting student, at which point I applied and was eventually accepted into GS. Although I have always shared a passion for science, what interests me the most about it was how it can be directly applied to

the human body. Admittedly, the pursuit of medicine was not originally in my career or academic plans, but I first recognized this desire after taking that anatomy and physiology course at LaGuardia. As an ICP student, I also took a class called Human Nutrition and Bioenergetics, at which point I manifested my decision to actively pursue medicine. Although I had already been exposed to basic science courses at LaGuardia, this program inspired me to resign from Citibank and dedicate my efforts to becoming a doctor.

I transferred to the School of General Studies as an Undergraduate in the Fall of 2008, and immediately began taking premedical requirements and decided to focus on the Neuroscience and Behavior program because it not only overlapped with the premedical courses, but also it was the most applicable to human function and behavior. The choice for neuroscience became evident because it was the field that allowed me the greatest exposure to the functions of the human body. It granted me an understanding of the physical characteristics of the brain, and how they directly related to behavior. I eventually engaged in research, but realized that even though I was interested in the science behind it, the human element was invariably missing. Therefore, medicine became my career choice because it allowed me to cultivate my interest in science and also to apply it for the direct benefit of other people. During my time at GS, I was integrally involved with the ICP working as a Teaching Assistant and Residential Assistant under Dr. Paul E. Hertz. I also became involved in research under Dr. John Glendinning in 2008 and 2009, which eventually led to my publication as a coauthor. As a former Intercollegiate Partnership Program student myself, I was able to provide a new perspective to the teaching staff, and was able to pass on knowledge and tips to the participants that I had gleaned during my experience in the program.

One of the most important things that proves your commitment to medicine is volunteer experience, and I have tried my best to become involved in as many experiences as much as I could. My first experience was in a clinical setting as a Research Assistant (RA) during Spring of 2009. I worked with Dr. Fareed N. Fareed at New York Presbyterian – Columbia Medical Center, and I was responsible for monitoring the list of patients who might be potential candidates for the ongoing studies. Given a list of the ER patients presenting symptoms, I was in charge of getting the necessary information to enroll them in studies. From a purely scientific perspective, I became familiar with several medical terms, along with different procedures, exams, and emergency treatments. In the summer of 2009, I began volunteering at the Ambulatory Surgery Department at St. Luke's Hospital. I was responsible for monitoring the status of ongoing surgeries and keeping family members updated. This experience exposed me to the overall process of surgical procedures and intricacies involved in the process. I am also currently involved in similar clinical research projects at both St. Luke's and Weil Cornell Medical Center.

It is indispensible for a doctor to have the aspiration to assist others. More than that however, what attracts me to medicine is not only this innate desire to help people, but also the ability to do so in a scientific manner. I believe that this is what fundamentally differentiates medicine from other humanitarian professions. It allows for the concrete application of your scientific knowledge to the direct benefit of another human being. It fascinates me because in no other field would I be able to make such immediate impact on someone. I am drawn to the intimacy it affords, and how doctors have the ability to make an instantly meaningful contribution to someone's life.

Barnard's 9 Ways of Knowing = 9 Ways to Solidify and to Achieve Your Dream

Name: Margerie Cadet, BC'13
Major: Anthropology
Extracurricular Activities: Bio Lab TA; Charles Drew Pre-Medical Society; Sigma Delta Tau Sorority; Volunteer in Pediatrics Department at the Lennox Avenue Clinic in Harlem
Random Fact: Middle child of two Haitian immigrant parents

The "Nine Ways of Knowing" may be perfect for students who have no idea what they want to pursue in life. But for the dedicated premed, applying the advice given in this article might seem like a nuisance. But I promise you the article is worth reading. What I take personally from the article, is the different perspective (this may be a good place to add that an overall positive outlook on life can exponentially improve your stressful premed career as a whole). If you came into Barnard as a premed it's likely that you chose Barnard for its small class sizes and supportive atmosphere. Nevertheless, being forced to take classes in nine varying subjects can help solidify your dream of being a doctor. In contrast to the Core at Columbia, the "Nine Ways of Knowing" just guide you through the areas of study necessary; each area has a large number of classes that satisfy the requirement so it's virtually impossible to find a class you don't have a remote interest in. The following is a list of the areas that encompass the Nine Ways Of Knowing, specialized for your survival as a premed student. Keep these helpful tips in mind as you go about your journey and hopefully it'll be a little easier (for an actual list of the classes that fulfill each requirement see: http://www.barnard.edu/provost/teaching/gers/ courses#REA).

1) ***The Reason and Value*:** Being premed is no easy task, that's why it's most important to make sure that becoming a doctor is truly something that YOU (not your parents) want, allowing someone to pressure you down this long path will make you completely miserable. All students question their career decision at some point (most often around the time of the Gen Chem or Orgo finals) but to survive as a premed woman you must have the ability to continuously renew and revamp your commitment (trust me, it'll waiver at times). So when it comes time to spend yet another all-nighter in Butler to study for Hertz's Biology exam when you'd rather be sleeping or hanging out with friends remember to stay committed, there's no other way to make it through the courseload. Use this requirement as a way to explore other options (the Anthro class I took to satisfy this requirement helped me decided that I didn't want to be a Bio major). Solidify to yourself that this high-stress life is one you want.

2) ***Social analysis*:** CULPA, CULPA, CULPA, and in case you didn't hear me the first time, CULPA; the professor can make or break your experience in a class so don't make the mistake of not doing your research before enrolling in a class. For those of you First Years who have yet to hear of CULPA (website: www.culpa.info) it's Columbia's version of ratemyprofessor.com. Although every class/professor won't be found on this site, I STRONGLY suggest using it. As someone who didn't learn of CULPA's magic until mid-semester freshman year trust me when I say regardless of how interesting the subject may be it can become unbearable through the mouth of Professor Monotone. DISCLAIMER: Keep in mind that one person's experience in a class may be 100% different from another's, use all the resources available to make sure you don't end up in a class that you sleep through or dread attending but don't let a couple bad reviews discourage you from taking a class you think you might love, after all that's why we have the shopping period.

3) ***Historical studies*:** Aside from First Year Seminar and English it's pretty much guaranteed that there will be an upperclassman in at least one of your classes; TALK TO HER. I've found that the best advice I've received over the years has come from older premed students who have already completed the stage of life I'm going through. Talking to upperclassman and peers can provide you with more insight into specific topics and more tips on how to adjust to college life and its heavy courseload, find time for extracurricular activities, and deal with life in general. Even if you don't have any specific questions sometimes it's just helpful to talk to someone who was in your shoes not too long ago and grew into another pair. As scary as it may be to start a conversation, if you approach them the right way, most students will be more than willing to spend some time talking to you.

4) ***Cultures in comparison*:** Realizing that you'll have to sacrifice your social life at times can be one of the hardest things for premeds. As sad as it sounds, it's important to recognize that while your roommate is going out Thursday-Saturday she may not have as rigorous a courseload as you have (and if she does she either has amazing time management skills or may not care that she's failing). Make sure you know what works best for you, whether that means going to the library to get your work done or learning to say no to friends when they ask to hang out; being premed requires focus—figure out the steps you need to take to maintain yours. On the other hand, maintaining your focus doesn't mean you can't take an occasional night off to enjoy yourself; my best advice is to live by this common axiom: WORK HARD, PLAY HARD.

5) ***Quantitative and Deductive Reasoning*** and 6) ***Lab Science*:** Both of these are needed to fulfill premed requirements so make sure they remain top priority. The best strategy for success in these classes, be it Calculus or Organic Chemistry, is doing tons of practice problems and going to professor/TA office hours when you don't understand something. It might be helpful to devote a set study time (even just an hour can make a difference) everyday where you do practice problems to gain confidence in the material.

7) ***Language*:** Positive words and thoughts fuel positive outcomes, so try to limit the amount of complaints you make. We all know being premed requires a massive amount of time and effort so

continuously complaining about it does nothing. When you feel overworked or stressed try to think of happy memories or future plans to shift your mood (my Miami spring break plans are going to help me get through midterms this year). Additionally, this infamously long, 4-semester language requirement will be helpful overall because most doctors are encouraged to learn a second language to better communicate with immigrant patients.

8) ***Literature*:** Keep up to date with websites like this (?) to get more helpful hints on surviving premed life. Also, reading science/medicine related articles will be helpful when it comes time for medical school applications and interviews. Often times interviewers will ask your opinion on a current health related topic, like the new health care reform, so keep yourself up to date and comfortable with this type of subject matter. Try making the Science section of the New York Times your homepage so every time you open Internet Explorer you're reminded to read an article.

9) ***The Visual and Performing Arts*:** Visualizing the future is a strategy employed by the most successful athletes and entrepreneurs. Sometimes it's easy to lose sight of your ultimate goal in life because it seems so far away. Use this trick to constantly refresh your drive and motivate yourself to be the person you visualize.

Although I find science and medicine very interesting, I'm the type of person who needs variability in my studies. My experience with the "Nine Ways of Knowing" has been a positive one. It has given me the opportunity to explore other subjects I thought might be interesting, like Urban Studies and Sociology, and helped me pinpoint my major, Anthropology (with a concentration in Medical Anthropology, something I wouldn't have known existed without the Social Analysis Requirement!). Balancing these required courses with premed requirements can be tough and annoying at times but it's not impossible to find interesting classes with a light courseload if you do your research. The thing I like most about the Nine Ways of Knowing is that it forces you to go outside of your comfort zone and explore something new, for example I took "Africa in the Cinema" for the Visual and Performing Arts requirement without any previous knowledge of media studies and it ended up being one of my favorite classes. Since the road to getting M.D. after your name is a long one filled with science and math classes, use The Nine Ways of Knowing as your excuse to deviate slightly and build onto your educational repertoire.

Studying Abroad: An Unforgettable Journey in Spain

Name: Heidi Bonilla, CC'10
Major: Economics
Extracurricular Activities: Supervisor for the Columbia Calling Center; Women's Ways of Leading Conference: Committee Member; Acción Boricua; NSOP Orientation Leader
Random Fact: I use Facebook way too much and have an addiction to my iPhone. Also, you can always catch me checking out perezhilton.com or tmz.com—YES I absolutely adore celebrity gossip; I wish I was a celebrity (sometimes).

I decided to study abroad in Madrid, Spain Fall semester of my senior year. Most Columbia College students use the second semester of their junior year to study abroad, but for premeds who decide to take Orgo or Bio during their junior year, this may be harder. My program was sponsored by Vassar College and Wesleyan University. Preparing for the trip takes time, so if you are considering a study abroad program, make sure you have all of your vaccines and a physical examination done beforehand. These programs usually require a lot of paper work and approval from various departments at Columbia (i.e. your major's department, pre-med office and the Study Abroad department). Things that I took into consideration when deciding on a study abroad program included the following: 1. The type of room and board offered: dorm rooms vs. host families, 2. whether meals were to be provided, 3. the location: city, suburban or rural, and 4. the duration of the program: 1 semester, 1 year, or a flexible time frame. My program lasted a full semester; I arrived in Spain August 19 and left on December 20. This was perfect for me because I definitely wanted to spend the holidays with my family and friends here in NY. In terms of room and board, I lived with a host family in Madrid and had easy access to Madrid's public transportation system (staying near public transportation is highly recommended especially when you don't own a car). The subway system in Madrid was spectacular. It was very modern, all of the subways were timed, and the passengers knew exactly when they were arriving.

I can state many wonderful things about studying abroad and tell you how amazed I was at the different cultures and different places I travelled to: London, Paris, and Rome, in addition to travelling all over Spain. Instead, I want to start at the beginning of my journey and let you know that it wasn't as easy as I had expected. I definitely experienced a culture shock, and at times I questioned my decision to leave NY and all of the comforts of my Columbia life. Since the program wasn't sponsored by Columbia, I had not met any of the students until I arrived in Madrid. For the first 10 days, we stayed in Galicia—the northern part of Spain—and took 2 intensive courses at the University. During that time, we lived in dorm rooms, and each room had had its own bathroom.

These 10 days were great because I met all of the students (approximately 30) and formed great friendships. I ate amazing seafood (Galicia is known for its seafood) and had octopus for the first time. The Cathedral in Santiago de Compostela—built in the 12th century--was breath-taking. It was one of the most beautiful cathedrals built and is known for its rich history. In addition, it is the burial place of St. James—one of the 12 apostles. After our brief stay in Santiago, we travelled to Madrid (approximately 1.5 hrs away by plane). Here, I met my host family. I was ecstatic to live in Madrid and experience the Spanish culture. But alas, I wasn't accustomed to living with strangers and abiding by their rules (yes, there were rules). Every host family is different, so I will only speak about my experience. I lived in an apartment building with 2 sisters and their niece. Both women were approximately in their sixties and the niece was 23. They weren't exactly the nicest people. I was only limited to one shower a day and felt like they were overbearing. The host would get mad because I couldn't open the door (it's not my fault they had antique doors that require like 5 different keys to open). The niece never bothered to take me out and show me the city and never made an attempt to establish a friendship. One month into it, I decided to move out and find a family where I would feel more welcomed. The program was very flexible: they gave us the opportunity to move if we weren't content with our living arrangements. I moved in with a wealthy family, which included 4 children, but only 3 lived in the house. I really enjoyed hanging out with my host brothers and sister. The father was an architect and worked for the city of Madrid, and the mother worked in the Treasury department.

Once established in my second house, I was able to immerse myself in the Spanish culture and experience life in Europe. Madrid is a great city to party and meet people from all over the world. It is very international and welcoming to tourists. The bars and clubs are opened till 6-7am. Out of all the places I travelled to, Madrid had one of the best night-life environments. The subways (Metro is the proper name) would close at 1:30 am and re-open at 6am every day, but the buses would run all night. This was the only negative part of the public transportation system and therefore most people would party till after 6 am and catch the subway back home. The program had trips arranged for us as well; we visited Valencia (in the Mediterranean coast) and Seville/Cordoba (southern tip of Spain). The flexibilities to travel within Europe are definitely perks of the European Union. There are no borders in the EU and one can come and go as he/she pleases. England is different in that you need ID to get in and you need to go through Immigrations services (the English, what can I say…). Having the opportunity to travel to Barcelona, Rome, Paris, and London for affordable prices was one of my reasons for studying in Europe. Loving to travel and experiencing new cultures and foods was the highlight of my study abroad semester.

Looking back at my study abroad journey, I would definitely repeat it. However, I did not like the one hour commute to our University (south of Madrid) every day. Our university—Carlos III- was located in Getafe, a small-town in the outskirts of Madrid. It was a very boring place and I would just go to my classes and then catch the train back to Madrid. If you are considering a study abroad program, Madrid is definitely an amazing place (but you do need Spanish as a pre-req). Take into consideration your personality type: if you do not want to live with a host mother or family, then this

is not the program for you. Please be open-minded to experiencing a new culture, new foods and meeting people from all over the world. Madrid is a very cosmopolitan city that has a lot to offer: amazing night-life, sight-seeing places, and a diverse culture. Also, make sure to bring cash with you and to travel to different parts of Europe, take advantage of this. Be ready to explore Europe and to form ever-lasting friendships (even if it's only through Facebook). Make your study-abroad experience the best time of your life and take many pictures, these will be memories that you will cherish forever.

Combined 3-2 Program

Name: Maritza Harper, CC-SEAS'09
Major: Chemistry (in CC) and Biomedical Engineering (in SEAS)
Extracurricular Activities: Community Impact (HEAL); Columbia University Emergency Medical Services (CAVA); Gospel Choir; Women's Squash Team; Kappa Alpha Theta; RA in Carman and Watt
Random Fact: I have a small dog named Cody.

I tend to ramble, so for those of you who are just looking for the advice, it's put in bold throughout the piece.

I wanted to be a doctor since I was 5 years old when I got my first playschool doctor's bag- I knew I wanted to help others. When I was in high school, I became an EMT and I realized that there were many ways to help and care for others outside the realm of being a physician. I enjoyed emergency medicine, but I wanted more experience before deciding on my career path. When I came to Columbia, I signed up with the pre-med list serve and got involved with the shadowing physician program at St. Luke's Hospital, volunteered with a health education program for elementary school children, and joined CAVA so as to not allow my EMT certification go to waste. These experiences helped me narrow down what my true interests were- I was passionate about patient interaction and patient education, and I enjoyed working with all ages of patients, not just kids. I realized that based on my interests, I could pursue a career in social work, nursing, become a physician's assistant or a psychologist and follow my passions. I needed time to decide what I wanted to do. **ADVICE: pick extracurricular activities that you are passionate about, not ones that you think will look good on your resume (the admissions committee members can sense this). The energy you have for things that you actually enjoy will show through when you talk or write about them a lot more than things you do because you think you have to do them.**

Now, regarding academics. I started at Columbia College as an undecided major. I considered majors in psychology, biochemistry, and biology and chemistry. But after two years of taking classes, I realized that I wasn't really interested in continuing in any of these majors. After doing some research in the course catalogue, I became very interested in the courses offered in the Biomedical Engineering (BME) major in the engineering school. I went to talk with my academic advisor and he told me I could officially transfer into the engineering school and get a B.S. in Biomedical Engineering. My other choice would be to take the same amount of time and complete a B.A. in the College and get a B.S. in the Engineering school --- the Combined Plan or the "3-2 program". This program is usually offered to liberal arts students from other universities who come to the Engineering School for two years to complete their B.S., but this route is also offered to Columbia College students.

ADVICE: it is also possible to do an Engineering School to College combined plan called 4-1. Talk to your advisor if interested. As an eager-beaver college student I said "WOW what a great idea - spending 5 years and getting two degrees out of it!" By entering this program, I was required to complete the Columbia College Core curriculum (which combined plan students from other schools don't have to do), the course work to needed to complete a concentration in the department of my choice (I picked Chemistry), *and* the Engineering school Core. I also had to complete the pre-requisite work for BME. I had three years to do all this! Looking back, I don't know if I would have decided to do the 3-2 program had I really understood what it was asking of me. I sacrificed being a college student, doing activities that I loved, making friends and having fun just to be able to finish all of the work. I was taking 22/23 credits a semester to finish my Columbia College coursework and I was stressed all of the time.

Finally, I finished my three years in the College and I was ready to start BME coursework. The summer before I started in the engineering school, I started working in a research lab. I thought this would help me assimilate into life in the department. Although I continued working in lab until I graduated (I was working on a project I loved - trying to develop a low cost microfluidic device to monitor the progression of HIV in patients in 3rd world countries), the experience taught me that I was interested in global health and definitely not interested in a research career. When school started, I realized it was difficult making new friends at first. It was like the first day of a new school when a lot of people already have their set group of friends and you're the new kid. I also felt that everyone was really competitive and not interested in new people. Luckily, I became friends with the other "3-2" students who had similar feelings about the college experience.

By working through my first year of BME coursework and lab, I realized that as much as I enjoyed the topics presented in the classes, I realized I did not want to purse engineering as a major. While I enjoyed working on the group and independent engineering projects, I missed patient interaction and there was very little health education in research. I decided that the way I could pursue all of my interests was by becoming a physician. I went to talk to a pre-med advisor about what I would need to do to apply to medical school. After looking at my transcripts and resume, the advisor told me that the average GPA for medical school applicants was a 3.8. The advisor told me that since I didn't have a 3.8, it would be very difficult for me to get into medical school. The advisor also told me to take some time off so my senior year grades could be sent to schools. The advice crushed me. I had not planned on taking any time off for college, and couldn't think of anything I wanted to do. **ADVICE: I wish I had someone to talk to who had taken time off before going to medical school. If you're not 150% committed or sure that you want to go to med school, don't waste your money or your time applying. Also, medical school basically takes over your life for 4 years. Looking back, I wish I had taken some time off and gotten a job, traveled a bit, and seen what it was like to be a real person with real responsibilities.** But I was so determined about going to med school right after college, I ignored what the advisor said and started the process anyway. **ADVICE: If you believe in yourself and are persistent, you will get what you want in life. Don't let anybody tell you that you can't. The only person stopping you is you.** I signed up to take the MCAT and started

writing my personal statement -- I had to skip the graduation ceremony of my 2008 friends' because I was furiously studying for the MCAT. It was really hard for me to miss out on all the senior activities with my friends.

At last, I finished up all my coursework, went on interviews and eventually decided to attend Cornell on the Upper East Side. **ADVICE: When you start scheduling medical school interviews, try to do them as early in the season as possible -- you have a better shot of getting accepted as a lot of schools admit people on a rolling basis. Also, if you are a senior, keep in mind you'll have to take off days from school to travel to interviews. When deciding on a school, make sure it's a place that has people and an environment that you will enjoy for four years. The name/reputation of the school has little to do with your happiness. Besides, all medical students, regardless of where they go, have to learn the same information to take the national board exams.**

Sample Schedule:
Major: Neuroscience and Behavior (CC)

Created by Chris Travis, CC'11

Green = Pre-Med Reqs; Blue = Core Curriculum; Red = Major; Black = Electives

Freshman I

Literature Humanities I	4
Frontiers of Science	4
General Chemistry	3.5
Calculus II	3
The Science of Psychology	3
Total	17.5

Freshman II

Literature Humanities II	4
University Writing	3
General Chemistry II	3.5
General Chemistry Lab	3
Mind, Brain, and Behavior	3
Physical Education I	1
Total	17.5

Sophomore I

Contemporary Civilization I	4
Spanish Elementary I	4
Biology I	4
Biology Lab	3
PhysicsI	3
Physics Lab I	1
Total	19

Sophomore II

Contemporary Civilization II	4
Spanish Elementary II	4
Global Core I	3 or 4
Biology II	4
PhysicsII	3
Physics Lab II	1
Total	19 or 20

Junior I

Spanish Intermediate I	4
Music Humanities	3
Physical Education II	1
Organic Chemistry I	3.5
Drugs and Behaviour	3
Psychology Lab or Statistics	3 or 4
Total	16.5-17.5

Junior II

Spanish Intermediate II	3
Art Humanities	3
Global Core II	3 or 4
Organic Chemistry II	3.5
Organic Chemistry Lab	3
Total	12.5-13.5

Senior I

Neurobiology I	4
Biology Elective (Biochemistry)	4
ELECTIVE	3 or 4
ELECTIVE	3 or 4
Total	14-16

Senior II

Neurobiology I	4
Advanced Psychology Seminar	3 or 4
ELECTIVE	3 or 4
ELECTIVE	3 or 4
Total	13-16

Sample Schedule:
Major: History; Specialization: Colonization (CC)

Created by Princess Francois, CC'11

Green = History major; Blue = Core Curriculum; Purple = Science Classes; Red * = Pre-Med Reqs; Salmon = Electives

Freshman (Fall 2007)

Literature Humanities I	4
Elementary Spanish II	4
University Writing	3
Calculus I*	3
General Chemistry I*	3.5
Total:	17.5

Freshman (Spring 2008)

Literature Humanities II	4
Intermediate Spanish I	4
Frontiers of Science	4
Calculus II*	3
General Chemistry II*	3.5
General Chemistry Lab*	3
1st Year Seminar in Chemical Research	1
Total:	21.5

Sophomore (Fall 2008)

Contemporary Civilization I	4
Major Debates in the Study of Africa	3
Physical Education (Karate)	1
Organic Chemistry I*	3.5
General Physics I*	3
General Physics I Lab*	1
Total:	15.5

Sophomore (Spring 2009)

Contemporary Civilization II	4
Intermediate Spanish II	3
History of the Modern Middle East*	3
Organic Chemistry II*	3.5
Organic Chemistry Lab*	3
General Physics II*	3
General Physics II Lab*	1
Total:	20.5

Junior (Fall 2009)

Physical Education (Beginner's Swimming)	1
Introductory Biology I*	4
Contemporary Biology Lab*	3
United States in the World	3
Colonial Encounters	3
Total:	14

Junior (Spring 2010)

Art Humanities	3
Fundamentals of Global Health	3
Introductory Biology II*	4
The Modern Caribbean	3
Europe Since 1789	3
Total:	16

Senior (Fall 2010)

Music Humanities	3
Molecular & Mendelian Genetics	3
Biochemistry	4
African Civilization	4
Medicine and Western Civilization	4
Total:	18

Senior (Spring 2011)

General Physiology	3
Race in the Making of the US	4
History of Food	3
Sociology	3
Crossroads in Bioethics	2
Total:	15

Total # of Credits: 139

Sample Schedule:
Major: Biomedical Engineering (SEAS)
Concentration: Cell and Tissue Engineering

Created by Connie Qiu, SEAS'11

Please note that some courses may be taken in a different order as there are new scheduling changes in the BME department. Number of required tech elective credits varies with concentration. In addition, some courses overlap for credit requirements. See notes to follow.

SEAS Core Courses (some can vary depending on personal preferences)
BME Required Courses
Additional Requirements to fulfill pre-med curriculum
Non Tech Electives
Tech Electives

First Year: Semester 1

Transfer Advanced Placement Credit: Calculus AB (3)

PHYS C1401	Intro to Mechanics and Thermodynamics	3
MATH V1102	Calculus II	3
ENGI E1102	Design Fundamentals Using Advanced Computer Technology (Gateway)	4
CHEM C1403	General Chemistry Lecture I	3.5
BMEN E1001	Engineering in Medicine	3
Total		16.5

Engineering in Medicine is a pre-professional course, part of the requirement for the SEAS Core as well as the BME Major. Students can choose to take this in place of Physics of the Human Body. Check to see which course is offered when you want to take it.

First Year: Semester 2

PHYS C1402	Intro to Electricity/Magnetism and Optics	3
MATH V1201	Calculus III	3
ENGL C1010	University Writing	3
ECON W1105	Principles of Economics	4
CHEM C1500	General Chemistry Laboratory	3
CHEM C1404	General Chemistry Lecture II	3.5
Total		19.5

For the core, either Gen Chem or Physics lab can be taken. For pre-meds, take both.

Second Year: Semester 1

PHYS C1403	Intro to Classical and Quantum Waves	3
MATH V1202	Calculus IV	3
HUMA C1001	European Lit (Lit Hum)	4
ENME E3105	Mechanics	4
CHEM C3443	Organic Chemistry Lecture I	3.5
Total		17.5

To fulfill the Core as well as the Pre-Med curriculum English requirements, you must take either 1 year of Lit Hum or Contemporary Civilization.

Second Year: Semester 2

PSYC W1001	The Science of Psychology	3
PHYS 1494	Intro to Experimental Physics	3
HUMA C1002	Lit Hum	4
ELEN E1201	Intro to Electrical Engineering	3.5
CHEM 3444	Organic Chemistry Lecture II	3.5
APMA E2101	Into to Applied Mathematics	3
Total		19.5

The psychology course is one of many non-tech courses that can be taken. Organic Chemistry lecture II is 1 of 3 additional courses to take to be pre-med and counts as a tech. Physics lab is the 2nd but unfortunately, doesn't count towards any credits for graduation.

Summer

COMS S1005	Intro to Computer Programming-MATLAB	3

I took MATLAB in the summer due to scheduling conflicts. Try to avoid this though; each course credit is over $1200, making this course over $3600.

Third Year: Semester 1

STAT W1211	Intro to Probability and Statistics	3
PHED C1001	Phys Ed	1
MSAE E3103	Elements of Materials Science	3
CHEM C3543	Organic Chemistry Laboratory	3
BMEN E4210	Thermodynamics of Biological Systems	4
BMEN E4001	Quantitative Physiology I	3
BIOL C2005	Intro to Bio I	4
Total		21

Orgo lab is the 3rd and last additional course to be a pre-med BME. It counts as a tech.

Third Year: Semester 2

HUMA W1121	Masterpieces of Western Art (Art Hum)	3
CHNS W1010	Introductory Chinese A	2.5
BMEN E4002	Quantitative Physiology II	3
BMEN E3810	BME Lab I	3
BMEN E3320	Fluid Biomechanics	3
BIOL C2006	Intro to Bio II	4
Total		18.5

Either Art Hum or Music Hum can be taken. Chinese is also part of the non-techs.

Fourth Year: Semester 1

PHED C1001	Phys Ed	1
CHNS W1011	Introductory Chinese II	2.5
BMEN E4570	Science and Engineering of Body Fluids	3
BMEN E4501	Tissue Engineering I	3
BMEN E3910	BME Senior Design I	4
BMEN E3820	BME Lab II	3
Total		16.5

Science and Engineering of Body Fluids is a choice from a list of techs (generally, any SEAS 3000 and above).

Fourth Year: Semester 2

MECE E3408	Computer Graphics and Design	3
BMEN E4502	Tissue Engineering II	3
BMEN E4010	Ethics for Biomedical Engineers	2
BMEN E3920	BME Senior Design II	4
BMEN E3830	BME Lab III	3
Total		15

Computer Graphics & Design is a choice from a list of techs (generally, any SEAS 3000 and above).

Total credits required for graduation: 128
Total credits completed on this schedule: 147

NOTE: As a SEAS pre-med, you will most likely graduate with more.

Sample Schedule:
Major: Chemical Engineering (SEAS)

Created by Daniela Guisado, SEAS'11

Semester	Class	Credits
Fall Freshman Yr (2007)	BMEN 1001: Engineering In Medicine (pre-professional class)	3
	CHEM 1403: General Chemistry I	3.5
	ENGL 1010: University Writing	3
	MATH 1101: Calculus I	3
	PHYS 1401: Intro to Mech. & Thermo	3
	TOTAL	15.5
Spring Freshman Yr (2008)	CHEM 1404: General Chemistry II	3.5
	CHEM 1500: General Chemistry Lab	3
	ECON 1105: Principles of Econ	4
	ENGI 1102: Gateway	4
	MATH 1102: Calculus II	3
	PHYS 1402: Intro E&M and Optics	3
	TOTAL	20.5
Fall Sophomore Yr (2008)	CHEM 3443: Organic Chemistry I	3.5
	CHEN 3100: Material and Energy Balances	4
	HUMA 1001: Literature Humanities	4
	MATH 1201: Calculus III	3
	PHYS 1493: Physics Lab	3
	TOTAL	17.5
Spring Sophomore Yr (2009)	CHEM 3444: Organic Chemistry II	3.5
	CHEM 3543: Organic Chemistry Lab	3
	HUMA 1002: Lit Hum	4
	HUMA 1123: Music Hum	3
	MATH 1210: Ordinary Differential Equations	3
	TOTAL	16.5
Summer 2009	Calculus IV (at Cornell)	4
Fall Junior Yr (2009)	BIOL 2005: Biology I	4
	BIOL 3995: Intro to Clinical Research & Emergency Medicine	2
	CHEE 3010: Principles of Thermodynamics	4
	CHEN 3110: Transport Phenomena I	4
	SPAN 1101: Elementary Spanish I	4
	TOTAL	18

Spring Junior Yr (2010)	BIOL 2006: Biology II	4
	BIOL 2501: Biology Lab	3
	CHEN 3120: Transport Phenomena II	4
	CHEN 3210: ChemE Thermodynamics	4
	CHEN 4230: Reactor Kinetics	3
	TOTAL	18
Fall Senior Yr (2010)	ANTH 2008: Film and Culture	3
	CHEE 4252: Surface and Colloids	3
	CHEN 4140: Chem & Biochem. Separations	3
	CHEN 4300: Chemical Engineering Control	2
	CHEN 4500: Process Design	4
	PHED 1001: Cardio Fitness	1
	TOTAL	16
Spring Senior Yr (2011)	BMEN 4002: Quantitative Physiology II	3
	CHEN 3810: Chemical Engineering Lab	4
	CHEN 4320: Molecular Phenomena	3
	CHEN 4510: Process & Product Design	4
	CLEN 3220: Science Fiction	3
	PHED 1002: Skiing/Snowboarding	1
	TOTAL	18

General SEAS Requirements

Technical Requirements for Chemical Engineering

Technical Electives

Non-tech Electives

Total Number of Credits Completed: 144

Sample Schedule:
Major: Anthropology (BC)
Created by Margie Cadet, BC'13

Green = Pre-Med Reqs; Blue = 9 Ways of Knowing Red = Major; Black = Electives

Freshman I
Intro to Organismal/Evolutionary Biology (BIO 1500; 3 credits)
Intro to Organismal/Evolutionary Biology Lab (BIO 1501; 2 credits)
NOTE: *the 2 semesters of bio+lab fulfilled the Lab Science Requirement*
Interpretation of Culture (Anthro Major Requirement/ Fulfilled Cultures in Comparison Requirement; 3 credits)
Ethnicity and Social Transformation (First Year Seminar Requirement; 3 credits)
Spanish Elementary II (4 credits)
Credits: 15

Freshman II
Intro to Cell and Molecular Biology (BIO 1502; 3 credits)
Intro to Cell and Molecular Biology Lab (BIO 1503; 2 credits)
First Year English (Requirement; 3 credits)
Calculus I (fulfilled Quantitative Reasoning Requirement; 3 credits)
Spanish Intermediate I (Language Requirement; 4 credits)
Yoga (Phys Ed requirement; 1 credit)
Credits: 16

TOTAL for FRESHMAN year: 31 credits + 6 AP Credits= 37 credits

Sophomore I
General Chemistry I (3.5 credits)
General Chemistry I Lab (3 credits)
The Origins of Human Society (Antro Major Requirement; 3 credits)
Introduction to Urban Sociology (Elective/ fulfilled Social Analysis Requirement; 3 credits)
Credits: 12.5 credits

Sophomore II
General Chemistry II (3.5 credits)
Introduction to Statistics (3 credits)
Archaeology of Colonialism (Anthro Major Elective; 3 credits)
Intermediate Spanish II (Language Requirement; 4 credits)
Credits: 13.5

TOTAL for SOPHOMORE year: 26 credits

Junior I
Organic Chemistry I (3.5 credits)
Anthropological Theory I (Major Requirement; 4 credits)
Anthro Elective (Major Requirement; ~4 credits)
Phys Ed Class (1 Credit)
Reason and Value Requirement (~3 credits)
Credits: 15.5
Junior II
Organic Chemistry II (3.5 credits)
Organic Chemistry Lab (3 credits)
Anthropological Theory II (Major Requirement; 4 credits)
Anthro Elective (Major Requirement; ~4 Credits)
Credits: 14.5

TOTAL for JUNIOR year: ~30 credits

Senior I
General Physics I (3 Credits)
General Physics I Lab (1 credit)
Anthro Elective (Major Requirement; ~4 Credits)
Anthro Elective (Major Requirement; ~4 Credits)
Literature Requirement (~3 credits)
Credits: 15

Senior II
General Physics II (3 Credits)
General Physics II Lab (1 Credit)
Anthro Elective (Major Requirement; ~4 credits)
Senior Thesis Seminar: Problems in Anthropological Research (Major Requirement: 4 credits)
Visual and Performing Arts Requirement (~3 Credits)
History Requirement (~ 3 Credits)
Credits: 18

TOTAL for SENIOR year: 33 Credits

Off the Bench

Get in the Game with Extracurriculars!

Organizations and Leadership

Name: Patricia Rojas, CC'11
Major: Environmental Biology
Extracurricular Activities: Latino Heritage Month (LHM) committee; Grupo Quisqueyano (GQ); Charles Drew Pre-Med Society; Sigma Lambda Gamma
Random Fact: My interests are in eliminating local and international health disparities, education, and women's empowerment. I am confident yet down-to-earth and always prefer to be in good company.

Once the word "leadership" comes into conversation between pre-medical students, few of us are aware of our actual involvement and activities. Talking about oneself and their leadership activities, especially in a competitive environment like Columbia, can be uncomfortable. Before we answer any questions about leadership, undergraduates need to understand the concept of quality versus quantity.

Speaking from my experience as a senior pre-medical student, I want underclassmen to understand that it is important to select a maximum of two activities and then choose an internship/volunteer opportunity that best fits your interests. Once you become active in a *few* (as opposed to many) activities, you will have gained the experience you need to make a difference. For example, you will be better able to introduce new ideas to groups and will be a stronger advocate for your specific cause. Becoming involved with too many organizations can lead to dangerous outcomes: 1) burnout and becoming an unreliable individual or 2) spreading yourself too thin and potentially ruining your reputation.

Personally, it was a struggle to find the perfect match that suited my interests. I was very passionate about making the Latino community more visible and active on this campus. I started talking to a few of my peers about my plans and started doing my research. I volunteered for several positions during my freshman and sophomore years. During my freshman year, I was a general body member for a number of organizations. I wanted to understand the unique mission statements and general group dynamics of each group. Once I found my niche in sophomore year, I was ready to dedicate all of my focus and energy on the two-three activities that I am a part of now.

Ultimately, you do not have as much time as you would think during your undergraduate years. I would advise any pre-medical student who would like to succeed both academically and in the leadership activities outside the classroom, be introspective and start thinking *early* about what you think you would like to do during your first and second years.

Athletics

Name: Kyra Caldwell, CC'12
Major: Concentration in Religion
Extracurricular Activities: Track and field; Athletes in Action; Bible Study; Academic Success Program; MedPrep
Random Fact: I have 6 siblings.

Follow your dream-don't do it for the money. Every day many students are turning to careers in medicine solely for the financial benefits. Even more decide they want to become doctors all because of the six figure salary. If that's the ONLY reason that you want to become a doctor, then you might want to try another field. I decided I wanted to become a doctor when I was a young child in elementary school. I would read all types of science books, trying to memorize the anatomy of the body because I knew that one day I would be going to college to become a doctor. In high school, I decided I no longer wanted to become a doctor, there were other careers that required less schooling and that had higher salary caps. Eventually I realized that is not the life I wanted to live, I had a passion for medicine.

It is never too late to decide to follow your passion! Becoming a doctor requires a very demanding workload, but if the medical field is where your heart is, keep striving until you reach your goal. I started the premed curriculum second semester of my sophomore year of college. When I first arrived at Columbia, I thought I wanted to be a Business guru on Wall Street. After taking introductory Economics classes, and interning at a consulting firm in Times Square, I knew that business was not for me. I had many doubts that it would be too late to turn to the medical career, but I knew that it was where I wanted to be, so I didn't let those fears and doubts get in my way.

The Pre-Med Curriculum at Columbia University can be completed within 2-3 years. I consulted my advisors and we are currently working on a way to fit in all the Pre-med courses before I graduate. Because the pre-med curriculum consists of Chemistry, Biology, Organic Chemistry, Physics, and labs to accompany each, it is very common that students complete the requirements within 2-3 years. As an athlete it is wise to spread out your science classes, so not to be burdened with a heavy class schedule during your sports season. Medical schools want to see that you can do well in your science courses.

Managing your time wisely! It can be hard to fit class, practice, and study-time into one day, but it is possible. Managing your time wisely is very important as a student athlete. You may have midterm and a championship game within the same week, but as long as you prepare ahead of time, you will survive. Use your planner and be aware of tests. As an Ivy League student athlete, managing time is key.

Taking advantage of tutors: The athletic department offers free tutoring services to varsity athletes. At Columbia University, as a varsity athlete, you are entitled to at least one tutor a semester. If you are having trouble in a course, or even if you anticipate having trouble in a course, you should contact the Athletics Department of Intercollegiate athletics in Dodge fitness center. Tutors for core classes, as well as math and science classes are offered at no cost. If you're a pre-med student, excelling at your science courses and happen to need a job, you might want to consult the Athletics department as well. They pay tutors very well.

Networking with Alumni is also helpful as a student athlete. Former Columbia athletes love giving back to their community. Many Columbia alumni are willing to lend a helping hand to players that are interested in similar career paths. Go to the networking events and mingle with doctors. Who knows, you may land a research job!

Dance: a Passion, an Outlet

Name: Chinyere "ChiChi" Okunji, CC'12
Major: Biochemistry
Extracurricular Activities: Sabor Dance Troupe; Raw Elementz; Intercultural Resource Center (IRC); Multicultural Recruitment Committee (MRC); Charles Drew Pre-Medical Society; STRIVE
Random Fact: I was born in Nigeria and came to the US at age 4.

Passion: This is usually what drives people and motivates them in spite of adversity and insurmountable obstacles. What is my passion? I love to dance and honestly my love for dance developed in high school. When I came to Columbia, my first goal was to find a dance team which would be the perfect fit for me— where I could grow as a dancer and as a leader. I think most pre-medical students and college students, in general, have realized that the biggest challenge with adjusting to college is finding a balance with coursework, social life, and extracurricular activities. Frankly, I am still trying to find that balance; but I have realized that dancing is essential to my happiness and sanity. As a result, freshman year, I joined Sabor, a Latino dance group. I was able to learn different genres of dance which I would never have had the chance to do and most of all perform each and every one of them. In fact, I became comfortable free-styling at events with a partner and quickly started picking up choreography in salsa, bachata, merengue; even though hip-hop was my primary style and genre of choice. On the side, I began choreographing and collaborating with other dancers and became nostalgic and yearned for my first love: hip-hop. I was always interested in joining a hip-hop group, but first I had to develop my own style and grow as a dancer. Fall semester of junior year, I joined Raw Elementz and was introduced to a different team dynamic, style, and manner of teaching. In addition, I had to become accustomed to attending practices, competitions, and performances for two dance teams. That was a real struggle.

While I realized dancing was my life, my first love, and passion; I also realized that I could not sacrifice my grades or my dream to become a physician. Many times I was exhausted after rushing to meetings, trying to coordinate Sabor's annual show as a co-captain, and still attending practices. In fact, I became unhappy with myself and really doubted how I could handle so much responsibility and so many obligations. This tangled mess combined with organic chemistry and laboratory seemed to be the breaking point. That following winter break, I took some time away for myself to reevaluate my priorities, determine what I could realistically accomplish as a human (not as an over-achieving exemplary student), and decided to cut back. I do not regret this experience at all and actually advise all students to follow their passions whether it is dancing, singing, acting, spoken word and poetry; because pursing your passion is vital for not only happiness and mental stability, but also for framing you as an individual who takes pleasure in other things besides academia. Right now, I am content with my course load and my future endeavors and I know that someday I will be able to merge these two passions: dancing and patient care; perhaps in some creative, intriguing way.

A Peek into Medicine: Shadowing Physicians

Name: Angelica Lopez, BC'13
Major: Spanish and Latin American Cultures
Extracurricular Activities: Grupo Quisqueyano; Diversity Special Interest Housing; Charles Drew Pre-Medical Society
Random Fact: My favorite word is tomato.

It was February of my freshman year and my summer plans were nowhere near certain. A rough first semester had discouraged me from applying to any programs that had a high GPA cutoff. Finally, after speaking to an advisor I gathered the courage to ask for recommendations. I told my recommender about my pre-med interests and she referred me to an amazing doctor. When I met Dr. Meah at Mt. Sinai for the first time, she offered me the option of shadowing her any time that was convenient for both of us. Although I was a bit surprised that she offered me an opportunity on our first meeting, I gladly accepted her offer. My lifelong dream of becoming a doctor was sparked anew after a very doubtful freshman year.

When fall semester of my sophomore year came around, I arranged my schedule so that my Fridays were open for shadowing. Dr. Meah is a primary care doctor at Mt. Sinai who works with the Visiting Doctors Program. Physicians who are part of the program visit ill patients who are unable to leave their homes, and follow up with all of their medical care including anything from X-rays to flu shots. In other words, Dr. Meah does house calls in New York City, something that was and still is fascinating.

I walked into the office in October and waited until Dr. Meah came in with her rolling bookbag full of medical supplies: flu shots, band-aids, gauzes, a pulse oximeter, a thermometer, a blood pressure pump, a stethoscope and anything else that she would need to treat her patients. I did not really know what to expect. The home of the first patient was within walking distance and so on our way there, she explained his medical history and any medical jargon that I was unfamiliar with. While at his home, she and a medical student performed a neurological exam and spoke to the patient about some recent abnormal results. I listened and looked around. There is something about visiting a patient in their home that gives the doctor a different perspective on ways to perform their job. A very personal side of the patient is revealed that is not always apparent in a visit to the hospital. One day was all I needed to reaffirm my hopes of becoming a doctor and reassure myself that medicine was the right career for me. Through this experience, I learned how to measure blood oxygen levels, take blood pressure, and the right techniques for giving a flu shot.

Week after week, I went in and learned new facts and techniques about primary care. I realized that I could do much more than just observe. I began interacting more with the patients and they felt

comfortable around me, as a great part of Dr. Meah's patient population is Hispanic and Spanish speaking. Therefore, I often translated and it felt rewarding to know that the patients had fully understood everything that Dr. Meah had recommended for them to do and that I was able to take part in such a special process. In addition, after taking several biology courses, I had studied many diseases and what caused them. Being able to see how these illnesses are manifested in real life allowed me to gain a deeper understanding of what I had learned in class.

As a pre-med student, I would say the most important thing one can do is to make sure that people around you are aware of your career goals. The connections that other people have are always surprising, and you never know whom you may meet nor what opportunities are in store for you through these connections. However, some people may try to discourage you from pursuing a career in medicine by emphasizing the difficulties associated with this path. It is important to remind yourself of your drive to become a doctor whenever you encounter these negative situations.. The more you tell others that in spite of any obstacles, you can and will be a doctor, the more you will believe it yourself.

Displaying Your Compassion: Community Service

Name: Lindsey Mitrani, CC'13
Major: Biochemistry
Extracurricular Activities: Varsity Fencing Team; Academic Associates; Charles Drew Pre-Medical Society!
Random Fact: I am from Miami, FL.

Part I: The New York City Community

Attending the convocation speech my first week of Columbia, I remember the speaker emphasizing that we are not just Columbia; we are Columbia University *in the City of New York*. As the excited pre-frosh I was, I nodded, dreaming of the oodles of future free time I would spend frequenting the Met and SoHo alike. This is not to say that my English major friend has not been to the MoMa more times than she can count. However, let's be real, we're pre-meds.

For a while, I lived in a Columbia bubble, barely acknowledging the outside existence of New York, save my few trips to Westside. However, after increasing involvement in Charles Drew, I began to explore the city through their monthly community service events.

Participating in the Breast Cancer 5K walk, I felt the full power of driven New Yorkers. Thousands in pink rallied for a cure, and Charles Drew stood right among them. That was the first time I had gone to Central Park.

Another Friday, many of us joined fellow Columbians at the Church on 113th and Broadway to cook lunch for many of the homeless and needy in the community. I must have chopped 300 orange slices. After lunch preparation, many of us remained to talk with the regulars. This opened my eyes to the New York City locals around our campus. When I walk by many of them, I now smile, acknowledging that Friday afternoon.

Later in the year, I ventured east. I organized a game-day event for locals affected by HIV/AIDS at Faces NY. I recruited supplies from JJ's and the LLC, knowing that their board games would be missing essential pieces. When 15 month old Rae-Rae entered the room, we cracked out the crayons and coloring books. It was difficult to convince her that the blue crayon was not for eating. On the other side of the room, another Columbian was losing miserably to 4 year old Brandon in *Sorry*. It turns out Brandon interpreted moving 5 spaces forward as 15 spaces forward. These community service events define New York City for me. I was more proud of planning a game day event for Faces NY than any 'A' I achieved on a Chemistry test.

Note: There are many other opportunities available at Columbia. For the emergency thrill, look to volunteering for CU-EMS or Academic Associates at St. Luke's-Roosevelt. Tutoring initiatives exist in Double Discovery Center or America Reads. Sign up with Columbia Community Outreach for a volunteer day. Plenty of opportunities exist around campus, around the community, and beyond. It's easy to get involved.

Part II: Frequenting the Emergency Room…Without Being CAVA'd

Many emergency doctors become superstitious when someone says the 'Q' word. On slow days, they revel in the 'quiet' moments. However as an Academic Associate at St. Luke's, I am in the minority, enjoying the chaos, as it comes around.

As an Academic Associate, I enroll patients in clinical studies, observe traumas, and shadow residents during their rounds. The program offers positions at St. Luke's, Roosevelt, and Mount Sinai. Two students work the station for a 4-hour shift, twice a week.

Most days I focus on enrolling patients in studies. The Gonorrhea/Chlamydia study presents particular challenges. As results for this exam require 2 days to process, doctors in the emergency room would like a set of indicators to correlate the likelihood of the a positive culture. Thus, my job is to approach women who have had a pelvic exam and retrieve their consent to fill out a form of very personal questions.

One Sunday, the attending doctor approached my partner and me with an interesting case. A 32-year-old woman presented herself to the emergency room with abdominal pain. She had been vomiting twice a day for the last month. Earlier, her daughter was sick with a virus. However, the daughter recovered fully, while the mother remained sick. The doctor left us to ponder the case. We checked her medicines, yet she was taking none. We scanned her blood and urine results to no avail. When the attending came back, he told us the cause of ailment for this woman. She was pregnant!

Academic Associates also organizes six events throughout the year in order for us to discuss questions and learn medical techniques. At the last event we learned how to suture. On one side of the room, the doctors brought out pig's feet; the other side of the room contained oranges – for the vegetarians. The resident demonstrating at our table warned us of the dangers of dermabond, which is stronger than sticky glue. He told us of stories where people have glued their eyes shut. After, we worked with the anesthetics, a staple gun, and thread. I think I was best at the staple gun.

Overall, I value my experience as an Academic Associate tremendously. I find the staff to be extremely helpful, whether it be with research or any question about medicine. I recommend this program to anyone seeking clinical experience and/or clinical research.

Local NYC Hospitals to Volunteer

Source: http://www.studentaffairs.columbia.edu/preprofessional/health/opportunities.php

Bellevue Hospital
Contact: Elissa Moore, Coordinator of Emergency Medicine Research
Address:
Emergency Care Institute, Suite 345A
462 First Avenue
New York, NY 10016
Phone: (212) 263 - 2858
Website: http://www.med.nyu.edu/emergency/facilities/bellevue/

Beth Israel Medical Center
Address:
First Avenue at 16th Street
New York, NY 10003
Phone: (212) 420-2000
Website: http://www.wehealny.org/patients/bimc_description.html

Harlem Hospital Center
Contact: Ms. Linda Takourian
Phone: (212) 939-3520
Website: http://www.nyc.gov/html/hhc/html/facilities/harlem.shtml

Hospital for Joint Diseases
Address:
Bernard Aronson Plaza
301 East 17th Street
New York, NY 10003
Phone: (212) 598-6023
Website: http://www.med.nyu.edu/hjd/

Hospital for Special Surgery
Contact: Shahan Hafiz, Volunteer Coordinator
Phone: (212) 606-1228
Email: hafizs@hss.edu
Website: http://www.hss.edu/

Jacobi Medical Center
Contact: Luisa Hernandez
Phone: (718) 918-4881
Email: Luisa.Hernandez@Nbhn.net
Website: http://www.ci.nyc.ny.us/html/hhc/jacobi/home.html

Lenox Hill Hospital
Phone: (212) 434-2600
Website: http://www.lenoxhillhospital.org/help/volunteer.jsp#detail1

Lincoln Hospital
Contact: Mary Cheffers
Address:
234 E 149th Street
New York, NY 10451
Phone: 646.962.4968
Email: heads.up.program@gmail.com
Website: http://www.nyc.gov/html/hhc/lincoln/html/home/home.shtml

Metropolitan Hospital Center
Phone: (212) 423-6262
Website: http://www.nyc.gov/html/hhc/html/facilities/metropolitan.shtml

Mount Sinai Hospital
Contact: Kaye Derman
Email: kay.derman@mssm.edu
Website: http://www.mountsinai.org/

NYU Downtown Hospital
Address: Volunteer Department
New York Downtown Hospital
59 Maiden Lane, 6th Floor
New York, NY 10038
Phone: (917) 286-2571
Email: william.wang@downtownhospital.org

Website: http://www.downtownhospital.org/

Positive Health Project
Contact: Alfred Lewis
Address:
Positive Health Project, Inc.
301 West 37th Street
New York, New York 10018
Phone: 212-465-8304 Ext 112
Website: http://www.positivehealthproject.org

St. Vincent's Pre-Health Rotation Program
Contact: Sister Patricia Cusack
Address:
130 W. 12th Street
New York, NY 10011
Phone: (212) 604-7265

ALS Research Center at Columbia Presbyterian
Address:
Volunteer Services
710 West 168 th Street , 9 th Floor
New York , NY 10027
Phone: (212) 305-1319
Email: ALScenter@columbia.edu
Website: http://columbiaals.org/

St. Luke's- Roosevelt Hospital Center Premedical Volunteer Program
Roosevelt Hospital
Address:
1000 Tenth Avenue; Volunteer Services Room 1G-49; NYC 10019
(Tenth Avenue between 58th and 59th Streets)
Phone: (212) 523-7155

St Luke's Hospital
Address:
1111 Amsterdam Ave; Volunteer Services
Travers 513; NYC 10025
(Amsterdam at W. 114th Street)
Phone: (212) 523-2188
Website: http://www.wehealny.org/services/slr_volunteer/requirements.asp

The Metropolitan Hospice of Greater New York
Contact: Katherine Azbell
Address:
6323 Seventh Avenue
Brooklyn, NY 11220
Phone: (718) 921-7900
Email: kazbell@mjs.org
Website: http://www.metropolitanhospice.org/

Weill Cornell Medical College
Address:
Volunteer Services Department
525 East 68 th Street
New York, NY 10021
Phone: (212) 746-4396
Website: http://www.med.cornell.edu/

Fulfilling Your Science Curiosity: Research

Name: Randy Subramany, CC'12
Major: Psychology
Extracurricular Activities: Charles Drew Pre-Medical Society; Sigma Phi Epsilon; Interfraternal Council; Columbia University Roadrunner; St. Luke's Hospital Clinical Psychology Intern
Random Fact: I have run 4 half-marathons.

Random Thoughts Through Your Head…

Anyone thinking of doing some research during the school year?
How early should one ask professors for research opportunities? Is early August too early? I would like to do research while getting paid, but really, what are the chances? Are there any tips on scoring paid research positions? Or should I just be thankful if any profs are willing to take me in?

Have you ever thought about any of the previously listed questions? Well, chances are if you are interested in pursuing a career in medicine, health, or any of the natural, and even social, sciences, partaking in research projects and experiments is something that has crossed your mind.

Here are some important tips and suggestions, or even questions, to consider when deciding between research during the year as opposed to other time periods:

- Get started early, some professors particularly like working with freshmen/sophomore students since it can result in having a student who partakes in research for the next three to four years.

- It would be a wise idea to go ahead and start looking at professors who have a field that you are interested in researching and contact them. It might even be possible to set up an interview with them to have them show you around the lab, meet the other students, and discuss what both of your goals are for doing research. You get a feel for the professor and the other students you work with should give you a level of comfort. Both of my labs have hard-working students, but we know how to have fun too. You don't want all work and no play! One lab I visited, I loved the professor and her topic, but her grad students weren't welcoming, and none of them looked particularly happy to be there.

- If you're really looking to do research to get the experience and not just make some extra cash, you will have to devote some time to your lab. It is essentially a job. Depending on your lab, the hours you go in will be different too.

- Time commitment: Some professors and graduate students will require a minimum time commitment of about 10-15 hours per week.

For more information, we can turn to Columbia's own academic departments for some advice:

Biology: http://www.columbia.edu/cu/biology/pages/undergrad/cur/research/
Chemistry: http://www.columbia.edu/cu/chemistry/misc-pages/grouplist.html
Physics: http://www.columbia.edu/cu/physics/research/main/intro/index.html
Psychology: http://www.columbia.edu/cu/psychology/research/participate/opportunities.html

The key and fundamental aspect and element of research is a willingness to be patient and learn from those within the laboratory. From 2009 to 2010, I participated in research relating to olfaction in mice in one of Columbia University's Biological Science/Neuroscience Lab. However, before engaging in such interesting studies and research, my daily laboratory duties ranged from washing materials such as beakers to making sure that graduate students had all the proper materials to conduct experiments such as gel electrophoresis and PCR. All while participating in such tasks, I was able to not only learn about the structure of a proper lab group, but learn about the proper protocols and procedures necessary to become a successful laboratory experimentalists and researcher. When it came time to actually conduct research, not only was I able to learn elementary facts, such as the structure of the brain, and how to operate a microscope and cryostat, but I was able to bear witness to the willingness of graduate students to educate the students who worked for them. Sure, learning about BrdU via fluorescent markers and minor immunohistochemistry was very informative and educational, but the best learning experiencing was witnessing my progression from lab assistant to lab researcher and experimenter.

Mentoring Matters

Name: Yamira Bell, CC'13
Major: Evolutionary Biology
Extracurricular Activities: Columbia University Athletics Women's Varsity Track Athlete; Member of the Charles Drew HS Pipeline Program; A Business Consultant of the Harlem Business Connection Organization, A Level the Field Classroom Enabler
Random Fact: I am not allowed to watch PG-13 movies, even though I am 19. We like to keep it "G" in our home.

As both a mentor and a mentee, I have the privilege of being able to speak on the topic, having experienced both sides. I have found Columbia, especially through programs like the Charles Drew Pre-Medical Organization, a college campus that really fosters mentorship. It was not until I came to college that I recognized the importance of having mentors and identifying those from whom to seek good advice.

Mentors, after the fortune-tellers and prophets, are the next best thing when it comes to understanding what the future has to offer. Their invaluableness comes from the fact that they speak from firsthand experience. One of my greatest challenges in college is remaining focused; I believe that for many college undergraduate students this is an issue. The opportunity at times is overwhelming along with the liberating freedom of choice. The decision making process begins immediately when you step foot on campus. Who do you meet? What group will you associate yourself with? Which classes will you take? Mentors provide direction and help you answer these questions. They are the greatest source for raw unedited data. They give that realistic perspective that is difficult to get from an advisor who might not have gone through the same program or who is cautious about influencing a student's decision. A good mentor asks themselves the question: if I could go back and relive an experience what would I do differently. There, in that response is the advice. This retrospective analyzing benefits both the mentor as well as the mentee because it forces the mentor to reflect upon his or her experience. College moves fairly quickly and reflection is a rare, but important tool, among college students that helps them to improve.

My relationship with my mentee has been very rewarding for me. In addition to being able to share in her joys of academic achievement, she teaches me. My mentee and I were connected through the Charles Drew Pipeline program. Mentoring her has shown me that mentorship takes on a form beyond advice. My experience mentoring my current mentee was very different from my past experience mentoring other high school students. We met in the fall of her senior year. By that time she had completed all of her college applications. Even I was a little intimidated by her ambition. But because I did not want our relationship to be a total waste I considered ways I could be beneficial to

her now. One of the things I did was I connected her with a student that goes to her number one choice college. She was able to ask him advice for the upcoming year and also get a better perspective of that particular school through the eyes of a college freshman. I also connected her to different summer medical programs. Most importantly, I stayed in constant contact with my mentee.

Giving advice is the easy part of mentoring. Effective mentoring requires not only retrospective contemplation and the administration of advice, but also an unselfish dedication to the success of another.

Jobs: A Means of Supporting Oneself

Name: Kimberley Small, CC'13
Major: Neuroscience & Behavior
Extracurricular Activities: Caribbean Students Association; Church Health Ministry; GED Specialist at Community Impact; Charles Drew Pre-Medical Society
Random Fact: My hobbies are playing the keyboard and sleeping.

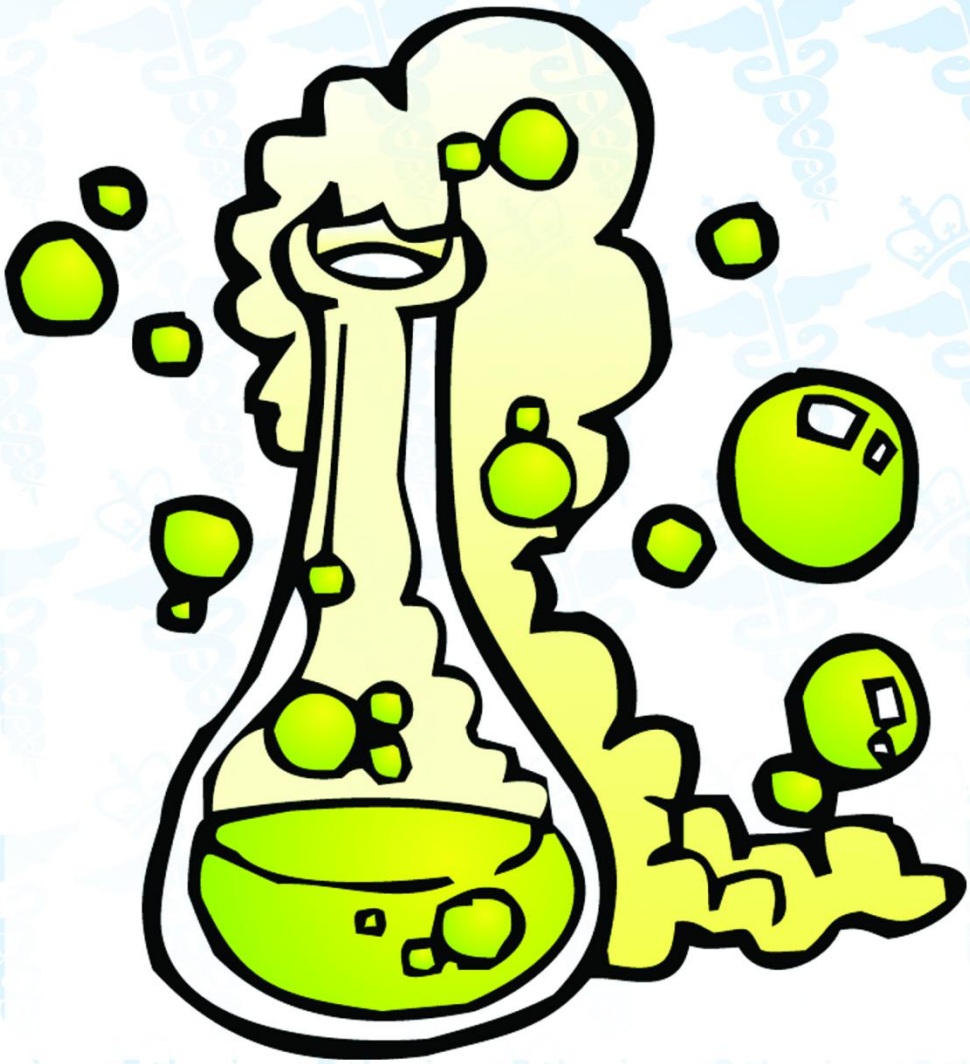
The first semester in college is an unforgettable and albeit disillusioning experience. As a pre-medical student, it can be quite overwhelming as you adjust to the fast pace with which academic material is thrown at you and to the fact that professors actually expect you to understand it all. It's also important to be involved with extracurricular activities and you may need to work to pay for food tuition, etc. I personally work about 10-12 hours a week and I organize and administer student exams as well as manage student records at a GED prep program….So adding a job to an already strenuous workload without getting burnt out is undeniably tricky. Still, there are ways to balance the stress and stay motivated on your journey to becoming a doctor.

The key to balancing a large number of tasks in a relatively short amount of time is adequate planning. If you don't already have these, I'd suggest a daily academic planner, an online calendar, and plenty of colorful post-it notes to help you stay organized. Set aside 15 minutes or less each day for planning and reflection. At the beginning of each week, create a general outline for your required activities in your academic planner and on an online calendar, such as the one by Google, and at the beginning or end of each day insert the details for the upcoming day. Find a time of day that is best for you so that you can reflect on what has happened the day before and make the appropriate adjustments for the rest of the week. Place post-it notes in places in your room that you look at often to remind you of important tasks as well as motivational words to keep you on task.

So, planning helps you know what you need to do, but how do you actually convince yourself to do it? After going to class all day and then going to work in the evening, it is easy to want to go home and go straight to sleep, neglecting to study for the General Chemistry quiz you have the next day. **The best way to stay efficient longer is to remain accountable by working in groups to study. Avoid going home where your bed will tempt you and go straight to a study session.** Having friends around can reduce what seems like absolute exhaustion to a simple yawn every couple of hours and lots of work done. In addition, science is a group activity so the synergy will not only help you finish studying faster but it will actually be more efficient. Take a few breaks but remember to stay focused.

Finally, to avoid burn out, I am a firm believer in naps. Always try to get at 6-8 hours of sleep each night but a realistic pre-med knows this is not always possible. **If you've been running low on sleep, try a nap of an hour or less to give you that extra burst of energy to get you through the day.** However, a good intentioned nap can turn into a 10-hour sleep marathon so to avoid oversleeping, missing school, work and everything in between, **I suggest napping in public places!** Please take care to secure personal items but a nice library nap or a snooze on the lawn can be a quite beneficial time management tool. You'll save time by not having to return to your room and you'll be much less inclined to partake in long hours of sleep.

Making Your Summers Count



Pre-Med Enrichment Programs

Name: Princess Francois, CC'11
Major: History
Extracurricular Activities: Charles Drew Pre-Medical Society; Columbia Community Outreach Planning Committee; Team Leader of "Consent is Sexy" Program; Student Advisor for Emerging Leaders Program; Member of Caribbean Students Association and Haitian Students Association; Bibliographic Assistant and Media Consultant at Butler Reserves
Random Fact: I am a native Brooklynite born of West Indian (Haitian) descent and East Indian (Indian) descent. When it comes to writing and eating, I am a lefty but am ambidextrous in all other aspects.

So Winter rolls around and you begin to worry, "What am I going to do with my summer?" You have heard people say that you should do something valuable with your summer and research is typically recommended thing to do. You see all your friends frantically trying to apply to programs, gather those "recs," and write those personal statements. Then you discover a question on the application asking what research experience you had had. None, that's why you are applying, right? You are a a freshman start to worry that you will have nothing to do for your summer because you have no experience.

Take a minute. Pause. You still have options! Have you ever thought about doing a pre-med enrichment program?

Participating in pre-med enrichment programs were some of the best experiences I had during my undergrad career. Although it sounds cliché, I really would not trade those experiences for anything else in the world. I found them to be invaluable, insightful, inspiring, and just plain fun.

Imagine being in a program with pre-meds from around the country who share your similar interest of medicine but come from diverse backgrounds, different schools, different hometowns, and different hobbies. You are living in a different city for several weeks of the summer with free housing + stipend, taking part in activities that further contribute to your interest in medicine, and doing social activities with all these people. Doesn't that sound sweet?

For the summers after my freshmen year and sophomore year, I took part in pre-med enrichment programs. During January of my freshman year, I attended an event held by the pre-med office about summer opportunities. I heard a student talk about the **S**ummer **M**edical and **D**ental **E**ducation **P**rogram (SMDEP) and it immediately caught my attention. I did not know any better so I applied to just that one program. Fortunately, I got in! For my application, I did not really know any professors

to ask for letters of recommendations. I looked through the FAQs on the website and found a way of getting around that: **as a freshman, you are allowed to use a high school teacher.** And so, I rushed to my high school in Brooklyn one day to gather letters of recommendation from my high school Physics and A.P. Chemistry teachers. I also asked my University Writing instructor as he was at least one person from college who knew me well.

I attended Yale's SMDEP and had a blast. I absolutely loved living in the same dorm building with 100 other pre-meds ranging from recent high school graduates to rising sophomores. Yale provided us free housing, $17.00 worth of points for food in the cafeteria per day, and a $600 stipend. SMDEP specifically was helpful in providing basic science preparation. Essentially, we covered the first semester's material in Physics and Organic Chemistry. We had lectures every day as well as small recitation sessions a couple times a week. In addition, we took a Medical English class where we learned how to read science articles and discussed various controversial issues. We even put on a skit at the end! We also attended weekly lectures on topics ranging from notetaking to medical school admissions, financing med school, and topics on specific specialties. We received ample opportunities to network: med students served as TAs and RAs, administrators were on hand, and we even had group interviews with the Dean of Multicultural Affairs. I was able to shadow both a pediatrician and an emergency medicine doctor for a few hours. Furthermore, because Yale had the money for this, we went on a group social activity each week. They program coordinators would arrange for transportation for us to go to the beach, the mall, and Six Flags, among other things.

I loved the program the most because of the preparation I received for the upcoming pre-med classes I was going to take. Having this leg up allowed me to feel more prepared and ready to master the material. Secondly, I value the program for the experience of living with so many pre-meds. Although I was not very close with everyone, it is amazing on Facebook to see how everyone still supports each other as we continue on the path to be physicians and how proud we are when we hear another SMDEPer got into med school. I truly value the friendships that I developed with a core group that I am still in contact with. It is important to have such friendships and support systems outside of the Columbia bubble.

The summer after my sophomore year, I attended the University of Pittsburgh's Summer Pre-Medical Academic Enrichment Program (SPAEP). The application process for this summer program was a lot more stressful and nerve-racking. I applied to about 10 different programs, both research and enrichment programs. However, I ran into several problems that I did not realize were issues until I received rejections from 8 out of 10 programs.

However, I think that everything happens for a reason because I fell even more in love with this program. Since it was after my sophomore hell year when I had to take two pre-med classes simultaneously, it was a welcomed change of scenery. My spirits were down and I needed some revitalization. I got this and more from the Pitt program. For example, as a student in the program, I

received free housing, free lunch tickets, $500 of points to spend, and free travel. These were all just some of the perks of this great program. We also received a $1000 stipend.

This program provided us with direct medical exposure. We took a Medical Biology course that allowed us to explore five diseases that adversely affect minorities: AIDS, hypertension, smoking, sickle cell anemia and diabetes. This was done through talks, small-group discussions, and labs such as learning how to do blood glucose measurement, urinanalysis, heart dissection, identification and growth of bacteria, and PPD test. In addition, we learned about these diseases through clinical lectures by physicians who provided information on diagnosis and treatment. Once a week in clinical pathology lab, we read clinical summaries related to diseases we were covering and learned the medical vocabulary involved. Then we saw the internal organs of the patient we had talked about.

Furthermore, I got to shadow an anesthesiologist, view a hysterectomy, visit a pathology clinic, a sickle cell anemia clinic, the NIH, and a psychological ward. We also attended learning skills seminars on note-taking, test-taking, problem solving and memorization techniques as well as weekly "brown bag lunches" where minority physicians gave informal presentations on their backgrounds, preparation, interests and goals. To top it off, we became a close family that did a wide range of social activities weekly such as go atop a mountain and view the city, attend a BBQ with med students, doctors, and administrators, go clubbing, or go to an amusement park. This was an invaluable experience that I do not think I would have been able to get from anywhere else. It let me experience firsthand the life of a med student.

The following year I applied to about 15 programs (which was crazy). However, because I learned from my mistakes, the process was less stressful. I ended up not needing to apply to as many as I did since I got into 9 of the programs I applied to. I ended up doing SURF for 10 weeks at Boston University where I received free housing + travel to and from class + $4500 stipend. In addition, I was provided travel and hotel to return to Boston from New York in October to present my research.

And so I leave you with these **10 top tidbits for applying to summer programs**, whether research or enrichment that I realized along the way through my mistakes:

General Tidbits:

1. It is important to have taken Biology to do research programs unless it is Columbia SURF or they state you do not need it. Most of them want you to have this under your belt.
2. Most applications require: application (online or by mail), personal statement(s), letters of recommendations, transcript, and resume.
3. Apply to a bunch of programs. Do not put all your eggs in one basket as these programs are very competitive. For example Boston University's SURF program only took 19 students out of nearly 400 applicants!
4. To make life easier, compose a Word Document or Excel document with the name, address and contact info of all places you are considering along with deadlines, essay questions they

want answered, and components of the application they want. This allows you to be efficient to ensure you have sent everything in and allows you to be able to multitask and stay on top of multiple applications.

Letter of Recommendations:

5. You really need letters of recommendations from a *science* professor. It does not have to be a lecture class but *Frontiers of Science* does not really count. It is best to use a lab professor such Biology Lab or from a previous research mentor or professor you had in an enrichment program. It needs to be someone who really knows you. Having a strong, personal letter of recommendation makes a huge difference.
6. Make sure to ask your recommenders for letters at least a month in advance as they are busy. Make sure to email them your resume and a list of places and addresses that you are applying to. Make sure you ask for a strong letter of recommendation.

Meeting Deadlines:

7. Search for and apply to programs during winter break. You will feel so much less stress coming into the new semester. It becomes problematic balancing the upcoming deadlines of the programs with doing school work. My sophomore year I was two weeks behind in work because all my energy was devoted to gathering all my application materials.
8. Make sure everything is sent to the programs at least a week before the deadline so they receive it by the date since it is by mail (I mean everything…transcript, letters of recommendation, etc). Also it allows you to have time to spare if something goes wrong with the online application, etc.

Essays:

9. When applying to research programs, they often want you to be interested in MD/PhD. Even if you are not sure about this, check the box and think about what your research interests might be. Write this up in your essay.
10. When writing your essays, a good structure to follow is:
    a. Provide personal background. Include why you want to be a doctor, your interest in science/medicine/research.
    b. Show interest in the program you are applying to. Why do you want to participate in *this* particular program?
    c. Discuss the experience and skills you will bring to the program. For research, discuss previous experiences briefly. If you have not done research, discuss why you have not had the opportunity to do so (i.e. disadvantage background or had to work instead)
    d. Conclude by summarizing what do you think you will get out of participating in the program (and what you will give back!). Name specific things from the program's website about the program and the institution to show you have done your research on the program. Make sure to mention the name of the program specifically in the essay to make it more personable.

On the Bench with Research

Name: Brian Lewis, CC'11
Major: Biochemistry
Extracurricular Activities: Student Researcher; Robert Wood Johnson University Hospital Volunteer; Bible Study; Charles Drew Pre-Medical Society
Random Fact: Throughout high school I was the Youth Chair Representative for the NAACP.

Summer Research is just one option that all premedical students can take advantage of at Columbia, as well as at other universities nationally and internationally. Every summer research experience differs, but the key to having an effective research experience is to apply to research programs that allow you to explore an aspect of scientific research that you are interested in. This guarantees that you will be invested in your research as well as able to intellectually contribute to your project when the time comes.

During the summer of 2009, I conducted research at Duke University in the genetics and biochemistry department. Duke SROP covers your travel costs, gives you free housing, and a stipend of $5000. I conducted research on Natural Antisense regulation in *S. Pombe*. The application process took about 20 minutes to complete, but was well worth it. I loved this program because it was the first research experience that I had as an undergraduate.

During the summer of 2010, I conducted research at the University of Michigan in the biophysics and biochemistry department. The Biophysics program covers your travel costs, gives you free housing, and a stipend of $5000 in addition to planning monthly trips for you. I conducted research on DNA looping. The application process took about 40 minutes to complete, and like before, was well worth it. I loved my lab, and I consider my PI to be a close personal friend.

There are many different types of research opportunities, and they stretch across every aspect of science. All programs have different requirements, and many programs do not require students to have participated in research prior to their program. While conducting research, you will build a strong relationship with your principle investigator as well as build a lasting relationship with many members of the investigative team. Hopefully your principle investigator (PI) will become a close friend and mentor to you, and may even be one of the people you ask to write a medical school recommendation letter.

Many summer research programs have a poster or a PowerPoint presentation near the end of their program, and should a PI feel that a student have significantly contributed to the research of the lab, he or she might be published. It is important to keep in mind that the purpose of your summer research experience should not be getting published, but rather, seeing if conducting research is the right career path for you. Should you truly enjoy research, you may even want to continue that research during the academic year when you return to Columbia.

Summer research not only gives you insight into working as a researcher; it allows you to explore a new state as well as a different university. Many schools that offer summer research also have a medical school within walking distance. Taking advantage of your proximity to that particular medical school is important, especially if you plan to apply to that school when the time comes. Some students learn a great deal from their research experiences, while others find out that it is not right for them.

Because research is not a requirement for medical school, it is not necessary to participate in it; however, it is recommended that you at least try it once because it could open up new doors for your future. The best way to find out about summer research is to explore the NIH summer research website, and well as talk to the premedical office to see if they have additional options.

Summer Opportunities List

1. Summer Medical and Dental Education Program (SMDEP)

****ALL FRESHMEN AND SOPHOMORES SHOULD APPLY** Due March 1st**

This is a FREE (full tuition, housing, and meals) six-week summer academic enrichment program that offers freshman and sophomore college students intensive and personalized medical and dental school preparation. Program Offerings Include: Academic enrichment in the basic sciences, Career development, Learning-skills seminar, Limited clinical exposure, a financial-planning workshop. The program takes places at several universities each summer, including Yale, Duke, and Columbia.
Website: http://www.smdep.org/

2. Columbia U. Summer Undergraduate Research Fellowships (SURF) and Amgen Scholars Program

The Department of Biological Sciences at Columbia University offers the opportunity for hands-on biology related laboratory research. Most students work either on the Morningside Heights campus or in the biomedical labs at Columbia's Health Sciences Center. You may apply to SURF if you are currently a junior, sophomore, or first-year student in Columbia College, Barnard College, SEAS, or GS. For Amgen, you must be a sophomore or junior. No previous research experience is necessary, and you do not need to be a biology major to apply. Students are expected to work full-time for the duration of the program. The programs run for 10 weeks.
Website: http://www.columbia.edu/cu/biology/ug/surf/ * Due Feb. 1st
http://www.columbia.edu/cu/biology/ug/amgen/index.html

2. Boston University's Summer Undergraduate Research Fellowship (SURF) *Due Feb. 1st*

In this 10 week program rising juniors and rising seniors who are underrepresented minorities in the sciences are able to conduct full-time research in a Boston University Lab in the sciences, technology, or engineering. Furthermore, one attends weekly seminars on topics related to career preparation and current research as well as weekly informal lunches, enrichment activities, and social events. All students have the opportunity to do an oral PowerPoint presentation and a poster presentation.
Website: http://www.bu.edu/urop/surf/

4. St. Luke's Pre-Medical Volunteer Program *All Year Round—No Deadline

St. Luke's-Roosevelt Hospital Center offers a volunteer program designed to give pre-med students an opportunity to interact with patients, be involved in the day-to-day activities of a hospital and assist in achieving higher levels of patient satisfaction as well as shadow physicians.
Website: http://www.wehealny.org/services/slr_volunteer/requirements.asp

5. University of Michigan Biophysics Summer Research for Undergraduates Program (REU)

It is a summer research program dedicated to provide select undergraduates an opportunity to conduct ten weeks of summer research with leading biophysicists. **Website:** http://biop.lsa.umich.edu/REU.aspx

6. Emergency Department Clinical Exposure and Mentoring Program *Year Round
Volunteer in a busy urban emergency department at the Albert Einstein College of Medicine, shadow an ER physician, conduct clinical research, and participate in community service activities. African-American, Hispanic or Native American college students and premedical Post Baccalaureate students are eligible. Students intending to reapply to medical school after one unsuccessful application can also apply. **Website: http://www.aecom.yu.edu/admissions/page.aspx?ID=3088**

7. Northeast Regional Alliance MedPrep Scholars Program *Due Feb. 15
****ALL FRESHMEN SHOULD APPLY***
The MedPrep Program spans for three straight summers. The first summer you will receive academic prep in the basic sciences. Second summer you will gain MCAT preparation and clinical experience and the last summer you will get research experience. Must have at least a 3.0 GPA and a resident of the NYC five boroughs, Westchester or NJ. Throughout the entire program, you will receive individualized educational planning.
Website: http://www.oda-ps.cumc.columbia.edu/nera/application.html

8. Summer Premedical Academic Enrichment Program at the University of Pittsburgh School of Medicine—Level I *Due March 1st*
In this six week program, one has the opportunity to study five diseases that have a significant impact in minority communities: AIDS, hypertension, smoking, sickle cell anemia and diabetes. This is done through talks, clinical lectures by physicians, small-group discussions, and labs. Furthermore, one gets to engage in various activities such as shadowing physicians, clinical pathology, viewing surgery in the operating room and participating in a community health activity. There are learning skills seminars on note-taking, test-taking, problem solving and memorization techniques as well as weekly "brown bag lunch" in which minority physicians will give informal presentations on their backgrounds, preparation, interests and goals.
Website: http://www.medschool.pitt.edu/future/future_03_spaep.asp

FOR MORE LISTINGS:

- **Columbia University's Pre-professional:**
  http://www.studentaffairs.columbia.edu/preprofessional/health/opportunities.php
- **Health Professions Advisory Program website:** http://hpap.syr.edu/spstate.htm#toc
- **Comprehensive List of Summer Undergraduate Research Programs**
  https://www.amherst.edu/academiclife/departments/neuroscience/summerresearch
- **Spreadsheet of Summer Undergraduate Opportunities:**
  http://spreadsheets.google.com/ccc?key=p92ETnG5q-jCk7QFzkj1pJg

Taking a Summer Class

Name: Tanisha Daniel, CC'11
Major: Hispanic Studies
Extracurricular Activities: Delta Sigma Theta Sorority, Inc.; Black Students Organization; Haitian Students Association; Charles Drew Pre-Medical Society
Random Fact: I plan to move back to South America at some point in my life.

I always knew that I wanted to be a doctor for many personal and professional reasons. My interest in the sciences and medicine began long ago with the death of my father. As a child I never understood how and why his body was failing him as a result of his progressive cancer. As a 6 year old, I was never satisfied with his answers to my burning questions when he would come home from the hospital and then go back to the hospital. Although his death signified an ending, for me, it was also a beginning. I began to question any and everything that I possibly could. To this day, I still remain the same in many ways. But what does this have to do with science or medicine? For me, science is all about questions, and in science, there is always room for more exploration, speculation, and sometimes clarification. It allows me to keep asking new questions and to answer some of those burning questions that once seemed impossible to comprehend. What is cancer? How does it develop? What can be done to treat it? Medicine is a practice that involves the active analysis of such scientific processes as well as an understanding of how a body functions. How foreign substances—malignant or benign—affect and change our complex biological system.

When I arrived at Columbia, like any other ambitious student, I immediately started taking the required courses. However, not much time had passed -- perhaps two weeks --- when I realized that I had a tough and long road ahead of me. Being a pre-med student is draining. But you have to believe in yourself when no one else will. You have to stay up studying when everyone else has gone to bed. The premed lifestyle also demands that you make some serious sacrifices and difficult choices. For example, you may have to choose between having a great social life and getting an A in a crucial class. Another tough choice might be having to decide between choosing a classical major that fits with the traditional medical path versus choosing a major that truly makes you happy, or settling for the major you think will give you a higher overall grade point average.

Here is a little background about my Pre-med journey at Columbia. I came to CU swearing up and down that I was going to be a Biochemistry major since science classes were easy as pie in high school. My first major wakeup call: Chemistry I lecture final grade. From here, like many of you I started to panic and doubt my academic abilities. Was I the only one struggling? Was I smart enough? Did my high school truly prepare me for this mess that I put myself in? Should I quit? WHAT DO I DO? There were so many questions, but not enough answers.

A second issue that came up immediately after my chemistry grade experience was related to advising. I found that the Pre-professional Office was not helpful at all at making me feel better about my current situation. If anything, over the years I always felt as though I was discouraged more than encouraged about anything medically related and their general responses left me feeling anything but sure about how to deal with a given issue. Here is where I had to do some soul searching and seek out assistance outside of the Columbia system. Fortunately for me, by this point I had found a home in the Black Students Organization. Board members and regular patrons alike were always quick to lend out a helping hand or share some motivating words. Upperclassmen in my community looked out for me and gave me very sound advice as to how to go about navigating Columbia's system, stay on top of my work and use the resources available to me wisely. They supported my decision to remain a pre-med student and sought to provide me with as many tools as possible to work towards that goal.

First resource: my fellow Black Students Organization (BSO) member told me about the Summer Medical and Dental Education Program (SMDEP). SMDEP is geared toward minorities and/or financially disenfranchised groups. This program is offered throughout the nation at premier institutions such as Columbia University and Duke University. SMDEP is geared towards preparing students for future courses of the pre-medical curriculum while providing access to current medical students as mentors and tutors. Those six weeks gave me my first in depth look at medicine from the inside with honest input from practicing physicians which occurred via tailored seminars throughout the week. The biggest lesson that I learned from this program and from my BSO mentor was to use my summers wisely. In other words, in order to be a strong applicant in the future I needed to be well rounded and well versed in what it means to be doctor. By my junior year, I realized that I needed to be the kind of student who did what was best for her and decided not to follow advice from people who were not willing to think outside of the box or deviate from the traditional route.

My junior year was very much a turning point for me both academically and personally. It was the year in which I sought out and gained membership into Delta Sigma Theta Sorority, Incorporated. It was also the year that I decided to make the huge decision of studying abroad. As a Hispanic Studies major, which I formally decided that very same year, I really wanted to take advantage of all that the department had to offer. The greatest opportunity and equally daunting challenge was to leave my comforts of home and campus life to travel to a foreign land, fully immersing myself in Latin culture. One tough decision I had to make in order to stay on track with my pre-med courses, was to take Organic Chemistry over the summer.

Most, if not all, pre-med advisors will tell you NOT to take a summer course. I, personally, am an advocate of summer courses because it allows you to get a more focused experience with the material. Granted, the amount of time to learn the material is significantly reduced, the almost daily reinforcement and consistent interaction with professors greatly outweighs the time crunch. It is also much easier to do well when you only have one task to accomplish. The main drawback of summer classes, however, is cost. Especially when you consider housing--for many of us, paying upwards of $10,000 for one course during a summer session is not an option. But as stated earlier, being pre-med involves making tough decisions to reach the end goal. You are also allowed to have fun. During the fall semester of my senior year, I did a study abroad program in Argentina. And yes, I am still graduating on time with all of my classes completed. On May 18, 2011, I will proudly be able to say, in spite of all the trials and tribulations I faced over the four years that I graduated from Columbia University as a pre-med student. With enough persistence and perseverance, by the time you graduate you will be able to do the same—it's all a matter of dedication and hard work.

Volunteering Locally: EMT

Name: Johanna Miele, CC'12
Major: Psychology
Extracurricular Activities: Sigma Lambda Gamma National Sorority Inc.; Relay for Life; Columbia University- Emergency Medical Services; Bay Ridge Area Volunteer Organization; Charles Drew Pre-Medical Society
Random Fact: I talk in my sleep.

After my first year here at Columbia University, I decided to sign up to become a Columbia Area Volunteer Ambulance's Emergency Medical Technician that summer. It worked out great with my summer schedule while I was an research assistant at a psychology lab. I would work 10AM to 4PM then go to EMS class right on campus at 5PM. I was very lucky to have a very animated teacher with decade worth of experience that made that class the highlight of my summer vacation. At the time, I was pre-med and wanted to get more physical experience with patients outside of patient escort and shadowing doctors. From the first moment you begin training as an EMT-B you will be confronted with how important this role is in pre-hospital care. For me, EMS has provided me with the opportunity to participate in the medical world, while I pursue my interests in public health. It has also heightened my interest in Emergency Preparedness, where health officials determine how medical resources will be distributed during an emergency such as Hurricane Katrina.

For pre-meds, it provides a unique opportunity that exposes them to the realities of medicine. Some people will not realize that they faint at the sight of blood, vomit at the sight of the deceased until they reach medical school. These aversions, particularly to the deceased, become a serious problem when they begin their first anatomy class. In EMS these are things that you may see very frequently, particularly trauma patients test your ability to handle all of these factors. One rule of thumb that most medical professionals use is "you don't know how you are going to react until you are in that situation". This rule is very applicable when faced with very gory scenes.

Another quality that becomes extremely useful for a pre-med later in life is building communication skills with patients. In any case, communication is a valuable skill in high stress situations particularly when speaking to other medical professionals such as doctors, nurses and paramedics. Often third or fourth year medical students are confronted with a situation in which they need to decide quickly and determine the best treatment for a patient. In EMS, these types of decisions are being made constantly so you can build up experience and functional well in high stress and high stakes situation. It also evokes a sense of responsibility that is very removed from the premedical education track. Since you are not a license professional until you graduate medical school, some people don't feel that sense of responsibility for their patient until their last years. When you are

working on an ambulance, although there is a sense of hierarchy, everyone on that crew is responsible for some aspect of that patient's well being until they are released into the hospitals care.

From speaking with fellow EMTs in my neighborhood ambulance, they say that it is really useful to come into the medical system knowing the medical system. For example, you interact with FDNY, NYPD as well hospital employees if you are an EMT in NY, which allows you to understand how things work. For those who want to become paramedics, the opportunities are endless because you would be one of the few new physicians with years of experience in putting in an IV and working with certain narcotics. Currently, I volunteer for two organizations and I have seen many alumni from both ambulance corps go on to become very successful medical and public health professionals.

Volunteering Abroad

Name: Amy Huang, CC'11
Major: Biology
Extracurricular Activities: Barnard-Columbia Public Health Society (BCUPHS); CU-Smile; Columbia Parkour; Asian Youth Program mentor; Peace by Peace volunteer; former GED tutor
Random Fact: I love to paint and draw. Fortunately, I've made time so I am still able to. My childhood dream job was to be a fashion designer or a tattoo artist.

As a Columbian and a college student on a tight budget, I have rarely ventured outside the boundaries of New York City. The city has all we need in terms of diversity and amenities. It is as if groups of people from every country around the world gathered in this small corner of the world to exchange ideas, foods, and ways of living. Living in this city for more than twenty years has also made me too comfortable. When I volunteered in Hong Kong for the first time, I was a little apprehensive and uncertain of how I should carry myself through this journey.

When I arrived in Hong Kong, I became eager to visit every nook and cranny of the city, sampling every food cart item, and meeting the locals. I remember my uncle say to me, many years ago, "Hong Kong is like a very large Chinatown!" emphasizing the "very". The streets, unlike the planned streets of NYC, are highly confusing to navigate for the tourist. I got lost many times, but instead of panicking, I inhaled the scents of the city and relished the feeling of being lost. All roads lead to somewhere.

I participated in the Columbia Experience Overseas (CEO) Program in Hong Kong, so I had the opportunity to make new Columbia friends and interact with alumni. Columbia also awarded scholarships and grants to help make my journey more affordable. Volunteering abroad is a life-changing experience. It provided me with the opportunity to learn a lot through my constant interactions with the locals and my employers. I can say that you will definitely get more out of the experience if you are prepared with a list of goals you want to accomplish during your stay, and if you are armed with knowledge about the country, but still approach the experience with an open mind and appreciation for the culture in which you are going to be immersed. Get lost and wander, but do not be afraid to ask for help.

I worked at Enlighten Action for Epilepsy, a non-profit that assist and supports people with epilepsy. During my summer, I planned workshops for the children, most of whom have both epilepsy and learning disabilities. Though I found it difficult at first to interact with them, we eventually bonded in the most meaningful way. I also had the opportunity to tutor a girl with cerebral palsy for a day.

Seeing her and her mother living alone in poverty humbled me, but watching her walk with the support of her mother, despite being assigned to a wheelchair for her entire life, was a touching and life-changing moment. These experiences have allowed me to gain a deeper understanding of the experiences of people with mental disability.

As for the question of whether you are required to volunteer abroad as a pre-med, the answer is "no" but you should! The term "global citizen" gets thrown around when we talk about volunteering abroad, but you will not understand the term until you become immersed in the term. It is about being an ambassador for your country, ideas, and culture, showing other people that you care about their well-being even if you do not share the same ideas or culture. Volunteering abroad provides the opportunity to leave a lasting impact on the people you serve. Accomplishing all of this while learning the language and being open-minded and embracing, is a formidable task, but nothing a Columbian cannot achieve.

MCAT
Enough Said

Quick Facts about the MCAT

The MCAT is a 5 ½ hour computerized exam that is comprised of four sections:

- Physical Sciences
- Verbal Reasoning
- Biological Sciences
- Writing Sample

MCAT Scoring Information

The lowest total score you can receive on the MCAT is a 3, and the highest is a 45. It takes about a month to receive your score online.

MCAT Test Dates | MCAT Registration

The MCAT is offered 28 times per year on 24 test dates. The MCAT currently costs $235. This is subject to change so check online for the latest information.

Description of the MCAT Sections:

Physical Sciences

- 52 multiple-choice questions
- 70 minute section
- Tests math skills, physics, and general chemistry
- Scored on a scale of 1-15

Verbal Reasoning

- 40 multiple-choice questions
- 60 minute section
- Tests reading comprehension
- Scored on a scale of 1-15

Writing

- 2 essay questions
- 60 minute section
- Tests the ability to formulate and communicate an argument and convey complex ideas
- Scored on a scale of J (lowest) to T (highest)

Biological Sciences

- 52 multiple-choice questions
- 70 minute section
- Tests basic biology and organic chemistry
- Scored on a scale of 1-15

Format of the Exam:

Test Section	Questions	Time
Tutorial (optional)		10 minutes
Examinee Agreement		10 minutes
Physical Sciences	52	70 minutes
Break (optional)		10 minutes
Verbal Reasoning	40	60 minutes
Break (optional)		10 minutes
Writing Sample	2	60 minutes
Break (optional)		10 minutes
Biological Sciences	52	70 minutes
Void Question		5 minutes
Survey (optional)	12	10 minutes
Total Content Time		4 hours, 25 minutes
Total "Seat" Time		**5 hours, 25 minutes**

HELPFUL INFORMATION

For more general information, go to: https://www.aamc.org/students/applying/mcat/

CONTACT INFORMATION:
The MCAT Program
Association of American Medical Colleges
2450 M St. N.W.
Washington, D.C. 20037-1127

For a complete breakdown of the official topics covered in each section of the MCAT, check out:
https://www.aamc.org/students/applying/mcat/preparing/

Source: http://www.princetonreview.com/medical/mcat-information.aspx

MCAT Studying: Boot Camp

Name: Jenny Ruiz, SEAS'11
Major: Biomedical Engineering
Extracurricular Activities: Hispanic Scholarship Fund (HSF) Scholar Chapter; Chicano Caucus; Society of Hispanic Professional Engineers (SHPE); Charles Drew Pre-Medical Society
Random Fact: I'm from Orange County, CA and I'm 10 minutes from the beach, yet I never learned how to swim.

I took the MCAT the summer after my junior year. I had just finished my last pre-medical class, biology, and thus wanted to take the exam when the subject material was still relatively fresh. I was fortunate to be selected to participate in seven week summer MCAT boot camp program at the University of Michigan. The school paid for my Kaplan class, provided housing, and a stipend. There are several similar summer programs across the nation (as well as programs during the school year); I would highly recommend students to look into them.

I had an extremely positive experience with my Kaplan class. I essentially followed my Kaplan syllabus for the seven weeks. Kaplan provides a wealth of resources, and I definitely took advantage of them and encourage others to do the same. Apart from Kaplan resources, I also used Examkrackers 1001 questions. These are great additional practice problems. After the program ended, I took another month to just take practice tests every other day. The last three weeks before my exam, I would be in the library by 8am ready to take a practice test. This got my body and brain used taking exams at that hour. I would then review the exam in the afternoon. On the days I wasn't taking a practice test, I took section tests. In total I studied for the exam for 2 and half months and took around 15 practice exams. For those 2.5 months, I was fully focused on preparing for the MCAT and nothing else. It was intense but by the end of it I was well prepared.

Preparing for and taking the exam during the summer worked for me. However, everyone is different and it is therefore essential that you find a time that works for you. You should not take the MCAT unless you feel absolutely prepared. I would recommend you take between 10-18 practice exams, making sure you take all the AAMC released exams. This is an exam you only want to take once, therefore make sure you are scoring high on your practice exams before taking the actual one.

In terms of logistics, I registered for the exam in mid May for the July 30 exam. I took the exam in my hometown, and had no problems with registering. However I have heard that some test locations fill up pretty quickly especially in big cities like New York. Thus I would recommend registering early.

I also qualified for the Fee Assistance Program (FAP). This reduced my MCAT registration fee from $225 to $85. I also received a free copy of both The Official Guide to the MCAT Exam and the Medical School Admission Requirements (MSAR®) guide book through FAP. You have to apply to the FAP before you register for the exam in order for it to count. I applied in early May and heard back two weeks later. Once I received notice, I registered for the MCAT.

The MCAT is not an easy exam but if you put in the time and effort, you can certainly do well on it. There is a plethora of ways to prepare for the exam; you have to find one that works best for you. You can do it!!

Helpful Information: The AAMC's Fee Assistance Program (FAP)

The AAMC's Fee Assistance Program (FAP), available to individuals with financial limitations,* assists MCAT examinees and AMCAS applicants by reducing the costs associated. FAP recipients receive:

- Reduction of the MCAT registration fee from $235 to $85.
- Waiver of the application fee for submitting the completed AMCAS application to a maximum of 14 medical schools. (Applicants pay an additional fee for each school beyond the 14 free applications.)

For more information, check out: https://www.aamc.org/students/applying/fap/

MCAT Studying: Kaplan Class

Name: Connie Qiu, SEAS'11
Major: Biomedical Engineering
Extracurricular Activities: Charles Drew Pre-Medical Society; Society of Women Engineers
Random Fact: I like making personal birthday cards.

The MCAT tends to be seen as a four letter acronym that many premeds dread. Rather than seeing it as an obstacle, we must instead remember that it is another part of this journey to get through in order to achieve the final goal – becoming a physician. As long as we think about the MCAT in a better light, we are already one step closer towards a higher score. In order to maximize our potentials and do well, we have to, of course, study for it. We will all prepare for this exam in different ways. The following are just some tips based on personal experience.

Typically, MCAT scores are valid for up to three years. Therefore, you should try to plan accordingly depending on when you expect to apply to and enter medical school. I decided to take a year off to try out a job related to my studies so I did not take the MCAT until the January of my senior year. Keep in mind that the exam is offered many times throughout the year but try to register at least month or two in advance to reserve a spot in a convenient testing site.

Everyone will have a different time table for studying, varying from a month to a year or even more. This completely depends on your personal study habits as most of us may prefer to have the extra time over last minute cramming of the entire pre-med curriculum! If you feel that you may be weak in a certain subject because it was difficult the first time around or because it has been a few semesters since you last touched it, you may want more time to review both content and problems. You may also have to factor in things such as extracurricular activities, internships, research and volunteer obligations, etc. It might be helpful to set aside a certain period of time daily or weekly (whichever works best for you) to sit down and solely focus on MCAT preparation. If you find that studying with a couple of friends is helpful, then it might be a good idea to choose a day and time each week to get together and go over subject material and problems. Of course, you will also likely spend time doing this by yourself in addition to those group study sessions. Some of us study rather well by ourselves, without outside help. You can only do well on the MCAT if you put enough of your own effort into preparing for it.

Some students like me like to have the extra push from someone else to study harder and better and may choose to take a course. I paid for a Kaplan course that spanned over a period of five weeks with five classes per week. I had been away for an internship for most of the summer and this class seemed to fit perfectly between my remaining summer and the beginning of the Fall semester. I personally like to have the course first to get me reacquainted with the material. Then, I plan out my own time to do more problems and reinforce topics that I may struggle with. Some people will prefer to have their course spread over a period of multiple weeks leading up to the exam. Again, this is all up to you! After the course was over, I allotted time each week to try to go over some problems or topics. Winter break fell right before my exam which I felt was a perfect time for me to do nothing but study. I woke up early each morning and did problems until I felt

drained and exhausted. Since the course had provided me with a wide range of materials, I spent that time going through the review notes for each topic and completing the problems and practice exams. I would suggest doing at least one practice exam each week leading up to the exam once you feel that you have a sound grasp of a majority of the material. This way, you won't feel as rushed and you will have an indicator of your progress as the questions in the practice exams are in a very similar format to those that you will see on test day.

Personally, taking the class was really helpful because my instructor had given a lot of useful tips and shortcuts to solve the most frequently seen problems. The resources provided were also great study material. Although the price tag may deter you from taking the courses, no matter which company you choose, you must do what you feel will be most helpful in preparation for the big day. As long as you are determined to become a physician and are willing to do the work necessary to get to that point, both time and money will not seem like burdens. You can also try reaching out to representatives from your preferred test prep company to ask about discounts. In addition, since you are paying the money for the course, you should inquire about the quality and background of your instructor to make sure you get what you paid for. The worst thing would be to pay for a course with an inexperienced instructor, which can happen.

No matter how you decide to prepare for the MCAT, you must ensure that the method works for you. Don't feel pressured into taking a course if you feel that you can do well by yourself and can prove it to yourself by scoring well on practice exams. Be open to all resources that are available to you, whether or not they cost money, as long as they are beneficial. Make sure to plan ahead to give yourself enough time to study rather than feel rushed into the exam. Last but not least, stay focused on reaching your end goal. Although it sounds cliché, as long as you try your best, you will be successful. Good luck, future physicians of America!

Free MCAT Preparation Programs

The Medical Pathway Program by Mentoring in Medicine, Inc.

DESCRIPTION:
It is an intensive 12 week Saturday program focused on study skills, MCAT preparation and leadership development. Join like-minded peers in this intensive boot camp to reinforce study skills, prepare for the MCAT, network with health professionals, improve communication techniques, learn to overcome psychosocial challenges, and much more!

ELIGIBILITY REQUIREMENTS:

- Submit a COMPLETED application with picture
- Plan to take the MCAT from May- September of the year of participation of the program
- Have a cumulative undergraduate science GPA of 2.8 or better
- Commit to attending ALL of the classes

CONTACT INFORMATION:
Email: medicalmentor@gmail.com
Website: www.medicalmentor.org

STAT Program (Strategic Testing Application Techniques for Successful Entry to Medical School) at Columbia University Medical Center

DESCRIPTION:
The STAT Program is a free, intense five month, weekend academic enrichment boot camp to improve students' chances of application to medical school—STAT. STAT students receive rigorous test preparation for the MCAT provided by Princeton Review, in addition, students receive strategies for successful application to medical school and participate in workshops to improve their skills as students during college and medical school. Contact with medical students and faculty as well as individual mentoring by the Office of Diversity is stressed.

STAT will serves up to 20 pre-medical junior, senior and or post-baccalaureate students from underrepresented, disadvantaged, low-income communities, who have been historically underrepresented in medicine.

The program runs from February until the end of June on the campus of the Columbia University Medical Center. Participating students receive a free MCAT course provided by Princeton Review (including all course materials and online access), registration fees for the MCAT exam, and a small stipend upon successful completion of the program.

ELIGIBILITY REQUIREMENTS:

- Submit a COMPLETED Application with:
  - Letter of Recommendation from a pre-health advisor or from a science faculty member
  - Official copy of college transcript
  - Resume
- US citizens or permanent residents
- An overall GPA of 3.0, with 2.75 in the sciences
- Enrolled in or graduated from an accredited NYC college or University.
- **Students must be able to attend classes on the weekend**

CONTACT INFORMATION:

Address:
ATTN: STAT Program
Damaris Javier, M.A., Director
Columbia University College of Physicians & Surgeons
Office of Diversity Affairs
630 West 168th Street, P&S 3-401
New York, NY 10032

Phone: 212-305-4157.
Website: http://www.cumc.columbia.edu/dept/ps/minority/minorityaffairs/programs/stat.html.

MCAT PREP Program at NYU Langone School of Medicine

DESCRIPTION:

Program Goals:

1. To increase the number of underrepresented minorities in medicine entering medical schools by developing a novel MCAT Prep module that integrates intensive classroom instruction with online social networking and mentoring strategies.
2. To integrate into and expand already existing pipeline programs at NYU School of Medicine.
3. To research the effectiveness and outcomes of this program.

ELIGIBILITY REQUIREMENTS:

- Must have completed Sophomore Year.
- Good academic standing, with GPAs 3.2 or higher.
- Demonstrated interest in pursuing medicine as a career.
- Completed application form with required documents:

  - Essay
  - Letter of recommendation
  - transcript
- Ability to attend all scheduled classes.

CONTACT INFORMATION:
Allison F. Avery
Diversity & Community Affairs Manager
Office of Diversity Affairs
Email: Allison.avery@nyumc.org
Phone: (212) 263-2349

Premedical Achievement Program (PMAP) at the Michigan State University College of Human Medicine (MSU-CHM)

DESCRIPTION:
This six-week, intensive MCAT and medical school admissions preparation program is open to disadvantaged students who will be applying to medical school for either the 2011 or 2012 application cycles.

This seven-day-a-week program is designed specifically for those students who are able to participate on a full-time basis. A program stipend may be available for eligible program participants. On-campus housing is optional, but encouraged.

The program provides:

- Structured MCAT/GRE review
- Professional Development Seminars
- Academic Development Seminars
- Clinical and Community Service-Learning
- Community-Based Research

ELIGIBILITY REQUIREMENTS:

- Submit application with:
  - Letters of recommendation
  - Transcript
  - Verification of income form or financial aid report
  - A passport size photo

  - A personal statement
  - Resume (Optional)
- Be from a disadvantaged background.
- Must be a **U.S. citizen** or **permanent resident**; *individuals on temporary or student visas are not eligible*.
- Be a **college junior, senior, or recent graduate**
- Have taken all of pre-med requirements + labs
- Have an overall grade point average of 2.8 or better on a 4.0 scale.

CONTACT INFORMATION:

Address:
Pre-Medical Achievement Program
College of Human Medicine
Michigan State University
A234 Life Sciences Building
East Lansing, MI 48824
Website: www.mdadmissions.msu.edu.

HELPFUL INFORMATION

All Charles Drew Members are eligible for a 10% discount for MCAT Classes with Kaplan Test Prep & Admissions, Inc. Remember to mention you are part of the Charles Drew Pre-Medical Society when registering for a course!

Cost Reduction is also offered to low income students through their Tuition Assistance Program (up to 50%) depending on several factors including, but not limited to, the level of need, personal statement, available funds and the number of applicants.

Email: TuitionAssistance@kaplan.com

Fax: 212.954.5038

Address: KTPA Tuition Assistance, 1440 Broadway, 9th Floor, NY, NY 10018

Quick Tips

Before Test Day:

1. Take the exam the Spring before you plan to submit your application. Ideally, you would want to take it by April so you can receive your scores in May. That way you will have everything ready when the application opens June 1st. This also gives you some leeway time in case you need to take it over again in the summer.

2. PRACTICE, PRACTICE, PRACTICE! Take at least two full-day mock tests. Mimic the testing conditions as best as possible. IDEAL: take 6-7 mock exams. The more questions you practice, the easier it will be to notice common themes and patterns.

3. Read The NY Times (or Chicago Tribune, Washington Post, etc.) everyday

4. Take a review course if you are not disciplined. Otherwise, set a study schedule that you will stick to.

5. Study for the MCAT 4-12 weeks. Any more than that, you will probably drive yourself crazy.

6. Treat the MCAT as a one shot deal— avoid taking it twice.

On Test Day:

1. Get a good night's rest before the test as the exam is very long. Beyond academics, it is a test of endurance so you do not want to feel tired on test day.

2. Eat a good, light, protein breakfast and have a very light protein lunch. You do not want to eat anything too heavy that will make you sleepy. You want something that will provide you with the maximal amount of energy.

3. Things to bring with you:
   - Proper identification: It must have the exact same name you used to register for the exam. Make sure it has not expired. A proper ID is usually a driver's license, state ID, or passport. They do not accept employee IDs, student IDs, library cards, etc.
   - A sweater just in case it is cold

NOTE: You will not be allowed to bring anything but your ID into the room. All personal items, including telephones, pagers, books, handbags, and food must remain in a secure area that will be provided.

NOTE: The test center will provide scratch paper, earplugs (industrial), and pencils.

4. Arrive at least 30 minutes before the scheduled time for check-in.

5. Before you take the exam, take a few moments to take a deep breath and relax.

6. Decide ahead of time how you will take the exam: whether you will answer the questions that are obvious first and then leave some time to answer any remaining questions, or, you will use the maximum amount of time you are allotted to per question.

7. Answer every question. If you do run out of time, just pick a letter and use that to answer the rest of the exam. At least you will have a 20% chance of getting it right.

8. Take some time to think about your essays and outline. You will be assessed on logic and clarity, so you want to take time to formulate a response. Do an outline before you start writing.

9. Take breaks. It will give you a chance to revitalize yourself. During your break, take some time to take deep breaths, stretch, and shake.

10. Do not lose track of time. Leave time to check over your answers. For the multiple choice section, you want to make sure every answer is aligned with the right question. For the writing sample, you want to proofread for grammatical, structural, and content errors as well as just make sure the handwriting is legible for the grader.

After Test Day:

1. Relax! Celebrate! Take some time for self care. It is a BIG accomplishment to take the MCAT.

2. A good score to receive is 30 and above. If you receive anything below a *10 in each section, you should consider re-taking the exam.

SOS

Scope Out Support

Guidance from the Professionals

Name: Antoinette Allen, CC'12
Major: Biology and Sociology Concentrations
Extracurricular Activities: Charles Drew Pre-Medical Society; 117th Annual Varsity Show Artistic Director; McNair Fellow; Darcy Kelley Lab Research Assistant
Random Fact: I like to make vegan baked goods.

The premedical office, located in the CSA on the fourth floor of Lerner Hall, is a resource for all students embarking on the arduous journey that is a medical career. When asked to write this section, I was conflicted. I have heard so many horror stories about people who go into Megan Rigney's office being pre-med and leave an [insert random liberal arts major here]. When I scheduled a meeting with Megan Rigney, understandably, I was scared witless. I did not nearly have the grades need to get into a medical school period, much less the school of my dreams. However when I sat and talked with her, I received very level-headed and applicable advice. I think it was the combination of humbling myself and knowing my severe weaknesses that made the trip to the pre-med office less gut wrenching and more helpful. One notable thing she helped me with was my timing for taking the MCAT. I have decided to take a year or so off after graduation and did not know when was the best time to take the MCAT. I was afraid of forgetting everything I had supposedly learned during my time here during my year off. The solution she gave was to take the MCAT at the end of my junior year, and if I did not like my score, I could try again, just in time for my application during my post-grad year. Even though this piece of advice seems so common sense and so clear, as a anxious pre-med who cannot think straight, it was great to hear it from someone who has seen it all before. Instead of walking out of the office discouraged, I walked out with a revised game plan and a clearer view of what the rest of my time here looked like. My best advice is to know yourself and know your faults so that when someone points them out, you are not surprised. I know you think you are perfect in anyway, but unfortunately, no one is in the eyes of medical school admissions committees.

Unfortunately, I cannot say that in my experience, professors have been helpful in my premed classes. Instead, in my opinion, TAs, or teaching assistants, have been the gold standard for me in terms of understanding class material. Some professors are so caught up in their research or that this subject is so second nature that it is difficult, and often frustrating to explain to students who just do not get it. I frequently fall into that category. The TAs are there to help you. You just have to make it to office hours, which often can be the hardest part. I have a crazy class and work schedule that makes it very difficult to attend office hours, but I also exploit recitations to the fullest. These meetings with your TAs are the only opportunity to ask the difference between allylic and benzylic carbocations or to go

through the algebra in solving a physics problem. These questions are very basic and may be completely ignored during lectures when there are bigger issues to be addressed, but it is the TA's job and your right to make sure you have the basics down pat so that you may understand the more complex material.

Tutoring, now, is a no-brainer, but it took me a while to get to this point. Some logistics about tutoring at Columbia University: the tutoring service is run by Marcella Calidonio in the CSA. There is an application that takes approximately three weeks to be processed. My suggestion is that you apply at the beginning of the semester. Tutoring sessions are usually group sessions that meet for a maximum of two hours a week, although I have had the good fortune of having tutors who made it their personal mission to made sure I had the material down cold and offered extra hours. Like most Columbia University students, I was at the top of my class and on the top of the world my senior year of high school. Then I hit Columbia. Then my GPA nose-dived. I was humbled, yet I did not humble myself enough to apply for a tutor. I thought I was too smart for that. As my GPA continued to decline, I realized that I could not do this alone. I realize now that I should have not waited so long to request a tutor, especially for an important pre-med class, but this experience taught me the difference between accepting defeat and accepting help.

Support from Your Peers

Name: Chinenyenwa "ChiChi" Mpamaugo, CC'13
Major: Neuroscience and Behavior
Extracurricular Activities: Charles Drew Pre-Medical Society; Activities Board at Columbia
Random Fact: I am first generation Nigerian and plan on building a hospital there. I love to dance and make people laugh.

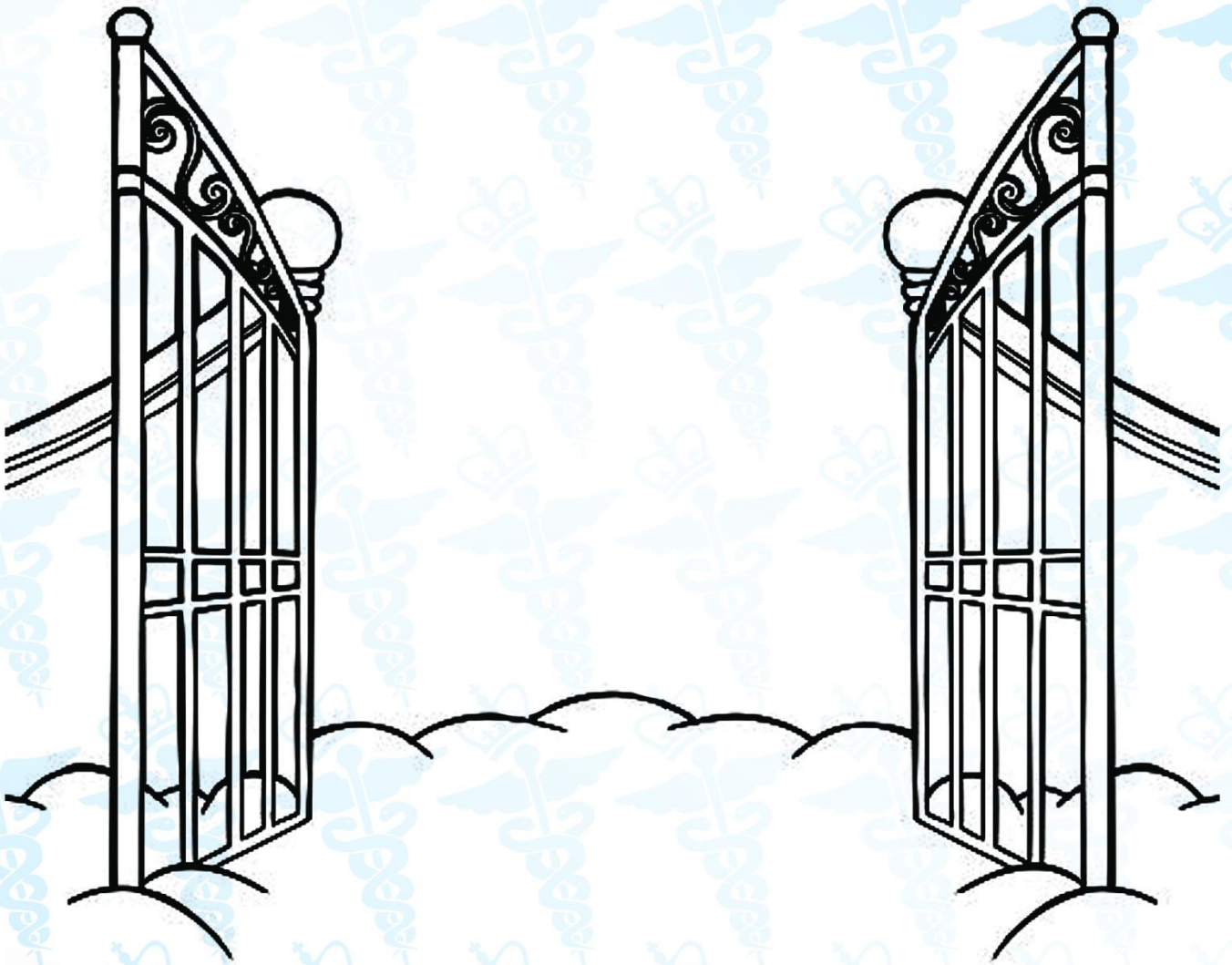
Columbia University can be a very difficult place to navigate when you arrive here. I was introduced to my college advisor and took the opportunity to interact with her and receive some basic advice on my classes and on being premed. She was able to help me with understanding the dates and times that things needed to be accomplished and done with regards to classes and registration. I was fortunate to have an RA that was also premed my freshmen year. She helped me pick which classes to take when and what teachers to take. As a member of the Columbia Mentoring Initiative - Black Family Tree, I was partnered with an upperclassmen mentor. She was a great person to confide in for school purposes and we became close friends. I talked to her about everything she even took some of the classes as me and had the same major. We bonded very well.

I would advise all premedical students to find a peer mentor. As a member of Charles Drew, I find all the older students to be my mentors. They all give different advice and support. I would encourage all students to find a peer mentor that is going or has currently gone through many of the same school experiences that you have.

Through organizations like Charles Drew and summer programs like Medprep, I was able to meet great doctors. I stayed in touch with them so now they mentor me and give me advice on the medical school process. It is important to remember that when you are looking for a mentor, do not expect people to just take you under their wings. It takes a lot of communication and patience because many doctors and medical students also have busy schedules.

I personally struggled to find support and advisors. I now know that I have peers, friends, and teachers I can talk to. Don't be afraid to go to a teacher to talk about your problems; they will do their best to help you if you ask. If you need help in classes form study groups, and also go online and look for free tutors. I would suggest trying to find determination from something within; for me that was my faith. My faith provided me with that that spiritual support. These are just some pieces of advice that I can extend to you.

Beyond the Gates
The Journey Continues...



No Time Off—Applying Straight Through

Name: Mabo Imoisili, CC'10
Major: Political Science
Extracurricular Activities: RA; Volunteered at St. Luke's; AMSA's Public Health Committee; Goju-Ryu Karate Club
Random Fact: I am into martial arts.

On a rainy day in May 2010, my undergraduate experience ended. After four years of academic rigor, of successes and disappointments, emotional highs and lows, internships, meetings, assignments, and everything else, I was done. And, as most were, I was tired. I knew that I would be teaching that summer in a science program for junior high students (a story for another time), but it would not be for a few weeks. Back then, I could think of only two things: how much I needed a break, and how, come August, I would be doing the whole thing over again. Four more years of intensity, this time, Medical school. As I am sure you have heard, medical school is not easy. And, as I am sure that you know, neither is college. So why, did I decide to apply to medical school as an undergraduate?

Do What's Right for You

Looking back, I can't say that I regret my decision. However, I can easily see how somebody might want to defer medical school after college. The first thing that it is important to realize is that having been in school for essentially your entire life, it is easy to let momentum carry you forward. Assuming that you have settled on a career in medicine, applying to medical school while still in college may appear much like applying to college while in high school, even if there are new particulars to consider. My advice would be to try to avoid the route I took as best as possible. For one, there are a lot of options. Looking to the paths my classmates chose, there are a number of exciting (and often unrelated) paths to pursue between college and medical school. People spend time working in finance, pursuing other degrees, working abroad, serving in the military, and getting married. These are only a few of the options available to you.

Personally, I have a rather broad range of interests. I decided to major in Political Science and also explore Economics. While I considered taking time off to explore these aspects of myself more, I decided that it would not be right for me personally. I did not decide all at once, but rather, took my time to weigh my options. I thought not only of what I wanted to do, but, among those things, how much I stood to accomplish in the amount of time that I felt that I wanted to take to do something else. In the end, I decided that starting medical school immediately after college would be best. I came to think that starting medical school earlier might give me a better chance at creating a broader career. While I believe that I will primarily be a clinician, I do have other goals that I want to pursue, which might include other degrees besides an MD. I believed that given these other academic degree interests, it would be best for me to start early.

You have to evaluate what your goals are, what your personal qualities suggest to you, and the conditions of your current situation. While it is always valuable to seek advice from parents, mentors, and friends, but ultimately, the choice is yours and no one else's. This will require reflection and time. You'll know when you've made the right choice.

Work Fast, but Take Your Time

If you do decide to apply to medical school as an undergraduate, I cannot emphasize the importance of working to finish applications sooner rather than later. Depending on the number of schools that you ultimately choose to apply to, the amount of work needed to complete the necessary applications and polish them to your satisfaction can be daunting. It will only be worse if you try to do this while contending with coursework during your senior year. Besides that, it is important to enjoy your senior year and having fewer time commitments can only help you do that. On top of this, consider that some schools have rolling admissions and that applying earlier will likely increase your chances of acceptance. Even for schools that do not have rolling admission policies in place, the benefits of applying appear to be nearly universal.

While working quickly and making sure to stay on top of all your obligations is necessary, it's also important to make sure that you have considered all your options. It is also important to make sure that you are submitting top quality work. It's great to apply early, but if you're not putting your best foot forward, then what's the point? Write what you need to write, then put it away for a while. Come back to it later, and see if it still feels right. Ask others to read your work and offer their advice. I mostly asked family members to read over what I'd written, and talked with friends to get ideas and inspiration. Besides being necessary to getting into medical school, applications can be a good chance to get to know yourself a little better. You'll appreciate the insight and this will make your application better, and you'll be more prepared for interviews as well.

Relax

I'm not going to pretend that the medical school application process isn't a big deal. Between applications and interviews -- not to mention the testing and coursework to back it up -- getting into a medical school is no small task. That said, stressing about everything will not help you in the least. You can't do your best work if you're too busy worrying. This applies to interviews as well. On the morning of my first interview, when I arrived at the seating area for interviewees, I noticed rather quickly the rather tense atmosphere. No one was saying a word. For a little while, I didn't either. But then I realized something: I wanted to. So I did. The mood was lightened, and I think that the interview day went better for everybody because I decided that I didn't want to worry. This outlook helped me with all my other interviews, and while I certainly wasn't accepted to everywhere that I interviewed, I think that just relaxing made things go better than they might have otherwise. Really, the process can be fun. I didn't always enjoy doing applications, but I loved going to new places and meeting new people. For me it presented a welcome change of pace from life as I knew it. So, just to

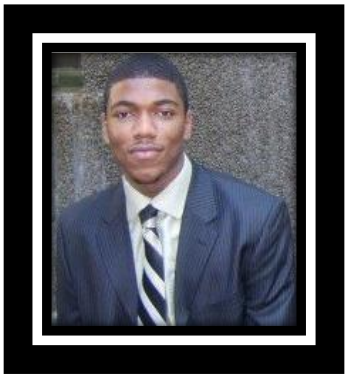
reiterate: Don't worry. You're not doing yourself any favors, and more often than not, everything will turn out just fine.

Being a Traditional Applicant in Medical School

For the record, those of us who do apply to medical school as undergraduates are termed "traditional applicants". By noting this, I don't mean to suggest that one *should* apply as an undergraduate if that is not deemed to be best for the individual, but merely that one should never feel intimidated by the prospect. In my class, we have a fairly even split between people who applied as undergraduates, and people who applied after graduating. There are people who, since they are a little older and have other responsibilities, often families, are relatively less involved with the class. Broadly speaking however, there isn't a distinction especially since most people are only one or two years removed from college before applying. Many of these people have very interesting experiences, and may have insights into certain topics based upon their lives between college and medical school, but everyone in my class is unique and talented in their own way and we all bring those qualities to the table. Medical school will present you with a wealth of information, which you are expected to assimilate in a relatively short period of time. In my view, this quality makes it such that no one is at a particular advantage or disadvantage based on whether they came straight through from college or took another path.

I hope that those who read this find it helpful. I wish the best to all of you!

Post-Baccalaureate Program



Name: Calvin Nash, Post-Bacc'11
Major: Accounting at Morehouse College (2009 Graduate)
Extracurricular Activities: Student Research Scientist at Columbia Medical Center and Case Western University; Volunteer at St. Luke's Hospital; Spelman/Morehouse Toastmasters; Omega Psi Phi Fraternity, Inc.; National Society of Collegiate Scholars
Random Fact: My favorite snack is Dannon Light and Fit Strawberry-Kiwi yogurt!

You find yourself entering the senior year of undergrad and you are not sure what to do next. This is the dilemma faced by so many premedical students at colleges across the country. On one hand, you are positive that you want to be a doctor, but on the other hand, you just want some time off before embarking on a seemingly endless journey into medicine. Or perhaps you are in a different situation. Maybe you have no idea what field you want to go into but you feel the stare of discontent coming from your parents' eyes. No need to fear, the post-bacc program is here!

In our society there are people who like to finish their work in one sitting, while there are others who like to break their work down into smaller components. There is nothing wrong with either way of thinking and both are equally effective depending on your personality. In the case of whether to apply directly to medical school or take time off, it is not so plain and simple. It is true that entering medical school directly from undergrad will decrease the time until you can start your career as a physician, but this is significantly outweighed by the level of rejuvenation you can feel after a year off from school. This may lead to a more productive and enjoyable time in medical school.

You are probably asking, "Well doesn't taking time off make it appear as though I am "undecided" on whether I want to be a doctor". This could not be further from the truth. In fact, depending on the situation it may convince a medical school admissions board that you are definitely passionate about medicine. For instance, picture a student (Ricky) who enters undergrad as a premed. Let's assume both of Ricky's parents are physicians, so that he has not thought of anything else except becoming a doctor. Given the rigor of premed courses, Ricky probably has little time to consider any other career options. His summers are probably spent shadowing a physician and doing biomedical research in a lab. Fast forward to the 3rd year of medical school and Ricky starts to have doubts about his love of medicine. With residency on the horizon, $100K in debt with his name on it, and parents who are proudly looking forward to medical school graduation, Ricky finds himself at a very difficult point in life. This is because he has been so focused on medicine since the beginning of undergrad that there was no time to stop and think if this was the right decision for him. If Ricky had taken at least a year off from school, he would have been free of all the stresses associated with school. This

would have be a chance for him to think deeply about his future career and if it would bring him happiness in life. If he had this time, maybe he would have transitioned at that point and saved himself from enormous debt.

This is the predicament that many students, premed or not, find themselves in while in school. For premeds, one option that can provide a minor break from school while also strengthening your application, should you decide to continue on to medical school, is the post-bacc program. Coming in all shapes and sizes, post-bacc programs give students the opportunity to take time off before entering medical/graduate school. While some programs are focused on equipping students with basic research skills to strengthen their graduate school applications, others focus on improving students grades in courses relevant to medical school i.e. biochemistry. Still, there are also post-bacc programs that give students from completely different fields of work (business, law, education) an opportunity to take coursework needed to enter medical school. Whatever the situation, there is a post-bacc program for you. So for the student like Ricky who has even the slightest doubt about whether medicine is for them or not, you are much better taking time off after undergrad than finding yourself already in medical school considering alternatives. A year off equates to very little in the grand scheme of your career as a physician. Do yourself a favor and take the time you need!

For a listing of Post-Bacc Programs, check out the AAMC's complete listing of Postbaccalaureate Pre-Medical Programs: http://services.aamc.org/postbac/index.cfm

The ABC's of the Gap Time: Teach for America

Name: Princess Francois, CC'11
Major: History
Extracurricular Activities: Charles Drew Pre-Medical Society; Columbia Community Outreach Planning Committee; Team Leader of "Consent is Sexy" Program; Student Advisor for Emerging Leaders Program; Member of Caribbean Students Association and Haitian Students Association; Bibliographic Assistant and Media Consultant at Butler Reserves
Random Fact: I'm a native Brooklynite born of West Indian (Haitian) descent and East Indian (Indian) descent. I'm a lefty when it comes to writing and eating but ambidextrous in all other aspects.

Senior Year hits. Freak out occurs. Ahhhhhh. What am I going to do after graduation? No one, including myself, wants to end up jobless and laying around as a couch potato between college graduation and med school for a year or more. We have been trained to be productive with every moment of free time. But besides being productive and gaining experience, you need to be making money because applying to med school is not cheap!

Thus, the job search begins. The options for me as a pre-med student from Columbia College after graduation seemed limited to doing research or volunteering. However, there are other options, one of which fell into place for me: Teach for America.

I always supported the Teach for America mission of bridging the achievement gap by having enthusiastic, young teachers serve in the country's worst schools. However, I NEVER saw *myself* doing it. I did not think I was cut out for it although I have lots of experiences teaching children in small group settings. Last year, a representative from TFA reached out to me as a leader on campus. That led to a long period of a series of emails from the rep trying to convince me to apply (emails I'm sure many of you ignored or deleted). But I decided not to ignore the emails. From my communications with the TFA rep, I gained opportunities to attend events with celebrities including a fancy reception and TFAs Men in Education Panel which featured Common, John Legend, and the Borough President of Bronx. I also got to have dinner with John Legend. At a certain point, I just decided to apply for two reasons: 1) To get TFA to stop emailing me and 2) I had nothing to lose. I thought, "if I get in, it would be a good backup to have after graduation. "

The initial application process was simple: application, letter of intent, resume, and list of references. It was during the process of writing the letter of intent that I first realized that this is something I

could actually see myself doing. I really connected the idea of empowering premeds to be successful to empowering children. The first shock came when I advanced straight into the final interview. Then the process intensified as I had to fill out a bunch of extra applications that involved typing in all the titles and grades for every college class I have ever taken. I also had to rate my regional preferences for all 40-something regions where I might be placed if accepted into the program. During the application process, I read articles and watched video to answer questions along with preparing for the final interview. The final interview involved conducting a 5-minute lesson plan, taking part in a group discussion on a specific topic, a role play as teacher and principal, and a 45 minute one-on-one interview. I, unlike many other people, did not prepare so much for the final interview because I had so much going on at the time academically and personally. I remember two nights before the interview in Butler I was Googling types of questions TFA would ask and preparing responses. I prepared my lesson plan the night before sometime between 4am and 6am.. But I had given thought previously to what topic I might do for a lesson plan and had even reached out to my former math teacher for advice. I decided to do a lesson on adding polynomials for 7th graders. I spent the wee hours of the night preparing my handout sheets, visual aids, and what I would say. I absolutely loved the experience of forming a creative lesson plan. I ended up accidentally going to sleep for two hours, literally waking up 45 minutes before my interview! I ran through my lesson 3 times in front of the mirror, went in, and just pumped it out on adrenaline. Apparently everyone liked me! Because of this experience, I would recommend getting a good night's sleep as well as preparing a few days in advance, as the TFA interview process is a very long day.

Coming out of the final interview, I felt confident about my lesson and my responses. I felt my confidence and my passion had shone through during the interview. However, I was nervous because none of the pre-meds who I knew had applied and thought would be great for the program, got in. Then the happy news arrived the 1st day of Spring semester: I got in AND I was placed in NYC. I was very ecstatic. I felt accomplished. It was flattering to know that only 10% of people who apply get in. I was also confused. I thought of this as a great opportunity but I was concerned about the stress of doing this. I wanted to do something engaging after graduation but something that was low-key stress as I felt I deserved that after four years of hard work at Columbia. I planned to take the time off to devote a lot of time studying for the MCAT to secure a good score. Now, I felt all my plans were shaken up and I was scared. I did not decide until the very last day to accept the offer and only after I sought advice from the TFA rep, the director of the NYC Corps, as well as from TFA alumnae.. I could not find anyone in my situation who studied for AND took the MCAT during TFA. Taking a third year off is not an option as some people suggested. Even Megan Rigney, when I went to her for advice, immediately threw out the question, "So when are you planning to study for the MCAT?"

I was finally put into contact with someone on the last day of decision-making who opened my eyes, showing me it could all be done. She laid out very specifically how she did TFA while studying for the MCAT. Although it sounded intense, it seemed doable. Coming from Columbia, we are all used to stress, right? At least this would be a different level of stress and something that would have a

tremendous impact. Her words and experiences is what ultimately convinced me to accept the position.

Now, I am in a long process post-acceptance that they do not inform you about until after you're accepted (maybe to not scare you away?). With lots and lots of deadlines, I have had to create a TFA specific resume and fill-out a long survey that would be sent to various schools who would hopefully call me for a phone interview. IF they like me from the phone interview, I will be invited to do a demonstration lesson and then potentially get hired. At the same time, I have to do a background check, certification workshops, and certification tests, all of which take time and money. However, it will be a worthwhile investment when come September I will be a teacher in a NYC school for the next two years earning a teacher's salary of $40,000-$50,000. Prior to teaching, I will be undergoing training institute this summer. My life will be very busy and stressful teaching, earning a Masters in Education (as you have to in NYC in order to teach) while studying for the MCAT but it will hopefully pay off in the end!

For information on Teach for America, please visit: http://www.teachforamerica.org/.

You can also email Columbia University's TFA Recruitment Director Elliot Epstein at Elliot.Epstein@teachforamerica.org.

Gap Time: Post-Grad Research

Name: Victor Thompson, CC'10
Major: Biological Sciences
Extracurricular Activities: Charles Drew Pre-Medical Society; High School Pre-Enrichment Program
Random Fact: I am boring…(that may not be considered "random" depending on your relations with me).

Basic science research became the safe haven from all of my stress. I took advantage of this avenue as a coping mechanism because it graciously "killed two birds with one (great) stone:" I was happy to be removed from my hectic lecture-filled life and placed into a realm that allowed me to cconstantly and progressively better my skill of applying the science knowledge I had learned in the classroom. Still, from my classroom experience, I gained a thirst for investigating what I deem to be the greatest entity, truth.

My initial excitement for bench-top research originated from it seeming to be "cool" after an introduction to lab science during my time in the State Pre-Enrichment Program (SPREP) at the Columbia University Medical Center. The idea of being able to mix both A and B to get C enticed me to the point where it became imperative that I commit myself to basic science research at the start of my very first year of college. Unfortunately, this did not come about. I had my first opportunity to conduct research after the summer of my freshman year as an intern at the University of North Texas Health Science Center. It was during this program that I realized that I loved doing basic science research and found true joy in being able to directly apply what I had learned in my science courses to get "C" (refer to the equation above). As I progressed through my undergraduate career, I began to understand that although it was good to be knowledgeable, it was even better (for both myself and the world) to learn how to apply knowledge to, in some way, better life as mankind knows and understands it to this point. Throughout my second, and lengthiest research experience in Dr. Jeanine D'Armiento's laboratory, under the direct guidance and leadership of Dr. Robert Foronjy, I was able to better appreciate my ability to not only conduct good scientific research, but also to produce intelligent and worthwhile ideas (my hypotheses) that showed promise due to the science behind From this I began to continuously yearn the opportunity to directly use my knowledge in science.

These experiences have led to basic science research becoming one of the main driving forces behind many of my decisions. I plan on committing to academic medicine, where it will be mandatory for me to partake in either basic science and/or translational research. Through academic medicine, I will help shape the future of medicine by engaging in innovative basic science, clinical, and/or translational research, which will allow me to help translate more research findings into improved therapies. And for these reasons, I made it imperative to seek a job after graduation, which would allow me to partake in bench top research. . With my decision to take time off before beginning

medical school, and due to my strong background in scientific research, I found it necessary to find a job as a research technician in a lab. But there was one "twist" to this goal that I found to be integral when taking into consideration not only my short term goals, but also my long term aspirations: I desired to have my own research project. And due to diligence, perseverance, and strong belief in myself, I was able to attain a job as a research technician for a laboratory within the Division of Infectious Diseases and Department of Medicine at the New York University Medical Center, which is lead by Dr. Jennifer Philips, M.D./Ph.D. (P.I.). We are currently doing research on Mycobacterium Tuberculosis, but specifically are working diligently to better understand how the bacterium is able to survive within macrophages for such long periods of time without being eradicated. We are also delving into protein-protein interactions between those of both the bacterium and host cell during infection, which may play an integral role in potentiating/attenuating the overall infection process.

I strongly recommend that those of you who are interested in pursuing a career in medicine but are leaning towards taking time off before heading to medical school, partake in some sort of clinical and/or basic science research experience. I can definitely state that my job experience has been more than intellectually and academically fulfilling, and it cannot go unnoticed that without Ms. Megan Rigney remaining committed to the success of her pre-medical students through various acts such as continuously sending emails through the pre-professional list-serve that advertise various jobs, for example, that I would not be in the position I am in today. I remember literally keeping an eye out for almost every email sent from Ms. Megan Rigney towards the latter part of the fall semester during my senior year at Columbia University, completing many a resume and sending them to a great number of research scientists throughout the winter vacation that followed. I was given the heads-up to begin applying for jobs early by my beloved mentor Brittany Duboise -- advice that I will never forget and will always pass on to those who are willing to work diligently to attain their goals. I must admit, the road was very tough to attain this job, with many interviews to attend whilst managing a heavy academic course load and having to open my Gmail account daily (which was filled with a number of rejection letters). But with diligence and determination, I was able to continue applying until I began receiving emails from doctors who were very much interested in having me work in their laboratories.

Gap Time: NIH Pre-Doctoral Bioethics Fellowship

Name: Ruqayyah Abdul-Karim, CC'10
Major: Anthropology
Extracurricular Activities: Multicultural Recruitment Committee; Undergraduate Recruitment Committee; Black Students Organization; Senior Class Council
Random Fact: I spent six months as a morgue intern performing autopsies at a prominent New York City hospital.

There comes a time in the life of every pre-med student when the question "What am I doing with my life?" goes from innocent inquiry to nagging anxiety. For those who plan on taking time off before applying to medical school, research is a popular option. The Post-Baccalaureate Intramural Research Training Award (IRTA) Program at the National Institutes of Health (NIH) is a great option for students with a background in the basic sciences to work in a research lab. Most fellowships are one to two years long and fellows are granted access to every opportunity that an institution such as NIH has a chance to offer. However, if pipettes and PCRs aren't really your thing, there is a more non-traditional path.

The Department of Bioethics at the NIH Clinical Center runs a two-year pre-doctoral fellowship program. Prior experience in bioethics is not necessary to apply and students from all majors are welcome. The fellowship is a great opportunity for premeds in the humanities and social sciences. However, that said, there has been a growing emphasis placed on training basic science majors who are interested in the ethical uses and applications of the technologies they develop. Since the department is located in the nation's largest clinical research hospital, much of the research focuses on issues surrounding human subjects research, genetics, and health policy. The interdisciplinary makeup of the field of bioethics is reflected in the backgrounds of the faculty members who work there, ranging from physicians and nurses to philosophers and lawyers.

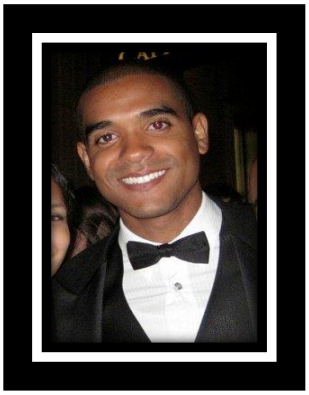
Fellows participate in the activities and the intellectual life of the department and study ethical issues related to the conduct of research, clinical practice, genetics and health policy. For a typical fellow, this research yields multiple publications in premier academic journals. Fellows conduct their research under the guidance of senior faculty, participate in weekly bioethics seminars, case conferences, ethics consultations with researchers at the NIH, IRB deliberations, and clinical rounds and have access to many other educational opportunities. The independent research projects, both conceptual and empirical, are chosen based on your own interests in collaboration with your research mentor. The department is also invested in seeing their fellows succeed professionally, and frequent

lectures from medical school faculty involved in bioethics research provide countless opportunities for networking.

Working in this environment has truly helped me understand the connection between research and the way in which patients' lives can be shaped through both social policy and scientific innovation. I've also felt myself grow both intellectually and professionally in the time that I have been here. The spirit of the department is one of "combative collegiality," which I compare to my time in Contemporary Civilizations in that you're expected to think analytically and defend your opinions.

To learn more about the two-year NIH pre-doctoral fellowship, you can visit https://www.training.nih.gov/programs/postbac_irta or contact Becky Chen (bioethics-inquiries@mail.nih.gov) for more information. To learn more about the NIH IRTA basic science research program, visit their website at: https://www.training.nih.gov/programs/postbac_irta.

Gap Time: An Assortment of Activities



Name: Tomás Díaz, CC'10
Major: Environmental Biology
Extracurricular Activities: Undergraduate Recruitment Committee; Multicultural Recruitment Committee; Cuban and American Student Association; Organization of Latin American Students; CU Undergraduate Scholars Program (Kluge Scholar); Lang Youth Medical Program; Columbia Mentoring Initiative
Random Fact: caught swine flu before it became a big deal.

My decision to take a year off after graduation stems from the timing of my MCAT exam. As an Environmental Biology major, I was unable to adequately prepare for the MCAT during my junior year because of thesis research obligations. Consequently, I took the MCAT during my senior year and submitted my medical school applications during the months immediately following graduation. In addition to applying and interviewing during my gap year, I have been splitting my time between the Committee on Global Thought, the Bergen Volunteer Medical Initiative, and the Lang Youth Medical Program. Holding these three positions allows me to keep busy while pursuing multiple interests.

The Committee on Global Thought is an interdisciplinary group of professors at Columbia University who come together to discuss and put on events related to three main themes: global governance, poverty and inequality, and secularism and diversity. I now work as chief intern and perform tasks related to event coordination and advertising, website and social media management, administrative duties, and course preparation. I have worked with CGT for about four years now and the position provided me a great amount of flexibility during the application cycle. Taking time off to travel for interviews was never an issue, for example.

The Bergen Volunteer Medical Initiative is a free healthcare clinic located in Hackensack, NJ which provides medical treatment to qualifying adults in Bergen County, NJ who lack medical insurance. Local physicians, nurses, and other healthcare practitioners volunteer their services to keep the initiative running. One day each week, I volunteer as a scribe and Spanish language interpreter.

The Lang Youth Medical Program is a six-year science education program for middle school and high school students from Washington Heights and Inwood organized by the Columbia University Medical Center. For this program, I serve as an advisor/mentor to the 12th grade scholars. Each Saturday, my co-teacher and I help facilitate the college application and preparation processes for our students. I began working with Lang during my senior year at Columbia and decided to continue post-graduation as I enjoy the work and would like to incorporate education into my future career as a physician.

A Nontraditional Path

Name: Kwanza Price, Post-Bacc'11
Major: French at Bryan Mawr College
Extracurricular Activities: Charles Drew Pre-medical Society; Education and Research Coordinator at Hospital for Special Surgery; "White Coats, or What Happened to Charles Drew" documentary film.
Random Fact: I have a twin sister.

I did not plan on taking off several years between my undergraduate studies and medical school; it just ended up that way. Partially because I had no idea what I wanted to do with my life going **in**to college, and partially because I lacked the self-confidence needed to believe that I could actually become a doctor.

When I arrived at college at Bryn Mawr, I had very little career direction. No one in my family advised me about careers (I think they were just happy that I was in school) and I did not know enough to ask the right questions of faculty and advisors at Bryn Mawr about career counseling. I only ended up taking classes in the premed curriculum because my friends were doing it and I thought, why not me? I got the answer to that question when I got my grade back for my first semester of general chemistry. It was the last science course I took at Bryn Mawr and thus ended, at least temporarily, my future career as a physician.

I returned home to Washington, DC after college and found a job waiting tables at a Ruby Tuesday's-style restaurant in the suburbs of Maryland. I was also working as a caterer part time on weekends *and* volunteering at the Corporate Council on Africa as a Programs and Policy Intern. I slowly made connections at the Corporate Council and landed a job at Africare, an international humanitarian organization focused on Africa and based in Washington, DC. My first trip to the continent was a six-week voyage to Conakry, Guinea. It was unforgettable and I would need to sit down with you for a long dinner to tell you about it fully.

Soon after my TDY to Guinea, I ended up getting a permanent post in Niger with Africare. Niger was a land-locked country just below the Sahara desert and the second poorest country in the world according to the UNDP index at the time. I lived in my own house (with a pool!) in the capital but traveled throughout the country to monitor activities of the Food Security Initiatives in Niger project funded by USAID. My French came in handy for everyday business-type meetings, but knowing of local languages was far more important in terms of connecting with people (first lesson learned in patient-physician communication!). I learned the Hausa greetings on-the-fly (classes were not

officially available unless you worked for the Peace Corps) and this served me well on trips to village communities or courtesy visits with local administrators.

After two years, I decided to pursue graduate school and got accepted to the Mailman School of Public Health at Columbia University. Before Africare, I had no idea what the field of public health was. My exposure to the profession came from supporting projects in child survival and maternal nutrition. I ended up concentrating in social science research because I was interested in understanding the social determinants of disease.

When I graduated from Mailman, I was not sure what kind of job I wanted. I went on numerous interviews at places like the Department of Health and applied for various research jobs at non-profits. Nothing could really compare to the job I had before completing my masters degree and I was feeling very discouraged. That changed after meeting a recruiter at the Hospital for Special Surgery. I fell in love with the staff and decided, despite feeling somewhat overqualified, to take a part-time research assistant job in the Nursing Department. The project I was working on was related to operations research and how to increase nurse staffing efficiency. A prescription for mathematics! Working in the hospital setting and interacting with patients and staff made me realize that I wanted to become a doctor. It would give me a chance to work directly with people in the community settings I deeply respected and wanted to help heal. But it had been a long time since I had taken any hard science classes. I could barely remember what the difference was between an electron and a proton! And my physics background was even worse (I do not remember one lecture on forces from my high school course). To say the least, I was very intimidated and worried about my ability to be successful in a hard core science curriculum.

Nevertheless, I had a good track record academically and was ultimately accepted to the postbacc program at Columbia. Physics was just as tough as I expected it to be and biology turned out to be harder than organic chemistry. To top it all off, I had to extend a third year due to financial difficulties (I was no longer eligible for loans because I had already borrowed too much!). I started working full time last summer in order to pay for my tuition and rent. Each day is exhausting and I do not know how I am going to accomplish everything, but I plan to apply to medical school this summer.

I have no regrets in taking the time off that I did between college and medical school (wait, I still have to get in!), and I would highly recommend taking time off to anyone else who wants to purse medicine. However, I would advise spending no more than five years out.

So, i**f I could do it all over again with 50-50 hind-sight, here's what I would do with five years between college and medical school:**

1. **Pay off my undergraduate loans** - stay at home for a year or two if you have to, but get rid of as much debt as you can BEFORE you apply to medical school.
2. **Go abroad.** Learn a new language. Experience what it's like to live in a resource poor country. Get some culture and insight about the people who might actually end up as your patient even if you never travel to Africa or Latin America later as a physician.
3. **Work in a clinic** or some type of community health care setting – with a nurse! You are more likely to get patient contact working with an RN compared to working with a doctor.
4. **Learn Microsoft Office** (Excel, Word, and Power Point). Don't neglect these skills! You will need to know this stuff when you become a doctor.
5. **Learn statistics** by doing your own (mentored) research. It does not have to be biomedical, do any research that will allow you to get hands-on experience with interpreting data and applying statistical tests. You also need to learn about casual analysis. Join a scientific journal club!
6. **Visit medical schools early!** Don't wait until you are accepted - start doing research and asking questions **now** so that you will know exactly why you want to apply to a particular medical school. Talk to both students and faculty. Faculty will be good at giving you an overview of the general college offerings; students will tell you the truth! Also, don't forget to visit the financial aid office well before you apply.
7. **Find mentors** – people you look up to who you think you want to emulate. Send them emails on the regular to update them on what you are doing, your struggles and your triumphs.
8. **Finish the premed science curriculum as an undergrad** – it's VERY expensive to do it as a postbacc and you may not even be able to get loans (I learned this the hard way!)
9. **Be non-traditional** – it makes you a more interesting person and applicant. I majored in French because I loved the language and all things French. It has taken me to many wonderful places (Niamey, Cotonou, Ouagadougou, Paris, Cassis, Montreal, etc.) and I would do it all over again!
10. **Have fun!** Get to know yourself, other people (potentially a mate!), and have different experiences. It will make you a better doctor.

The "*MuD-PhuD*" (MD/PHD) Path…

Name: Amanda Lynn Hernandez, CC'08
Major: Neuroscience and Behavior
Extracurricular Activities: CU-AMSA; CU-Wind Ensemble; Relay for Life- Fundraising Coordinator; Research throughout sophomore year to senior year
Random Fact: I am a musician (flautist) and a singer… The truth is music was my first love, and then there was science! ☺

The MD/PhD journey, much like the Medical school journey is one that involves a lot of dedication, hard work, and perseverance. However, in more ways than one, this path is actually quite different from a straight MD-track, especially given its emphasis on research.

When thinking about an MD/PhD, it is important to reflect on your feelings towards research. Although medical school also encompasses academic medicine in many regards, the MD/PhD and the manner in which it is organized specifically prepares you for a career in which you will marry research and medicine with the hopes of advancing science in the future. Because of this goal, most MD/PhD programs are fully funded by the National Institute of Health (NIH) through the Medical Scientist Training Program (MSTP) grant. This MSTP grant pays for your individual tuition in addition to a stipend that can range from $20,000 to $31,000 depending on the cost of living of the respective host institution.

The application process for MD/PhD programs nearly parallels that for medical school, yet with a few key differences. The first and most important difference is research! You must (and I repeat, **must**) have substantial research experience prior to applying to an MD/PhD program. This can be fulfilled by various summers of research and/or working in a laboratory during the school year. Most MD/PhD students have taken at least a year off to pursue solely research, although many seek out 2-year research technician/assistant positions at various institutions, including the NIH. This is not to say, however, that students do not apply straight through from college; this certainly does occur! Additionally, although poster presentations and publications are not mandatory, I would suggest that you work towards at the very least a poster presentation. This demonstrates excellence in research, which is something you undoubtedly want to show on an MD/PhD application. Personally, my publications had not been released in time for me to apply to MD/PhD programs but I was able to list them as "in-progress" and include the poster presentation I gave during my year off.

When it comes to the application itself, you generally follow the same American Medical College Application Service (AMCAS)-oriented track. Ideally you'd like to submit your AMCAS the summer before you intend to matriculate at medical school. The earlier the better! For MD/PhD there are two additional essay requirements for the AMCAS. You will write an essay about why you are pursuing a

joint-degree in addition to a summary of your research experiences and major results. These essays will be submitted along with your essay detailing why you want to attend medical school. After your AMCAS has been submitted the secondary applications will start to roll in. These applications are identical to the ones that those on the MD-track are going to receive and will also have the same questions. However, some institutions will add specific MD/PhD only essay questions to the secondary application. These essays generally mirror one another and will ask to further express your interest in pursuing a graduate academic career in addition to any particular people you would like to work with at that specific institution. As you will see with all your secondaries (individualized applications that each medical school sends once receiving your AMCAS application), a lot of these prompts will be repeated from school to school and you can cautiously (remember to check and make sure you are referencing the right institution) reuse your answers.

Following the submission of your secondary you may or may not get an interview at the MD/PhD program. If you get an interview, remember the following… *You are walking into this interview with one foot in the door and one foot outside the door!* This is a phenomenal thing! Be yourself, speak eloquently, *know your research* (!!!), and smile! These interviews, for the most part, are not intended to intimidate you. The MD/PhD program already likes you; they just want to get to know you better! That being said, you will have a number of interviews spanning over two days. MD/PhD interviews take longer than MD interviews because you will generally interview with, on average, two graduate faculty, two medical school related individuals (faculty, student, etc.), and one or two informal research-related meetings. The graduate school interviews and informal meetings generally occur on the second day of interviews with the first day being reserved for the traditional medical school interview day.

The most difficult part comes after the interviews when you will wait to see if you are accepted to the program. Most programs continue along the traditional admissions route and you will hear in early Spring (March) of their decision. However, some institutions have early or rolling admissions and you will hear of their decision within a week for those with rolling, and in early December for those with early admissions.

With regards to the MD/PhD programs and how they are structured, most utilize the following path – You complete the first two years of medical school alongside the medical school class you entered with. During either the summer before you matriculate or the summer after first year (or in some cases, both) you will do up to 3 or 4 research rotations, generally 6 weeks each, that will give you the exposure necessary to pick the laboratory you will join for your PhD. In most institutions, after completing year 2 of medical school, you will join lab full time. Generally this also includes taking Step 1 of the United States Medical Licensing Exam (USMLE) prior to joining lab, however, this differs from school to school. Many MD/PhD programs have organized ways for you to keep your medical education and patient skills fresh through your research years. In some schools this involves doing a few third year clerkships prior to joining lab so that you can participate in longitudinal clinics throughout your PhD, and some have afternoon and evening programming in the clinic that will allow you to stay on top of the skills you acquired during the first two years of medical school.

Generally speaking, once your PhD is completed you will rejoin the wards and finish up your third/fourth year of medical school prior to applying for residency and moving on to your graduate medical education and post-doctoral career. Although there are a number of variations for how all of these components are combined in a given 7-8 year MD/PhD track, you generally end up with the same result- an MD/PhD!

When it comes to my experience in the MSTP at Yale University, I have had a remarkable experience thus far. I am currently a second year and am preparing to take Step 1 of the USMLE. As a first year I took the general medical school courses offered for first year students in addition to some graduate courses that will pertain to my PhD. I also pursued research throughout the year because I wanted to be in lab. As a second year student, however, I have been primarily focused on the curriculum this year. Second year of medical school is traditionally the more challenging of the pre-clinical years and is the one during which most medical students buckle down and study the hardest. In short, I love Yale, you all should apply!

I could not be happier with the choice I made in pursuing a MD/PhD. The more I learn about the human body and about science, the more I am inspired by what research can accomplish for the future. Given the current academically oriented trajectory of medicine, the MD/PhD is an ideal fusion of two worlds that when joined can truly have an impact not only on patient care but also on the approach towards medicine. I made this choice as an undergraduate student because I truly loved research and could not imagine my life without being "at the bench." Although many MD/PhD students will have different reasons for why they chose a joint-degree path, mine is rooted in a zest for learning and a deep respect for the unknown. This passion has only heightened as I continue along my MD/PhD track and I am beyond excited for what the future will hold.

I wish you all the absolute best of luck in your medical school journey. Should you have any questions please do not hesitate to contact me!

Amanda Lynn Hernandez (amanda.hernandez@yale.edu)
MS II, MSTP Yale University, Class of 2016
(PhD in Neuroscience)
Columbia College, Class of 2008
Neuroscience and Behavior

The Finishing Touches
Medical School Application Process

Know What You are Up Against: The Statistics

Source: Yale SMDEP's Career Development Workshop
By Olatokunbo "Toks" Famakinwa, Medical Student at Yale School of Medicine and Vanderbuilt University School of Medicine Admission Officers

ACCEPTANCE RATES

- Nation's medical schools:
  - 42,000 applicants
  - 30, 000 first time applicants
  - 17,000 accepted

* For the 2010-2011 entering class, U.S. medical schools received 580,304 applications from 42,742 applicants, an average of 14 per applicant. There were also 31,834 first-time applicants—up 2.5 percent from 31,063 in 2009-2010.

- 2007 Applied vs. Accepted:
  - Blacks: 3,133 applied, about 1,000 accepted)
  - Hispanic origin: 3,000 applied, about 1,277 enrolled

AVERAGE GPA

For General Applicants

- Overall: 3.64

For Minorities

- In pre-med courses: 3.30
- In other courses: 3.57
- Overall: 3.43

MCAT STATS (2004)

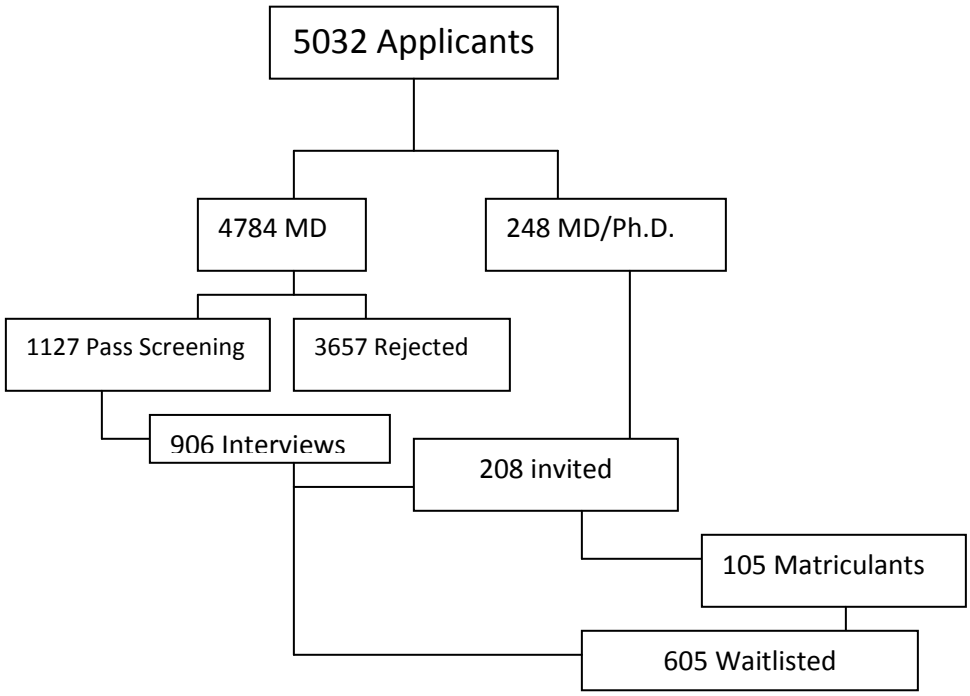
- Average of General Applicants:
  - Verbal Reasoning: 9
  - Physical Sciences: 10
  - Biological Sciences: 10
  - Writing: P

- Average of Minority Applicants:
  - Verbal Reasoning: 7.6
  - Physical Sciences: 7.5
  - Biological Sciences: 8.1
  - Writing: O

INSIDE SCOOP from Vanderbilt University School of Medicine's Visit to Yale SMDEP '08

NOTE: The following is an example of the inner workings of medical school selection. Be mindful it varies by school.

Vanderbilt University School of Medicine's 2008 Applicant Flow



Factors in Medical School Application Process

Name: Antoinette Allen, CC'12
Major: Biology and Sociology Concentrations
Extracurricular Activities: Charles Drew Pre-Medical Society; 117th Annual Varsity Show Artistic Director; McNair Fellow; Darcy Kelley Lab Research Assistant
Random Fact: I like to make vegan baked goods.

There are several factors that go into the medical school application process. Many, if not all are covered in this guidebook, but it is important to synthesize this information in one place, through one person, even if that person happens to be me…

Overall academic record

I will be the first person to tell you that my GPA is subpar compared to an ideal medical school applicant's GPA. It is generally understood that you have to have an excellent GPA to get into medical school. However, at Columbia, it's a little different. One bad habit that I have is to browse Student Doctor Net, especially the 'What are my chances?' forums. A lot of people post their GPAs, to the tune of a 3.8 science GPA, which garner responses such as "oh man that's sooo low." It took me a while to realize that a 3.8 overall is an accomplishment at Columbia, let alone a 3.8 science GPA. If you have a 3.8, more power to you. For the rest of us mortals, focus on doing your best. If your best happens to be over a 3.4 science GPA, you should pat yourself on the back, but if you go for the 4.0, you might drive yourself crazy (I've seen it happen. It's not a good look}. This is not to say to don't aim high, but there is a fundamental difference between State U. and Columbia University in the City of New York. This does not sanction a 2.9 overall GPA at all, but it is important to look at everything in context. Do not freak out if you have one C. If you have to take an unofficial withdrawal, make sure you have a good reason. A general upward trend is always good. Most people hit a difficult time in their academic careers, and as long as you can improve from that point, that would great. Admission committee members, as mentioned several times in this guidebook, like to see upward trends. Also, don't neglect your non-science classes. They're the ones that are most likely to help you overall GPA.

MCAT

The MCAT is important. That goes without saying. You must take it to get into medical school. The MCAT score scale is different from most other standardized tests. The individual sections are scored from 0-15 and the essay is scored on a letter basis, with the highest score being 45T. You also should do well. I haven't taken it yet, but I plan to take it after my junior year even though I am taking a year off. I've decided to take it with such a large time gap between applying and taking the MCAT because I want the opportunity to improve my scores without being rushed for time, or worse: sending scores to schools without knowing the results. As a pre-med, there is so much that is not under your control, but the MCAT, to some extent can be controlled. If that's the only thing that can

be controlled, I want it to be as polished as possible. Be sensible about your MCAT scores. It is just like the SAT: don't apply to Columbia if you have an overall 1000 on the SAT. Similarly, don't apply to Columbia P&S with a 20J on your MCAT. There are several options to study for the MCAT. The two most popular methods are 1) Studying on your own or 2) taking a prep class. Each has its pros and cons. Studying on your own is most definitely cheaper and more flexible. All you have to do it buy books, which can easily total $400+, and study when you have free time. Studying with a review course is significantly more expensive, approximately $1800+ for a 9 week course, and a lot more structure. But it does give you a sense of security if you are extremely weak in certain areas or lack enough self-discipline to effectively study for one the most important standardized test of your educational career. If you couldn't tell from this description, I am of the latter camp. I have several weak spots that would definitely benefit from intense class work. However, life happens when you're making plans, and as such, I have to change my original plan and study on my own. Lesson: it is rather important to be flexible during your premed journey. As much as we were brainwashed to believe, we are actually not more than just numbers. Numbers get you in the door. Personality keeps you there. In sum: the MCAT is not to be trifled with.

Letters of Recommendations/Evaluation letters

Find people EARLY. I approached people but never secured letters. Now I'm attempting to reestablish contact in order to collect letters. Again… not an ideal situation. You want at least two science professors, one liberal arts professor and one letter outside of Columbia University, all of which will be used for the letter from the PAC, or Premedical Application Committee.

Here are some Don'ts to guide your process:

- Don't ask professors cold.
- Don't ask professors who taught you three years ago and you had not continued contact.
- Do not ask for a letter a few days, nay, a few weeks, before the deadline.
- Do not ask a professor of a class you did poorly in, unless you have a special circumstance your professor can speak to. It's better to have three quality letters than five letters of varying quality.

For me, there isn't really more than one premed class that I did reasonably well in, which complicates the second science professor letter, but I'm working on it. It's totally possible to get an A in Physics, right?

Earlier, I mentioned the PAC committee letter that is synthesized in addition to your letters of recommendation. This letter is written after the student completes the PAC pre-applicant process. See the PAC section for more details, but briefly the pre-applicant process includes submission of letters of recommendation, resume, autobiography, supplemental information form, as well as an interview with the PAC. The final letter includes a comprehensive letter of evaluation written by the Premedical Advisory Committee of 3-4 members, which gets included in your general application to medical school.

Extracurricular Activities

Again, start early. Do something every summer. Even if you're not able to do a research internship, volunteer at a hospital. If you need to make money and cannot get a paid internship, work and explain that. In terms of extracurriculars in school, do things you enjoy. I am not a part of the Chandler Society, an on campus chemistry society, because that genuinely does not interest me. I am a part of the Varsity Show, the greatest theatre group on campus; nay the world, and I genuinely enjoy it. There are no stressed out pre-meds and science majors running around. It's just creativity and fun times all around (for the most part), and this break from reality helps me to not burn out on my studies. Also, continually build and edit your resume. Before you know it, you'll have a very diverse resume and will have to pick and choose what to use to put forth the most powerful resume.

Community Service

Personally, I haven't done too much community service at Columbia. The most I have done was through Charles Drew during Columbia Community Outreach, a once a semester university wide day of service. It is important to do community service in order to show your compassion for people in general, and I admit that this is something I definitely dropped the ball on, but it is very important to get involved in your community. There are several opportunities to get involved like Health Leads, Peer Health Exchange, the Double Discovery Center, mentoring students, etc.

Leadership

For some very odd reason, I've been considered a leader in the Columbia campus community. Why? I don't think I'll ever know. In trying to surmise why someone would espouse this theory, the only logical explanation I can come up with is that I take on a lot of responsibility. Although taking such responsibility comes with extra stress, sleepless nights, less time for academics and the occasional freak-out, it does come with some rewards: the development of leadership and interpersonal skills, learning time management and multi-tasking, and sometimes you even win a Kings Crown Award which looks great on a resume! In tracking my trajectory though my main extracurriculars, Charles Drew and Varsity Show, the same pattern emerges. Freshman year, I was just a member of Charles Drew. Sophomore year I was an Organizational Committee Member. This year I am an executive board member and next year I will be the senior advisor. In Varsity Show, I was on the design team and run crew for two years and now I'm the Artistic Director. In short, showing 1) commitment and 2) and upward trend in positions held demonstrates your leadership abilities very well.

Clinical Experience/Displays of Passion for Medicine

Again, something I'm rather deficient in. I've managed to shadow doctors, but only for a day or two. My first summer in college, I sat in on surgical rounds and attended grand rounds at UCLA's Ronald Reagan Medical Center. In addition, I shadowed an HIV/AIDS doctor and a Family Medicine doctor. My second summer, I shadowed a GI Oncologist at Dana-Farber Cancer Center for an afternoon after attending a talk with him as one of the panelists. We bonded as expat New Yorkers in Boston. You would think all the pain and suffering we go through being premed counts as a "display of passion for medicine", but, surprise surprise, it's not. As someone who needs to schedule eating into my iCal,

it's incredibly hard to find time to shadow, much less find someone who would be willing to have me shadow him or her. One of Charles Drew's ongoing projects is to create an organized shadowing program, bringing the opportunities to you lucky, lucky people.

Optional Research

It would make sense that the only section I can talk about confidently would be close to last so that I can feel crappily about my status as a pre-med at Columbia University, but I digress. I've done a lot of research for an undergrad. In high school, I worked on a project in Cancer Prevention and Control at Mount Sinai for a year and a half, and even a little bit into my freshman year summer. I've done research on folk remedies and translation to modern medical practices in immigrant Los Angeles communities. I've assisted in biological anthological research. I've done public health communications research in the context of health literacy in low income, low education greater Boston communities. I've done behavioral research with x. Laevis frogs. I'm a part of the Ronald McNair Fellows program, which encourages minorities to pursue research careers and require a research project. Oddly, I'm not particularly interested in an MD/PhD. I just like to be involved in research. Research is less mandatory for pre-meds than community service or shadowing, but it's different strokes for different folks. I'm a doer, which makes research my preferred extracurricular activity. Also, I will most likely be doing research during my year off, so it's good to hone my skills so that I do not have a steep learning curve, especially when I have less than a year to make a good impression. Research is also important in the sense that most, if not all of modern medicine came about through research. A thorough understanding of the scientific process is invaluable in understanding how and why new advances are made.

Personal Statement

The Personal Statement: Your place to shine. The personal statement decides so much and as such, deserves a lot of time and effort. You will not get a perfect statement within the first few drafts. It evolves with your changing experience and pieces of advice gained. Proofread often. Ask outside opinions. Make sure it answers the question succinctly since you have only 500 words. One piece of valuable advice I received from an admissions officer was to "be moved to tears by the end of the essay." Not all of us have that ability, but this is the level of conviction that needs to be present in your statement. We're not all one-legged acrobats with a hard scramble life and a passion for medicine, nor do we have to be. As long you can clearly and logically articulate your passion for medicine in an interesting way, that's more than half the battle. START EARLY. I'm a world-class procrastinator (writing this article at 3:37AM) but when it comes on to things that determine so much like this essay, I will start months in advance. Proofreading and just coming up with compelling things to say takes a lot more brainpower than you think. I often have moral qualms about whether or not to use Oxford commas and this is the level of detail that I personally think should go into this essay. In sum: don't blow off this essay unless you want medical schools to blow off your application… into the reject pile.

Timeline for Applying to Medical School

Source: Pre-Professional Advising Office

Feb. 15
- PAC Application is due to the Preprofessional Advising Office

Jun. 1
- PAC deadline for Prerofessional Advising Office
- AAMC's primary centralized application opens

June-July
- Complete centralized applications.

July-Sept
- Complete individual school's secondary applications.

Sept-Apr
- Interviews with individual schools.

Oct. 15
- First day that medical schools can accept students.

Oct-Apr
- Typically this is when most medical school decisions are sent out. Some medical schools are rolling admissions while others wait until March to send out all decisions.

May 15
- Medical school applicants should only be matriculated into one medical school. All other acceptances should be released so people on the waitlist can move up.

Columbia PAC Application

Name: Brian Lewis, CC'11
Major: Biochemistry
Extracurricular Activities: Student Researcher; Robert Wood Johnson University Hospital Volunteer; Bible Study; Charles Drew Pre-Medical Society
Random Fact: Throughout high school I was the Youth Chair Representative for the NAACP.

The Columbia PAC (Pre-medical Advisory Committee) Application is a preliminary application that the Premedical Office will use to evaluate your standing as a premedical applicant when you decide to apply to medical school. The PAC application consists of many questions that allow you to evaluate your experience as a premedical student as Columbia. You will be asked why you wish to become a premedical students as well as all the factors that have contributed to your undergraduate career. You will be given the chance to explain all of your extracurricular experiences as well as any situations that may have impacted your performance in any way.

<u>The PAC Application specifically asks for:</u>

1. Activities (make sure you can provide brief descriptions, mention leadership experiences, and note number of hours per week devoted to such activities. Activities range from on campus extraccuriculars, community service, jobs, volunteering, research, summer programs, etc).
2. Autobiography
3. One-page expanded statements on a few of your activities and health related experiences
4. 15 Supplemental Short Answer Questions (150 words or less)

<u>It also requires you to include:</u>

1. Resume
2. Submit 4-6 letters of recommendation (Minimum of letters from 2 science professors, 1 humanities professor, and 1 person outside of Columbia. For letters outside of Columbia, you can get letters from prior research experiences, your job supervisor, an administrator from a pre-med enrichment program, an advisor that can talk on behalf of your leadership. Such letters should be from someone who can speak on your character or work ethic.)
3. A Picture of Yourself
4. PDF of AAMCAS Application once submitted

***After submitting the application, you will be asked to have an interview with someone from the Premed Advisory Committee.

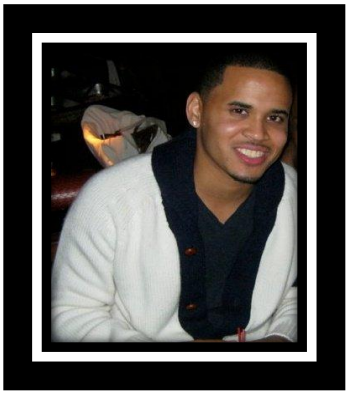
I started and finished the PAC application during the Winter Break of my senior year. In total I spent 4 days planning what I would write, and another two weeks writing and editing it before I finally submitted it. It can be overwhelming if you try to get it done all at once, which is why I recommend tackling one part each day. I enjoyed writing the application; it helped me to solidify my reasons for applying to medical school. It also will prepare you for what will be asked of you in the AAMCAS Primary Application. All of this might seem long and tedious but it pays off: there is a reason why 85% of all Columbia Pre-Meds get accepted into Medical school in comparison to 50% which is the national average!

Although the application is something that can be done in a few a days, it is advised to spend at least a week working on it. The best advice that this writer could give you is to complete the application during the winter recess. Taking advantage of the three week break between the two semesters will give you ample time to consider exactly why you want to become a doctor. It is also advised to plan out everything that you will write before you actually do it. This will ensure that you have properly considered every question and answered appropriately.

The second component to the PAC application is being interviewed on your answers to the many questions in the packet. Be honest with everything that you write, and make sure that you are able to reference what you wrote when the interview time comes.

Once you are engaged in this application process, you will be assigned a specific advisor who will be guiding you every step of the way. This advisor will be your point person during this period and all questions should be directed to him or her. Even though this process seems tedious and multi-tiered with not a lot of transparency, these people know what they are doing and these are most certainly capable hands that you can leave your future in.

Primary and Secondary Application Process



Name: Edwin Kulubya, CC'10
Major: Biology
Extracurricular Activities: Resident/Community Advisor; Kappa Alpha Psi Fraternity Inc.
Random Fact: I was in a modern dance performance in high school and traveled to Scotland to perform the summer before college.

When it comes to writing and sending your applications, earlier is always better. The sooner your application is in, the faster you hear back for interviews and potential acceptances. The process is a lot more relaxing when you know you are in medical school by November.

For the primary application, submitting it before July is a great time to be in the early group. Take your time when crafting your personal statement. Utilize the writing workshop held through the Pre-Professional Advising office to help guide you in the right direction. I really was not able to start my essay until I went to the workshop and went through their brainstorming exercise. As I tailored my statement, I also utilized my peers from different majors to proofread as well as my mentors, who were familiar with the application, process to give me feedback. Overall, the more eyes that look at your statement the better, and soon you will have a product you are proud of and ready to submit.

After you submit your primary application do not get too comfortable. I made that mistake and was bombarded by secondary applications. Some schools will send you this secondary application as soon as you submit the primary. Get those out of the way. Once you are verified by AMCAS (usually takes a month), secondaries will come flying in. Depending on how many schools you applied to, that is how much work you will have to do. It is recommended to not hold on to a secondary for more than two weeks. I held some of mine for a month, which may or may not have affected me. You want to submit quality but you also do not want to rush. This is a tough part of the process. However, once you submit a few it is easy to get on a roll as many questions are similar. Then you can finally sit back and wait for.

Source: ***https://www.aamc.org/services/first/first_factsheets/94390/the_cost_of_applying_to_medical_school.html***
Application Fees : Fees related to your medical school application usually fall into the following three categories:

- **Primary application fee**. Most medical schools use the AAMC's American Medical College Application Service® (AMCAS®) to process applications. Through this service, you are able to submit a single set of application materials and have them sent to the schools you specify. For the 2011 entering class, the fee is $160 for the first school and **$32** for each additional school. (Please be aware that not all schools use AMCAS, and that you may incur a different fee in those instances.)
- **Secondary application fee**. The majority of medical schools require a secondary application. Those fees typically range from $25 to $100.
- **College service fees**. There is usually a small fee for transmittal of your transcript from your college registrar, and occasionally a fee for transmittal of letters of recommendation.

Presenting Yourself: The Interview

Name: Ivan Pena, CC'10
Major: Computer Science Concentration
Extracurricular Activities: Tutor and Residential Teaching Assistant for the Upward Bound program of the Double Discovery Center; volunteer for the New York University Cardiology Department; Society of Hispanic Professional Engineers (SHPE); intern for the Educational Testing Services
Random Fact: I have over 75 family members currently living in New York.

Before I describe my experience, here's some quick advice: finish your personal statement and AMCAS application as soon as possible. Take advantage of the writing tutor that Columbia provides because it truly does help. Go to the personal statement workshop that the pre-professional office organizes, and start thinking about your personal statement as soon as you leave. I remember thinking that it was still a long way to go before I had to submit my AMCAS but after having gone through it I realize that writing the personal statement is a long process that requires a lot of editing and revising. I would recommend that you try to have your personal statement and AMCAS done by late July the latest, just to give yourself a great chance of receiving interviews.

Now my thoughts: the application process is extremely annoying because of how long it is. After sending in your AMCAS application you have to wait a couple of weeks for it to be verified and for the schools to send you their secondary applications. After sending in those applications you have to wait either a couple of weeks or a number of months before receiving interview invitations or rejections. If you receive an interview invitation, you have to wait for the interview and then wait an average of 4-6 weeks for their admissions decision. As you can see, there's a lot of waiting which becomes both frustrating and annoying because there's nothing you can really do about it.

As far as the interviews go, an interview day can be from 5-8 hours, usually consisting of an orientation, lunch, tour, and interviews. The format and amount will vary from school to school. Some will give you a one-on-one interview with a faculty member or admissions committee member, while others will give you two. Some will also offer an optional student interview. If a school does offer a student interview, I would recommend it. Sometimes the student interview is before your faculty interview and it can calm you down and help you get into "interview mode." It also doesn't hurt to have a second person's opinion when they are making the admissions decision. All of my interviews have been relatively stress-free, though it varies from school to school.

Some schools will ask a lot of ethics questions while others will not ask any of them. Try to be prepared for ethics questions and their follow-ups just in case. As an example of an ethics question to think about: "Parents come into your office with their 13 year old mentally challenged daughter who

has just been gang-raped and they want you to give her an abortion. What do you do?" Some ethics questions, like this one, will seem more difficult than others because you just might not have thought of such a scenario. You should know though that there is no right or wrong answer to an ethics question, that's what makes it an ethics question. If you encounter one in your interview, answer honestly, back up your answer and you'll be fine.

As far as preparing for the interview, don't formulate and memorize answers to possible questions. You can practice describing your activities or describing yourself but never write answers down and memorize them because the interviewers notice. What you should review is what it is that you like about the school, whether it be location, facilities, curriculum, or clinical exposure. In every interview that I've had, I've been asked: "Why this school?", and it's always good to say something specific. For example, you don't want to go to an interview in a medical school in NY and answer that question only with "I believe going to a medical school in NY will allow me to encounter a diverse group of patients that I may not be able to encounter elsewhere." Although that is a good start, there are numerous medical schools in NY, as both you and the interviewer know, so this doesn't necessarily show why you are interested specifically in that school. For this reason, really reflect on yourself and the school, why you would like to go there, what sets it apart from other schools, and what you believe sets you apart from other applicants. That is essentially the best way to prepare.

Tips for Nailing the Interview Process

Source: Yale SMDEP's Career Development Workshop

By Olatokunbo "Toks" Famakinwa, Medical Student at Yale School of Medicine

TYPES OF INTERVIEW

- Types of Interview:
    1. *Panel/group:* more than one at same time; ex. 3 interviewers and 3 students; point is to see your interaction w/ other students; see if you are too quiet, a good listener, too loud, etc.
    2. *Blind*: Interviewer never saw your file
    3. *Partial blind*: See part of application (not grades); ask real life, ethical questions; not focused on grades
    4. *Open*: See your file; be prepared to explain your poor performance or unusual features on your application; be confident

- Interviewer acts as your advocate on admission committee

- If you know interviewer beforehand, look on Google for their biography and interests

- Save your interview with your dream school for last so you had enough practice

- Remember, medical schools are very conservative

GROOM & DRESS

- For Women:
    - Wear dark-colored business suit or a dress and blazer—make sure it hits the knee
    - No cleavage showing, nothing tight; no back showing
    - No colored nail polish
    - No dangling or chandelier earrings—keep accessories to a minimum
    - Carry a briefcase or small purse, not both
    - Pull hair back

- For Men:
    - Wear a suit
    - Make sure it is Ironed
    - Wear tie

NOTE: Do not wear strong perfumes/cologne. Do not have any lingering odors such as tobacco.

BEFORE INTERVIEW

- Talk to people who have interviewed you before but don't suck up to student on tour
- Know your application inside and out
- Be updated on current affairs, especially issues in health care. Also be comfortable talking about ethical issues. These things are often asked in interviews.
- Make a list of possible questions and have prepared responses. Practice with mock interviews with people you know.
- The character of each school is very different so know about the school before you go to the interview (ex. Mission statement, grading system, classroom style)
- Have questions for interviewer (ex. Their role in research, opportunities in primary vs. research, community service, teaching modules, class size, do you emphasize research, clinical, community service, etc…)
- Remember no one knows you better than YOU! Be confident
- Know what you can contribute to medicine
- Call Office of Diversity and Multicultural Affairs to get your name out there
- Stay consistent; don't inflate stuff on application and interview
- Find location of medical school and room before interview day so you know where it is located and how long it takes to get there.
- Eat a light breakfast; get a good night's sleep.

INTERVIEW DAY

- Be early (15 minutes-30 minutes).
- Firm handshake.

- Dress business formal but comfortably as often there is lot of walking around on interview day.
- Make eye contact. Remember the interview is a conversation.
- The interview lasts for several hours. It usually includes tour, lunch, and talk with financial aid
- Be nice to everyone, even secretary.
- Be direct and concise in your responses. Enunciate and articulate clearly when you speak.
- Take verbal cues from interviewer on topics.
- Be prepared for "stress interviews".
- It's okay to say "I don't know". Answer questions honestly.
- Do not chew gum or candy. Do not play with your hair, shoes, hands, or pens.
- Never ask for feedback about the interview.
- Be enthusiastic. Be friendly. Be calm. Be confident but not arrogant. Most importantly, be yourself!

REMEMBER: If you have an interview that means the medical school has an interest in you! Take it as an accomplishment. You are already one step closer to your dream.

AFTER INTERVIEW

- E-mail interviewer to express thanks immediately after.
- Length of interview means nothing.
- Learn from mistakes, let it go, and move on (sometimes you think it went terrible but it actually went well).
- Express continued interest by either emailing the admissions office over time or following up with a specific area of interest in the school (i.e. clinical or research programs).
- Make sure you withdraw when you decide not to go if accepted so someone can get spot on waiting list.

Sample Interview Questions

Sources:

1. *Medical Crossroads 2009*, a guidebook for pre-meds created by the Office of Student Affairs and Diversity Programs and Student National Medical Association from the University of Pittsburgh
2. New York College of Podiatric Medicine
3. Presentation at 2010 MAPS Region IX Conference by Ann-Gel Palermo, Associate Director of Operations Center for Multicultural and Community Affairs at Mount Sinai School of Medicine

- Tell me about your family
- What surprises you the most about doing XYZ research or in your current position?
- What do you do to deal with being overwhelmed (i.e. school, work, family)?
- What are you most passionate about in life?
- What difference will you make as a physician?
- What do you believe are the top 3 challenges facing physicians today?
- What do you believe are the top 3 challenges facing our health care system today?
- Is there anything not in your application that you would like to me to share with the Admissions Committee?
- Why do you want to be a physician?
- What do you do in your spare time?
- What other schools have you applied to?
- What do you intend to gain from your medical education?
- What will you do if you don't get into medical school?
- What are your positive qualities and what are your negative qualities? What would you like to improve about yourself?
- How do you think your role as a physician fits in with your role as a member of your community?

- There are 1,000 applicants as easily qualified as you. Why should we admit you instead of the other 999?
- What are your long range plans and goals? What branch of medicine are you interested in?
- How are you a match to our medical school? Why did you choose our specific school?
- How do you view abortion? Would you perform abortion as a doctor? Under what conditions?
- How would you describe the relationship between science and medicine?
- Name something you are most proud of…
- Which family member has influence your life the most so far and why?
- What do you think about the health care system and which way should it go?
- Name a meaningful experience you've had that shaped you to pursue work as a physician?
- Which of your college courses influenced you the most?
- If you couldn't ever be trained to be a physician, what alternative career would you choose?
- What interests do you have outside of medicine and getting into medical school?
- What do you think will be your greatest challenge in completing medical school or learning how to be a doctor?
- How will you pay for medical school?
- If you could do anything different in your education, what would you do?
- What is your first choice? Have you been accepted anywhere?
- What do you feel are the most important qualities in being a good doctor?
- Are you a leader or follower? Why?
- What exposure have you had to the medical profession?
- What are your hobbies?
- Questions about what you think about ethics (i.e. abortion, cloning, euthanasia)
- Be prepared to discuss managed healthcare and changes in the U.S. healthcare system.

Your Turn: Questions to Ask the Interviewer

Sources:

1. *Medical Crossroads 2009*, a guidebook for pre-meds created by the Office of Student Affairs and Diversity Programs and Student National Medical Association from the University of Pittsburgh
2. Presentation at 2010 MAPS Region IX Conference by Ann-Gel Palermo, Associate Director of Operations Center for Multicultural and Community Affairs at Mount Sinai School of Medicine

- With regards to clinical experience, I know that [X school] allows students to interact with patients in their first year of medical school, but how in-depth are these interactions?
- What kind of clinical exposure and experience do students obtain after their first two years?
- What is one strength and one weakness about XYZ school?
- What is the institution's commitment to Diversity and in supporting minority students?
- What is the retention rate for minority students?
- Am I able to do [insert type – global, community-based, clinical] research while in medical school? When is the best time to do it based on the current curriculum?
- Can you describe the relationship this institution has with the local community?
- Are students active or organized in the school (i.e. student organizations)? Ask about whether or not there are student organizations focused on areas that you are interested in.
- What is the community atmosphere?
- What percentage of students pass the National Boards?

When You Get In: Choosing a Medical School!

Name: Mark Attiah, CC'09
Major: Neuroscience and Behavior
Extracurricular Activities: NSOP orientation leader; Black Students Organization; Activities Board at Columbia; Brotherhood of African Heritage; Academic Associates Program at St. Luke's, CCSC elections board; Board of visitors student representative; Lang Youth Advisor, occasional performer on the Open Mic/spoken word circuit
Random Fact: I wasn't able to legally drink until *after* I graduated.

I applied to mostly schools in urban areas because I'm more of a city person (why would you want to live anywhere else when you're young?). Staying in a major city on the east coast seemed like a good deal to me, hence, why I chose University of Pennsylvania School of Medicine.

The interview process for me wasn't as stressful as I imagine some of my counterparts who went straight through. I tried to schedule them to get them all done as early and in as short a window as possible. The hardest part about the interview, I think, isn't the interview itself, but everything leading up to it. The scheduling, the waiting for a response, the money(!), the traveling, the making small talk with people about the whole process, waiting in the waiting room, the uncertainty. All of those are constants that won't go away. But take heart, the interview itself in most places is actually not bad at all. Most interviewers are very conversational and just trying to get a sense of what kind of person you are. This may sound like a joke, but if you talk to some applicants, it's definitely a necessary measure. The spectre of a pressured interview is still there though, and one happened to me. It shocked me because it was my very first one, and everyone told me not to fret, but there it was. As long as you're personable and not stilted, the interview itself should be okay. The hardest part, other than fitting interviews around your schedule, is watching all that money violating the law of conservation of mass and vanishing into the abyss.

Curriculum is pretty important. Penn's curriculum is the best one out there. I may be biased… but I'm also right. The usual 2 years in the classroom is shortened to 1.5 here, so we get into the clinics earlier. This means that we take our step 1 board exam after major clinical rotations (see #3) and we have extra time in fourth year to do electives, do research, travel, get ready for residency, play videogames, eat our last supper, etc. It's been successful enough in its 20+ years here that other schools have followed suit, namely Baylor and Columbia. Hopkins has shortened their preclinicals a bit also.

Penn students score the highest on step 1 nationwide. 'Nuff said.

The fact that Penn med is on the same campus as the rest of the university is a huge plus. This means that we're not isolated from the rest of the community and can take part in events and programs in the larger Penn community. I don't think I could be writing for the campus paper if I went to a school that was separated.

Penn is the oldest medical school.

The administration here is almost a complete 180 from what I experienced at Columbia in terms of bureaucracy. They are very responsive and welcoming, and seem to be invested in students doing well. This is crucial in medical school, which is an emotionally and physically harrowing time for many students.

The MD/PhD program here is the largest and oldest in the country.

…As is the center for Bioethics (Art Caplan, the director, was one of the guys who first proposed using discarded embryos for research and called Bill Frist an idiot on national television!)

Probably most important factor for me was the people. I wanted to be in a class with people I could hang out with outside of class, people who weren't just smart but were normal. In the context of medical school, "normal" is a compliment, trust me. Penn did a great job with putting together these types. We're pretty social—where else can you find med students using school funding to get a keg after each exam? My classmates celebrate each other's birthdays, have a plethora of extracurricular activities, and are some of the most amazing people out there (someone in my class finished the Ironman triathlon, another one developed invisible instruments using an iphone and a wii controller and won first prize in a national contest). My class here has the most ethnically diverse med school class in the country in history, with 25% URMs. I dare you to find one to dispute me. Try it!

So this wasn't so much a "what do you want in a med school" as a "why I like the one I chose", but the two aren't mutually exclusive.

When You Do Not Get In ☹

Source: *Medical Crossroads 2009*, a guidebook for pre-meds created by the Office of Student Affairs and Diversity Programs and Student National Medical Association from the University of Pittsburgh

Everyone should expect to be rejected from at least one medical school. It is just part of the medical school process. However, if you are rejected by all the medical schools you have applied to: DO NOT GIVE UP! There are many people who were in your shoes who are now successful doctors. If this truly your dream, make it happen. As you have already figured out, patience and perseverance are much needed in this long, arduous journey to that MD. It just means it is a time to re-evaluate things so you can take the next step to make yourself a better applicant the next time around.

Questions to consider as you reevaluate things:

1. Do you really, really want to become a doctor?

   Sometimes, we put so much energy into getting into medical school that we forget that medical school is only the very beginning to a more long term goal. Think to yourself: did you really put in your all into getting into medical school? Do you have the passion for medicine?

2. What went wrong?

   Since you did not get into medical school, something had to have gone wrong. You need to figure out whether it was the grades, the MCAT, the interview, etc.

   If you were invited into interviews (which means you probably had acceptable grades and a decent MCAT score), that means something was probably wrong with your interview or your resume. Make sure to fix your interview skills and take a little time to do something noteworthy for your resume. You probably should just apply next year.

   If you did not get invited to at least 2-3 interviews, it probably means there was something wrong with your grades or MCAT score. As a result, you should take some steps to compensate for that.

3. What do I do now?

   There is an array of possibilities that you can do to improve your application including:

   A. Correct deficiencies in grades or MCAT: You can take some extra time to study for the MCAT so you can retake it again. Also, it may be a good idea to participate in a post-baccalaureate program to improve your science GPA.

   B. Attend Graduate School: Graduate school can be a good way to prove that you are capable of handling advanced work, hence becoming an advantage to your application. However, make sure that you convey to the medical schools that you are not going to graduate school just to improve your application. You need to show an actual interest in what you are taking.

      <u>You can attend graduate school in:</u>

      a. Medical Sciences
         - Pharmacology; Physiology; Cell biology; Biochemistry; Biophysics

      b. Basic sciences
         - Chemistry; Physics; Biology

      c. Public Health
         - Epidemiology; Hospital administration; Environmental health

   C. Work in the health field: By working or volunteering in a hospital, community health center, or clinic, this will show your continued passion for medicine as well as give you a better idea if medicine is what you want to pursue. It will also provide you with more knowledge about the health field.

   D. Do research: Medical schools are more and more loving applicants who have engaged in a research project, especially if they have contributed to a published paper. It shows that you have an intellectual curiosity and you know how to think analytically and scientifically.

   E. Do something unrelated to science: Although a strong science background is important, medical schools do also want diverse students with a wide variety of interests. They are looking for interesting people that will contribute through other interests in their medical school class and ultimately as a physician.

Investing in the Future

Financial Planning: 101
Top Ten Financial Do's and Dont's as a College Pre-Med

Name: Kimberley Small, CC'13
Major: Neuroscience & Behavior
Extracurricular Activities: Caribbean Students Association; Church Health Ministry; GED Specialist at Community Impact; Charles Drew Pre-Medical Society
Random Fact: My hobbies are playing the keyboard and sleeping.

As a sophomore Pre-med, I've already found myself saying over and over, "*If I had only known _____ when I began college, I would have been a much better pre-med student today*". From random tips like using the snack machines as a means to get quarters for laundry to really important strategies like attending alumni events for networking opportunities, my list of "Shoulda, Coulda Woulda's" have grown so tremendously that I now have a few good suggestions to pass on to future generations, particularly on the topic of financial planning. So for your convenience, here is a list of my Top Ten Financial Do's and Dont's as a college pre-med.

1. **DO make financial goals**
   Sit yourself down and make weekly, monthly, and yearly, and long-term financial goals, for yourself. When you have a good view of what you want to do for the future (like shop for a winter wardrobe or minimize debt during medical school) it becomes easier to develop a realistic financial budget that works for you. It may seem tedious but it is well worth it. As with all other goals, these too should be small realistic goals that can help with achieving larger goals. For motivation, create a poster with your goals and post it on your wall, and every time you achieve something, you can check it off. Trust me, its great for the self-esteem!

2. **DO** Keep a balanced budget
   Keeping a balanced budget entails keeping track of every dollar you spend, not just knowing how much is in your bank account. You might think this is unnecessary if you have excess cash from scholarships at your disposal but this is a great habit to get into as preparation for those medical school years where money may be tight due to student loans and full-time coursework. Try to keep a note pad on you at all times to jot down each time you make a purchase, give a donation, or receive money. Knowing how much money you have makes it easier to stick to your wise long and short -term financial goals.

3. **DO maintain savings Account**
   Medical school is expensive so if you'd like to have a little wiggle room during your four or more years as a full-time student living on loans, you'll want to start saving sooner than later. Furthermore, starting a savings account is an incredibly important part of planning for the uncertain future. In my sophomore year alone, I've had to pay for a spring break service trip, surgical extraction of all four of my wisdom teeth, and a mid-semester trip home for a funeral. As a student hoping to soon become financially independent of my parents, these expenses could have been off set by a savings account, had I had one. The rule of thumb is to save 18% of everything you receive and only use the savings for large necessary purchases and emergencies. Start now and you'll be glad you did.

4. **DO** Plan for unexpected Expenses
   We're all human and are bound to make financial mistakes now and again. Rather than using this an excuse to make poor financial choices, use this as an opportunity to add some flexibility to your budget. Aside from your savings account, have some unallocated money (I suggest approximately 5-10%) in your budget each week that can compensate for a poor decision. Don't make a habit of using this excess cash every week but keep it for a time when a small, unexpected expense comes up like a night out with friends after a particularly stressful week or a small charitable donation. Another way to store up excess cash is by putting excess coins in a piggy bank or tin can at the end of the day. This really adds up and is also really useful for finding quarters for laundry!

5. **DO** Understand the Ominous Credit Score
   Not everyone supports jumping into the credit card arena as a new college student but obtaining your first credit card is a great way to establish credit in case you need to buy a car, pay a medical bill, or get a private loan. It is an incredibly liberating experience if you are prepared, but if you don't understand your credit score, having a credit card can quickly become your worst nightmare. When getting using credit, keep in mind that your credit score is most affected by your payment history, amount that you owe, and the amount of new credit you apply for. So whether you're a credit card infant with no prior experience or delinquent who needs to repair a damaged score, remember to stay on track by paying bills on time, keeping the percentage you owe on each card to 35% or less, and not applying for too many (more than 3) cards.

6. **DON'T use credit for everyday items**
   If you're using credit for everyday items such as food, clothes, entertainment and household supplies, this is may be an indication that you are living above what your budget can handle. In the past, I've used credit and debit interchangeably, claiming that as long as the money is in

my checking account, I can pay it off at the end of the month, but this gets tricky easily and can lead to allocating funds in my checking account to more than one item (the one paid for with my debit card and the one I paid for with credit my credit card). I suggest leaving the credit cards at home and only pulling them out for important purchases.

7. **DO use Cash instead of Debit or Credit**
We've established the credit card is a no-no for average purchases, but what about debit cards? While it may be more convenient to use debit instead of cash for those everyday purchases, it gets really easy to overspend and overwhelm your budget when you can't actually see the amount of money you've used in a day. I've had to learn the hard way that shopping with a debit card can easily lead to blowing a whole two-week paycheck at H&M. Trust me, it happens. Avoid the guilt by withdrawing the amount of cash you've allocated to your weeks activities—including clothes shopping and movie going—and sticking to that amount no matter what. So when the cash is running low, you can make the appropriate adjustments for your future purchase decisions and stay within your budget.

8. **DO** take advantage of Free Food.
On a college campus, there is always free food somewhere; you just have to know where to look. Many colleges nowadays have Facebook groups that site free food events around campus and beyond. So if you don't have a meal plan or even if you do, take advantage of the opportunity and save your pocket a couple of dollars. Now with that said, still consider your health in making food choices. On days you do pay for food, opt to buy groceries for the week rather than pick up fast food each day. This is not only the healthier way, but also the cheaper way. Since I don't have a meal plan, buying fast food for a full day in New York City can run me at least $15 for two meals a day. That's $105 per week as opposed to the $30 per week I spend at Westside Market. That extra $75 each week will definitely come in handy somewhere else in my budget.

9. **DO l**ook for paid summer internships
Securing a paid summer internship or program is every pre-med's dream. You can usually receive hourly payment or a stipend for the summer for all your hard work and dedication. But if you haven't secured a paid gig, don't be discouraged from considering unpaid internships, particularly ones that really pique your interest, rather look to secure scholarships, alternative funding, or work exemption programs for doing unpaid internships. Colleges understand that surviving the summer without getting paid can be incredibly difficult so many offer work exemption programs that allow you to take advantage of these opportunities without incurring debt to pay for a percentage of tuition or submit work expectations during the following semester.

10. **DON'T stress out over what you cannot control!**
    Finally, If you've already made a few financial mistakes, don't stress. Take a deep breath and make plans to get back on track. Even with efficient financial planning from the beginning, financial emergencies may come up that leave us with no other option than to take out loans or utilize credit that we'd otherwise not want to use but understand that it is all apart of life. Remodel your plans to incorporate any unexpected expenses that your excess cash cannot balance and seek ways to increase your income. As pre-meds, we already have a lot to worry about, (namely: Chemistry, Physics, and looking for internships) so don't let mishaps give you the financial blues. Stay motivated and remain optimistic about your financial goals!

Good Luck and see you in Medical School!

Costs of Attendance for Medical School—

State: (SUNY Downstate Medical Center 2010-2011 Costs)

Source: http://sls.downstate.edu/financial_aid/costs/cost_com.html

All charges shown are subject to change without prior notice. All values are in US dollars.

Expense	Resident (On Campus)	Resident (Off Campus)	Non-Resident (On Campus)	Non-Resident (Off Campus)	Living With Parents
M1–10 Months					
Tuition & Fees	$25,439	$25,439	$49,359	$49,359	$25,439
Books & Supplies ****	$1,500	$1,500	$1,500	$1,500	$1,500
Room & Board *	$14,700	$13,220	$14,700	$13,220	$4,660
Miscellaneous ***	$2,500	$2,500	$2,500	$2,500	$2,500
Computer Allowance	$1,000	$1,000	$1,000	$1,000	$1,000
Health Insurance	$3,432	$3,432	$3,432	$3,432	$3,432
Travel	$1,000	$1,000	$1,000	$1,000	$1,000
Loan Fees	$1,100	$1,100	$1,100	$1,100	$1,100
Total	**$50,671**	**$49,191**	**$74,591**	**$73,111**	**$40,631**
M2–10 Months					
Tuition & Fees	$25,439	$25,439	$49,359	$49,359	$25,439
Books & Supplies *****	$1,500	$1,500	$1,500	$1,500	$1,500
Room & Board *	$14,700	$13,220	$14,700	$13,220	$4,660
Miscellaneous ***	$2,500	$2,500	$2,500	$2,500	$2,500
Health Insurance	$3,432	$3,432	$3,432	$3,432	$3,432
STEP I Costs	$540	$540	$540	$540	$540
Travel	$1,000	$1,000	$1,000	$1,000	$1,000

Expense	Resident (On Campus)	Resident (Off Campus)	Non-Resident (On Campus)	Non-Resident (Off Campus)	Living With Parents
Loan Fees	$1,155	$1,155	$1,155	$1,155	$1,155
Total	**$50,266**	**$48,786**	**$74,186**	**$72,706**	**$40,226**

M3–12 Months

Tuition & Fees	$25,439	$25,439	$49,359	$49,359	$25,439
Books & Supplies	$962	$962	$962	$962	$962
Room & Board *	$17,636	$15,864	$17,636	$15,864	$5,592
Miscellaneous ***	$2,500	$2,500	$2,500	$2,500	$2,500
Health Insurance	$3,432	$3,432	$3,432	$3,432	$3,432
STEP II Costs	$1,726	$1,726	$1,726	$1,726	$1,726
Travel	$1,000	$1,000	$1,000	$1,000	$1,000
Loan Fees	$1,155	$1,155	$1,155	$1,155	$1,155
Total	**$53,850**	**$52,078**	**$77,770**	**$75,998**	**$41,806**

M4–11 Months

Tuition & Fees	$25,439	$25,439	$49,359	$49,359	$25,439
Books & Supplies	$979	$979	$979	$979	$979
Room & Board *	$16,168	$14,542	$16,168	$14,542	$5,126
Miscellaneous ***	$2,500	$2,500	$2,500	$2,500	$2,500
Health Insurance	$3,432	$3,432	$3,432	$3,432	$3,432
Travel	$1,000	$1,000	$1,000	$1,000	$1,000
Graduation Fee	$40	$40	$40	$40	$40
Loan Fees	$1,155	$1,155	$1,155	$1,155	$1,155
Total	**$50,713**	**$49,087**	**$74,633**	**$73,007**	

Costs of Attendance for Medical School—Private: (Columbia P & S 2009-2010 Costs)

Source: http://www.cumc.columbia.edu/dept/ps/admissions/tuition.html

09-10 Single-Resident Student-Estimated Budget

Year 1 (9 Months)		Year 2 (10 Months)	
Tuition	$44,866	**Tuition**	$44,866
Fees	$4,062	**Fees**	$3,967
Other Educational Expenses (including books, supplies, and equipment)	$1,650	**Other Educational Expenses** (including books, supplies, and equipment)	$3,035
Living Expenses (housing, food, laundry, misc.)	$16,482	**Living Expenses**	$18,715
Estimated Total	$67,060	**Estimated Total**	$70,583

Year 3 (12 Months)		Year 4 (10.5 Months)	
Tuition	$44,866	**Tuition**	$44,866
Fees	$3,982	**Fees**	$3,982
Other Educational Expenses (including books, supplies, and equipment)	$3,740	**Other Educational Expenses** (including books, supplies, and equipment)	$1,420
Living Expenses (housing, food, laundry, misc.)	$22,459	**Living Expenses**	$19,649
Estimated Total	$75,047	**Estimated Total**	$69,917

*All figures presented here are projected costs and are subject to change without notice.

Turn Right into Your M.D.

A Roadmap for After College

Source: 2011 SNMA Region IX MAPS Conference "Guide to Success"

IN MEDICAL SCHOOL:

Year 1

- Classroom and basic sciences (i.e. biochemistry, physiology, histology): There is minimal clinical experience during this year at most institutions.

Year 2

- Classroom time but with more clinical lessons (i.e. you learn about cardiology): There is minimal clinical experience
- Take Step 1 USMLE Boards, which is the first in a series of licensing exams. It tests your knowledge of everything from years one and two.

Year 3

- Hospital/Clinical Rotations: This is the year where you have the opportunity to interact with patients in a clinical seting and apply your knowledge from 1st and 2nd years of medical school.

Year 4

- Hospital/Clinical Rotations.
- Take Step 2 of USMLE Board Exams (Written and clinical-physical examination)

POST MEDICAL SCHOOL:

NOTE: After completing 4 years of medical school, students are awarded their medical degree and are officially doctors. However, the doctor is then required to complete a residency program as well as additional testing to become licensed as an M.D.

Residency (3-8 Years)

* Medical Residency is a post-graduate education program for medical students, which allows them to refine their training in a particular medical discipline and practice skills in a real world environment. Traditionally, residents work long hours in sometimes very intense environments. Residency can be thought of as "on the job training." Length of training depends on specialty.

* Take Step 3 of USMLE Board Exams to be licensed as M.D. + Specialty Board Certification Exam (written and oral)

Fellowship (1-3 years)

* A fellowship allows a phyisican to gain additional education and training in a subspecialty after completing residency.

* Take subspecialty certification exam (written and oral).

Practicing Physician

Every 10 years once licensed, a physician must take a recertification exam.

I Wish I Knew

Quick Tidbits for Succeeding as a Pre-Med

We decided to compile a list of tidbits given by numerous pre-meds for those who just want some quick words of wisdom. We hope these are helpful and empowering.

FROM THE GRADUATES:

Ruqayyah Abdul-Karim, CC'10

- Don't be afraid to branch out and explore your own interests. The premed process is much easier to bear when you're doing something you love.

Tomás Díaz, CC'10

- Apply early! You'll get tired of hearing this advice but the timing of your application really is critical. Even if a school admits applicants on a non-rolling basis, interviews are always given out on a rolling basis. There are more open interview spots earlier in the application cycle.
- Ask for help. Trade personal statements with a peer. Create a list of schools with the help of an advisor. Seek advice from current medical students.
- Give special attention to your personal statement. My personal statement was discussed in almost all of my interviews. Your statement will be evaluated for its content, style, grammar, etc. Make sure you're representing yourself in the best possible way.
- Stay with a student host during interviews. You'll get a much better sense of the school and the students who populate it. And, you'll save money.
- Be kind to everyone you meet. Hopefully, you are already living according to this principle. You are representing yourself as well as Columbia when visiting a school. Your interactions with students, staff, faculty, and other applicants may influence their opinions of the Columbia pre-meds they meet in the future. Make a positive impression both for your own sake and for the sake of others.

Nausheen Hakim, CC'10

- If there is any advice I can give, it is that once you are past your interviews it is time to just let it go and stop stressing and thinking about it too much, otherwise you will go nuts! That way if you are in a year off like me you will be able to enjoy it to the fullest.

Maritza Harper, CC'09

- First and the biggest thing is, don't let anyone tell you what you can't do. Oh you don't have the right GPA. You don't have research experience... You won't get in. First, believe in yourself. Don't listen to that. It really breaks my heart. I'm really glad you [Charles Drew] started PUMP. I heard about so many people being turned away from premed classes... Young people really need that support.... Don't give up! At the end of the day, it doesn't matter where you go to school. You are going to be a doctor. It's stressful, but you can't let it get to you. You have to find an outlet. I learned this too late.

Amanda Lynn Hernandez, CC'08

- Never give up. Never let anyone tell you that you cannot live your dream. Remember to focus on your goals and on school. Hard work and perseverance always pays off! Just keep pushing forward! It can only get better!

Edwin Kulubya, CC'10

- Continue to work hard, and do not get discouraged by the challenges you will face. Be confident in knowing that if you want to be a doctor you will be. Utilize the resources that are available to you and you can be successful.

Kwaku Kyere, CC'09

- Undergrads: Try to excel in your sciences. It tells a lot about your ability to handle the medical school curriculum. If possible, try to take biochemistry even if it's not a requirement for the schools you are applying to. It can make your first year much easier. Sometimes it's not always easy to get straight A's in every class. That's OK just don't get a string of C's and D's. Keep pushing and get better. Improvement over time says a lot to the admission committees even if one started of not so hot. The key is to show an upward trend.

- Applicants: Get everything in on time. Take our MCATs early enough to allow for a re-take if necessary. It's also good to apply early because some schools give out interviews as they get completed applications. Technically, admission committees get stingy with their interview slots as they get more applications and highly qualified applicants as the deadline draws near. Once you get the interview, you know the school likes you. Honestly at that point, it's up to you to screw up. Put your best foot forward. Know your application. Relax and be confident but not cocky. Med schools hate cocky applicants even if their credentials are through the roof. Humility will take you far in this process.

Chamika Miles, CC'10

- When people say that being pre-med is hard, they're not always just trying to scare you: being pre-med *is* hard. But this is not always a bad thing. If becoming a physician is something that you're truly committed to, this should just motivate you to work harder. Your long hours of studying for that Bio exam, are only going to translate to long hours spent on the floors as a resident, and finally, long hours spent caring for patients. All this hard work is only preparing us for the task of caring for human lives, which is an amazing job, but also one of the most difficult. As a pre-med, you will develop tough skin. People will doubt you, and you might even doubt yourself, which is fine, because it will make you evaluate who you are and why you have chosen this path. Just don't let it throw you off course if medicine is something you really want.
- The best piece of advice I can think to give is to believe in yourself, and don't be scared away by the numbers (GPA, MCATs, etc). Those stats are there to scare the faint of heart, so don't let them scare you. At the end of the day, med schools are really looking for people who are passionate about and committed to this life; so let your true self show through in your application, and make it clear to them that you deserve a spot at whichever school because you care about people and really want to be a doctor. Don't ever sell yourself short and not apply to the school of your dreams because you think your numbers are too low. We are all so much more than just numbers!

Ivan Pena, CC'10

- Advice for Undergrads: Aside from attempting to do well in your classes, you have to show medical schools your commitment to medicine with your extracurricular activities. They don't care if you have a 4.0 if you didn't do anything besides schoolwork. If you're not interested in research (or have not find any research programs to participate), don't panic. Numerous students are accepted into medical school without having done research. Another option is simply to find volunteer or other community service opportunities. They don't have to be medically related but make sure the activity is something you are truly interested in. The key is to show medical schools that you are more than just an A student and it gives you things to talk about during your interview.

- To those applying: Hang in there, you'll be fine. Don't get nervous if the first thing you get is a rejection. The process is very long, and each school makes their admissions decisions differently. If and when you do receive an invitation to interview, make sure you are well prepared because it really is the only aspect of your application that you can have an effect on at this point. I'm sure you are all well qualified and you'll realize this at your interviews. You'll encounter other students that you may think have done a lot more than you or seem to be better candidates than you but you have to realize that you are also there for a reason.

Those other students may be thinking the same about you. The school obviously liked what they saw in your application so try not to be nervous. Think of it as an opportunity for you to elaborate on certain aspects of your application as well as get a first-hand look at the school.

Victor Thompson, CC'10

- Stay focused, stay in the [Charles Drew] Society, and everything will be just fine!

FROM THE SENIORS (Class of 2011):

Tanisha Daniel, CC'11

- Find a support group—find other pre-med buddies to study with, to support each other throughout the years.
- Find mentors—it is always beneficial to hear from someone who likes you talk about their journey and how they made it; we can all use a little inspiration.
- Actively learn how to deal with rejection or negative feedback—it will serve you in the long run and do not let anyone tell you what you cannot do when in your heart you know you can handle it.
- Shadow as much as possible—being in the thick of it helps me stay connected to the goal and dream.
- Have fun! Make time to enjoy your time here at Columbia—it will make you a happier person and will keep your stamina to do work up when you have a more positive attitude overall.

Princess Francois, CC'11

- Truly remember that although pre-med is part of your identity, it does not need to consume you entirely. Remember to incorporate "self care" or "me time" by taking breaks, sleeping, enjoying life with friends, etc. You will truly be happier and more motivated to do work.
- Do not lose sight of your health. Yes, you will have many times of little sleep but do not compound that by eating unhealthy food. Buy food that is healthier or easy to cook. You can cook in the beginning of the week for the whole week to save time. Snack on healthy foods such as fruit and granola bars. It really makes a big difference for your well being. You will feel healthier instead of sluggish from both little sleep and an unhealthy diet.
- Remember: don't expect to get 7-8 hours of sleep per night. There will be many times you need to do all-nighters or get as little as 3-4 hours of sleep. It's a matter of prioritizing getting better grades, doing extracurriculars & enjoying life vs. sleep. Sometimes to do it all, you got to let something go: sleep.
- Grades truly are not everything. I cannot emphasize that enough. Aim for the best. If you do not get the grades you want, it is not end of world and it doesn't define you. Med schools

really want the well-rounded person and are willing to sacrifice the 3.8 GPA average for a person who is actually interesting, involved in many activities, etc.

- You MUST have a plan! You need to know early on how you plan to fulfill the Core, your major, and the pre-med requirement. By doing that, you might be able to actually carve out some space to take classes you really want, do an odd major or even study abroad. Unfortunately, most pre-meds know right when entering freshman year they will be pre-med. It is feasible but can be difficult starting pre-med your sophomore year.
- "Breathe, stretch, shake, let it go."

Daniela Guisado, SEAS'11

- Try and find the most effective way of studying early on. Working through problem sets is usually more effective than rote memorization.
- Take the MCAT early so you have time to re-take it if you need to.
- Don't get discouraged! If you really are dedicated to pursuing a career in medicine, you will find a way to successfully get there. You can't let anyone or anything discourage you from pursuing that path.

Jasmine Jackson, SEAS'11

- Do not let Columbia get you down. It can be difficult sometimes but just keep fighting.
- It is never too late for improvement. I never thought I would get an A+ in Columbia, but I received 3 A+'s in the fall of my senior year.
- Make sure to make the best of your summers. I spent one semester attending the SURF program at Boston University because I did not have time to do research during the semester. Also, another good program is the University of Cincinnati Summer Premedical Enrichment Program. It really gives you the tools to do well on the MCAT and to be an exceptional candidate to medical school.
- Ask other people for advice and help when you need it. If someone has been through it already, why should you make the same mistakes as them?

Connie Qiu, SEAS'11

- Find out why you want to become a physician. Having a motivation will drive you to reach your end goal. It also ensures that you are in it for the right reasons.
- No matter how tough things seem, don't give up!
- Have faith in yourself.
- Find a group of fellow pre-meds and support each other.

Jenny Ruiz, SEAS'11

- Find a mentor who is a doctor early on. They can be a valuable resource!
- Research summer opportunities during winter break and apply early! There are so many great programs out there, find one that interests you!
- Study with a group of friends, especially for Orgo and Bio, and teach each other.

Calvin Nash, Post-Bacc'11

- Make sure medicine is what you really want to do. "Really" means that you can't possibly see yourself doing anything else!
- Tell other people about your dreams because it helps to make them become reality (it really works, trust me)
- Become immersed in medicine i.e. read journals, articles, attend lectures.
- MCAT, MCAT, MCAT! The earlier you train yourself to think in the MCAT way of thinking, the easier it will be for you!

FROM THE JUNIORS (Class of 2012):

Antoinette Allen, CC'12

- Take advantage of tutoring services. The ASP office, part of the CSA, has them for FREE. The going rate for tutors outside this service is approx $35-50 an hour.
- Find something not populated by pre-meds that you enjoy. I enjoy working on the Varsity Show even though it's very stressful. But it's stressful in an artistic way and not an 'academics that will define the rest of my' life way.
- Write lots of thank you notes to several people: a professor's class you enjoyed, a department you did research in, a favorite pre-med class, people who write you letters of recommendation, people who give talks, etc.

Brandon Christophe, CC'12

- Get involved in something that has nothing to do with being a premed (for me it's SigEp). It will really help you relax and give you some peace of mind when sh*t hits the fan aka midterms/finals.

Rosten Rocha, GS'12

- If it were easy, everyone would do it.
- Premeds are hardcore. And Cool.
- Things could always be worse.
- You can always go further than you think. You just need to find that something that motivates you to.
- Always keep up with the material. Cramming for exams is usually a bad idea.
- Reserve time a to study, a time to hangout, and keep procrastination to a minimum. Doing all of them at the same time doesn't work.
- Work hard, play hard. Own up to your shortcomings - no excuses.

ChiChi Okunji, CC'12

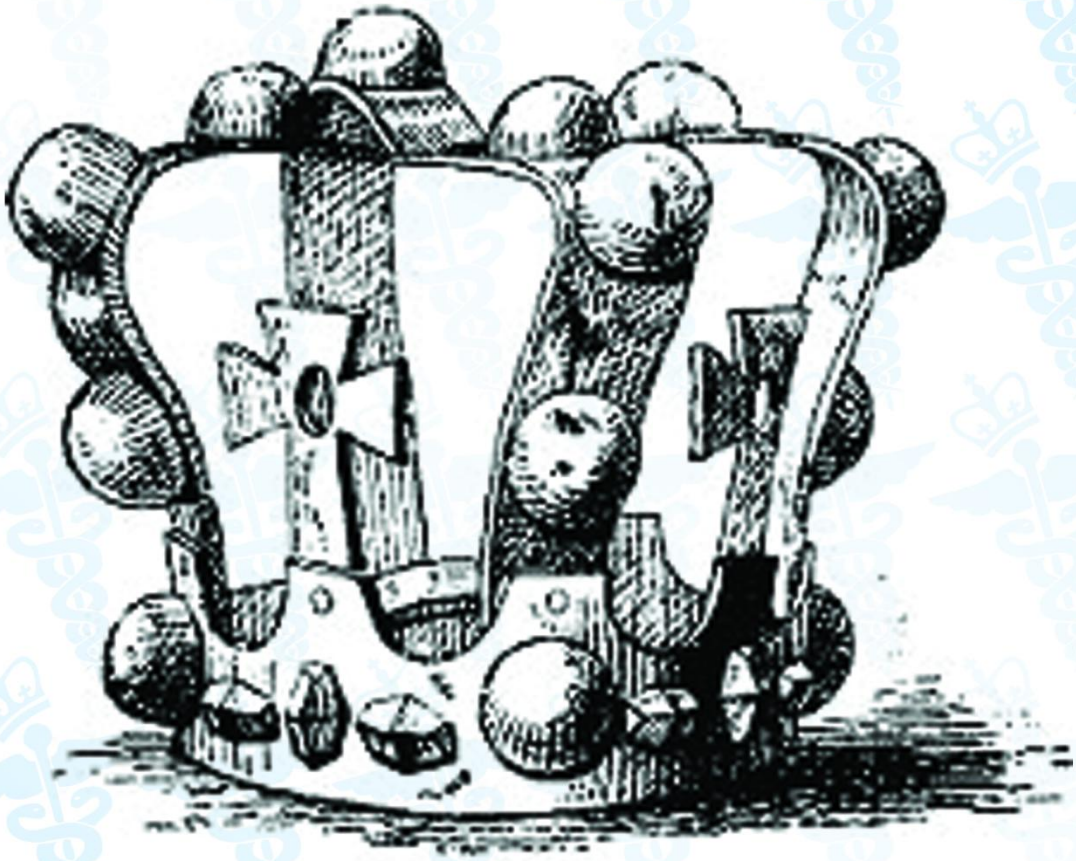
- Get a mentor (upperclass) who knows the ropes and taken some of your classes, go to office hours and become best friends with TA if you need help in a class.

FROM THE SOPHMORES (Class of 2013):

Lindsey Hastings-Spaine, CC'13

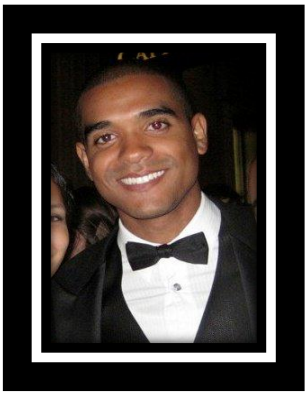
- *Keep your eye on the Prize* (yes…very cliché, but very accurate). It is incredibly easy to lose sight of your ultimate goal when you are in the depths of taking premed classes at Columbia. You may feel that everything is working against you -- all-nighters are considered the 'norm' of how you cope. You will be up to your ears in problem sets and your GPA might be sadly below the average. When you find yourself in this predicament, have an honest sit-down talk with yourself and ask "Is this worth it?" If you are serious about becoming a doctor, the answer will always be yes.
- *Don't allow others to dictate your future*. Make sure every decision that you make about your future plans is your own. Ultimately, you are the one who has to live with your decisions… not your advising dean or your professors.

The Ones Who Made It
Successful Columbians



Tomás Díaz,

University of Pennsylvania School of Medicine, Class of 2015



Name: Tomás Díaz, CC'10
Major: Environmental Biology
Extracurricular Activities: Undergraduate Recruitment Committee; Multicultural Recruitment Committee; Cuban and American Student Association; Organization of Latin American Students; CU Undergraduate Scholars Program (Kluge Scholar); Lang Youth Medical Program; Columbia Mentoring Initiative
Random Fact: I caught swine flu before it became a big deal.

- **How was your pre-med experience at Columbia?**
  - My pre-med experience was rigorous without being overly stressful. I found a few peers with whom I got along with especially well and we helped each other through all of our pre-med courses. My interests are not limited to medicine so, during the academic year, I chose to participate in activities related to my other interests. I then spent my summers gaining the traditional clinical/research experiences needed to apply to medical school.

- **Did you go straight through or take time off? If you took time off, what did you do? What made you decide to go straight through or take time off?**
  - I am taking a one-year gap between undergrad and medical school. I have been splitting my time between the Committee on Global Thought, the Bergen Volunteer Medical Initiative, and the Lang Youth Medical Program. Holding these three positions allows me to keep busy while pursuing multiple interests.

- **Describe your experience with the application process and interviewing.**
  - I have had a very smooth application experience thus far. I knew very little about this process before beginning it. There are no healthcare professionals in my family, so I put forth extra effort to meet regularly with my pre-med advisor and ask questions of friends who had applied to medical school in previous years. I found it useful to develop a plan before beginning the process so that my application would clearly express my unique reasons for pursuing medicine and my personal interests and goals in healthcare. What are these unique reasons? What are my personal goals? Answering these questions (as well as some others) helped me create a focused application with a clear theme. In interviews, I expanded upon the information in my application and shared personal anecdotes while linking everything back to that main theme.

- **How many medical schools did you apply to? Interview with? Get accepted into? Where?**
  - Rejected: Johns Hopkins, UCLA, UCSF
    Interviewed, Rejected: Harvard
  - Invited to Interview, Declined Invitation: Stanford
    Interviewed, Waitlisted: Cornell, Duke, Yale
  - Interviewed, Accepted: Penn, Columbia, Mount Sinai, Miami, USC, NYU, NJ Medical School, Robert Wood Johnson Medical School, Tufts

- **Why did you choose the medical school that you did?**
  - I finally settled on Penn Med largely because of the curriculum, the opportunities, and the people. Penn Med has a somewhat unique curriculum in which students enter clerkships after 1.5 years (rather than the traditional 2 years). This frees up time after rotations for more electives. As I am unsure of which specialty I would like to pursue, I like that Penn offers that extra time just in case you haven't figured it all out. With that, the clinical training is highly regarded in a number of specialties providing great overall training and the facilities are really impressive. In terms of opportunities, Penn offers tons of service and research experiences within Philadelphia as well as overseas including a number of community initiatives which particularly interest me. Yet, I think the gut feeling I got from the people I met at Penn was what ultimately convinced me to choose the school. I felt comfortable with the students, professors, and administrators. And, I really just got a good overall vibe from the school and community during my visit.

Nasheen Hakim,

To Be Decided, Class of 2015

Name: Nausheen Hakim, CC'10
Major: Anthropology
Extracurricular Activities: work full time for South Asian Youth Action (SAYA!); work for Lang Youth Medical Program; occasionally dance with Columbia Raas
Random Fact: I'm a proud Iowan! ☺

- **How was your pre-med experience at Columbia?**
  - I would say it was more stressful than not. But it was helpful to have a lot of friends who were also pre-med. It made the experience less miserable. I enjoyed being able to take classes with my friends. This made me feel like I had alot of support throughout the process.

- **Did you go straight through or take time off? If you took time off, what did you do? What made you decide to go straight through or take time off?**
  - I'm currently in my gap-year and I work fulltime for South Asian Youth Action, a non-profit youth organization in Queens. I knew I wanted a chance to work closely with youth before attending medical school and this seemed like the perfect opportunity. Also, the year off from school made the application process much easier to handle.

- **Describe your experience with the application process and interviewing.**
  - The application process is long and drawn out but it isn't that bad. In the beginning, you have to be very on top of your personal statement and then your secondaries. After that, it is just about waiting and preparing for interviews. My interviews were all pretty similar. I was never asked any questions I considered to be unfair. You just need to be comfortable talking about yourself in depth. But don't be annoying! I'd say interviewing is the best part of the process because you just need to be honest and straightforward. Plus, you get to travel and meet a lot of other applicants.

- **How many medical schools did you apply to? Interview with? Get accepted into? Where?**
  - I applied to 15, interviewed at 4, accepted to 2, and waitlisted at 2.

- **Why did you choose the med school that you did?**
  - Undecided

Edwin Kulubya,

Keck School of Medicine of University of Southern California, Class of 2015

Name: Edwin Kulubya, CC'10
Major: Biology
Extracurricular Activities: Resident/Community Advisor; Kappa Alpha Psi Fraternity Inc.
Random Fact: I was in a modern dance performance in high school and traveled to Scotland to perform the summer before college.

- **How was your pre-med experience at Columbia?**
  - The pre-med experience at Columbia was tough, but I did not let it define my Columbia experience. I was highly involved in both campus life and enjoying my NYC experience.

- **Did you go straight through or take time off? If you took time off, what did you do? What made you decide to go straight through or take time off?**
  - I decided to take time off right before my senior year. I had taken the MCAT and done well, but felt I did not want to rush my application. Right now I am working as a clinical researcher at Mount Sinai School of Medicine. I truly believe the year off helped strengthen my application further. It is a decision I do not regret. I know once I am in medical school my life, to a certain extent, will be dictated. During this year I had the opportunity to experience things I may not have the opportunity to do in a while. I was accepted to U Miami in November with a partial scholarship and have the rest of the year to enjoy life in the city with my good friends.

- **Describe your experience with the application process and interviewing.**
  - Overall, I would say the process was demanding -- from the MCAT through the last secondary application. I wanted to put the best application forward and this took a lot of time and energy. After secondaries were complete, I really did not feel any stress or anxiety. Everything was out of my hands. I enjoyed traveling and interviewing. It also helped that I applied early and was accepted to my first school in November. So I was less stressed.

- **How many medical schools did you apply to? Interview with? Get accepted into? Where?**
    - I applied to about 20 schools and interviewed at 7. I was accepted at 2 (Miami and USC), and wait-listed at the rest (Emory, GW, Einstein, Tufts, Sinai).

- **Why did you choose the med school that you did?**
    - I chose USC because I received a full tuition scholarship. I am also excited about going back home to Los Angeles. I want to practice in LA, and the hands-on clinical experience at Keck is renowned. The P/F curriculum and structured USMLE prep were also positives.

Chamika Miles,
To Be Decided, Class of 2015

Name: Chamika Miles, CC'10
Major: Evolutionary Biology of the Human Species
Extracurricular Activities: Midnight Runs, scene directed for KSA fashion show for 3 years; interned at Amsale Design group; Academic Associates program; Global Brigades; CU AMSA's Women in Medicine Mentoring program; conducted clinical research in the HPV Vaccination project
Random Fact: I was a semi-finalist in my town's playwright competition in high school.

- **How was your pre-med experience at Columbia?**
  - I would not describe my pre-med experience at Columbia as chill, but it got more comfortable the more that I got used to it. It was not until after the first year or so that I really learned the study strategies that worked best for me; and although that definitely made life a bit easier, I would be lying if I said that I didn't still get stressed out before exams. I would say that I got used to dealing with the stress of being pre-med, which made the whole situation better. The one thing that got me through those stressful times was having a good group of pre-med friends who I could study with. Group studying might not be for everyone, but in my opinion it was invaluable. Just having the support of others who know exactly what it is you are going through, really helped me. My friends and I would help each other with topics that one of us didn't understand, and quiz each other on topics we thought we understood, which helped highlight areas where we needed to spend more time. The added bonus of the study group is that you will always have people to stay up with and make Ham Del runs when you're still studying Orgo at 3 AM.

- **Why did you take time off? What are you doing during your gap year?**
  - I chose to take a year off in between college and medical school. I made this decision because I wanted to take a break before completely devoting myself to a career in medicine. So far, I am glad I chose to take the time off to apply, because I have taken time to grow and develop as more than a "student". Taking time off allowed me to concentrate on applications in a way that I know I wouldn't have been able to if I were in school. Right now, I am working as a Clinical Information Manager (Medical Scribe) for Emergency Medical Associates at Westchester County, NY.

- **Describe your experience with the application process and interviewing.**
    - The application process is actually a lot more laid back than I expected – really the hardest parts are taking the MCAT and writing the personal statement. After you submit your primary application (advice: do this as early as possible), you can expect secondaries to start coming in almost immediately. Secondaries, while they each appear to be asking different questions, are all pretty similar and can usually be done with a lot of help from your PAC application. Some of them are quite straight forward and basically just ask you for your credit card number, while others require more detailed responses. Then, after the secondaries are sent in, you wait to be invited for an interview. In my experience, schools can invite you to interview from October, all the way up into February. For me, the waiting period between the secondaries and the interview, and then the acceptance, are by far the most frustrating parts of this whole process.

- **How many medical schools did you apply to? Interview with? Get accepted into? Where?**
    - I applied to 14 schools and so far have 6 interviews – I have interviewed at Stony Brook, Einstein, Columbia P&S, Boston University, SUNY Upstate and SUNY Downstate.

- **Why did you choose the med school that you did? What do you like most? What do you like least?**
    - To Be Decided.

Ivan Pena,
To Be Decided, Class of 2015

Name: Ivan Pena, CC'10
Major: Computer Science Concentration
Extracurricular Activities: Tutor and Residential Teaching Assistant for the Upward Bound program of the Double Discovery Center; volunteer for the New York University Cardiology Department; Society of Hispanic Professional Engineers (SHPE); intern for the Educational Testing Services
Random Fact: I have over 75 family members currently living in New York.

- **How was your pre-med experience at Columbia?**
  - A mixture of both stressed and chill at times. Science courses at Columbia can be overwhelming, especially mixed in with the numerous other classes that you may be taking to fulfill requirements for a major. My experience was mostly stressful because my computer science and math courses required a lot of time. During my years at Columbia, I was an 8th grade tutor for a year. I also worked as a tutor for the Upward Bound program of the Double Discovery Center for two years, in addition to spending two summers there working as a Residential Teaching Assistant. During my time here, I volunteered in the New York University Cardiology Department helping with data input and as a translator for numerous Heart Health Fairs. I was also a member of SHPE (Society of Hispanic Professional Engineers) and was an intern for the Educational Testing Services for two summers.

- **Did you go straight through or take time off? If you took time off, what did you do? What made you decide to go straight through or take time off?**
  - I took a year off because I wanted to retake my MCAT, so I couldn't begin applying directly after Junior year. I wanted to go straight into medical school but after experiencing what a year off is like, I've enjoyed it. I believe I've been able to make my application stronger by being committed to the Educational Testing Services as well as working for the Lang Youth Medical Program. I am an Outside Item Writer for the Educational Testing Services, writing lectures that are incorporated into the TOEFL exam. I am also an advisor for the Lang Youth Medical Program, which teaches 7th graders about the various organ systems in the human body. For me, it's been nice to take a break from school especially before entering such a demanding field like medicine.

- **Describe your experience with the application process and interviewing.**
    - The application process is extremely annoying because of how long it is. There is a lot of waiting which becomes both frustrating and annoying because there's nothing you can really do about it. All of my interviews have been relatively stress-free though it varies from school to school. Some schools will ask a lot of ethics questions while others will not ask any of them.

- **How many medical schools did you apply to? Interview with? Get accepted into? Where?**
    - Applied to 25 medical schools, out of the ones that have gotten back to me I've received 5 interviews; I've been accepted to New Jersey Medical School and waitlisted at Albany Medical College. I have been rejected by Mount Sinai and SUNY Downstate. I am still waiting for the decision from Albert Einstein.

- **Why did you choose the med school that you did? What do you like most? What do you like least?**
    - To Be Decided.

Joanna Wang,

Yale School of Medicine, Class of 2015

Name: Joanna Wang, CC'11
Major: Neuroscience and Behavior
Extracurricular Activities: Columbia Spectator; research in the Psychology Department; volunteering at St. Luke's
Random Fact: My favorite animal is the red panda!

- **How was your pre-med experience at Columbia?**
  - Quite relaxed in terms of coursework because I was a neuroscience major, so many pre-med requirements were also requirements for my major. However, the overall Columbia experience has been very stressful. Nevertheless, I worked at the library, committed myself to doing research, worked for the Spectator, worked as a TA, and volunteered at a hospital-- schools really want to see you get involved in things you're interested in and want to know what you commit yourself to. I think by the end of junior year, I had a direction and the different pieces of my application fit together-- I'm interested in academic medicine, so I think they could see this reflected in my application based on all my experiences. You do not have to know exactly what you want to do, but I felt like having a cohesive application really helped me.

- **Did you go straight through or take time off? If you took time off, what did you do? What made you decide to go straight through or take time off?**
  - I went straight through because I felt ready to tackle the application process. Most people I met on the interview trail seemed to be working, so I do think it's common to take time off. It helps you get more experience. I met some applicants who were doing very interesting things—working abroad, TFA, MPH programs, etc. Do whatever feels right. You definitely don't want to jump into this process unprepared and not ready.

- **Describe your experience with the application process and interviewing.**
  - It can seem like a daunting process, but the actual application process goes by quite quickly and traveling to schools for interviews can be quite fun (interviews are usually quite informal and you get a free lunch!). I found it really useful to get all my applications out of the way during summer (if you're applying before your senior year, having to fill out applications during the fall semester can be draining). I also used all the resources Columbia offered to prep-- I met with my pre-health advisor. I went to

the CCE for a mock interview. I went to information sessions. There's really a lot offered here in terms of getting you ready for applying. I also tried to be very organized throughout the application process. For example, I kept a spreadsheet of when I turned in secondaries, when I was complete, etc. It sounds a bit crazy, but with 15+ schools, organization was very important in maintaining my sanity.

- At the end of the process, I can really say that I enjoyed interviewing at schools and the memory of filling out 15+ applications hasn't taken away from that. I felt it was important to return secondaries within 2 weeks of when I received them. I just tried not to procrastinate and buckle down. It felt great when interviews started rolling in (as I'm sure they will for readers) and I prepped by going to the CCE for a mock interview. I read up on health care reform, ethical issues, and practiced interviewing. It helped to calm my nerves during the first few interviews and made me feel confident.. Traveling was very tiring and took quite a bit of money, but I tried to stay with friends or students as much as I could. Being in New York makes traveling a lot easier. During interviews, I found it easy to relax because the students and admissions staff was really welcoming and fun to talk to.

- **How many medical schools did you apply to? Interview with? Get accepted into? Where?**
  - Applied to 17 schools, interviewed at 16
  - Accepted at 11: NYU, Mt. Sinai, Wash U, Yale, Stanford, Northwestern, U Chicago, Duke, Tufts, VCU, UVA
  - Waitlisted at 4: Columbia, Weill Cornell, Johns Hopkins, U Penn
  - Rejected at 2: Georgetown, Harvard

- **Why did you choose the med school that you did?**
  - I'm leaning towards Yale-- small class size, grading system (no ranking, semi-optional anonymous tests), fantastic match lists, great mentorship opportunities, the option of doing a 5th year at no cost, structured global health programs, a faculty/student relationship that seems more like senior colleagues/junior colleagues, and beautiful facilities. I'm also a fan of Northeast weather (snow!). I am considering Stanford as well because it has flexible curricula, has strong research, part of a larger university campus, has small class sizes, great mentorship programs and supportive faculty, and you can take a year off to do research for free.

Mark Attiah,

MS I, University of Pennsylvania School of Medicine, Class of 2014

Name: Mark Attiah, CC'09
Major: Neuroscience and Behavior
Extracurricular Activities at CU: NSOP orientation leader; Black Students Organization; Activities Board at Columbia; Brotherhood of African Heritage; Academic Associates Program at St. Luke's, CCSC elections board; Board of Visitors student representative; Lang Youth Advisor, occasional performer on the Open Mic/spoken word circuit
Extracurricular Activities at Medical School: Columnist for the Daily Pennsylvanian; Neurosurgical Research; Bioethics courses
Random Fact: I wasn't able to legally drink until *after* I graduated.

- **How was your pre-med experience at Columbia?**
  - The pre-med experience for me was probably like yours if you're reading this; a struggle. It's no secret. I was involved in a lot of other activities during my time in school: NSOP orientation leader, BSO secretary and vice president, ABC rep at large, Brotherhood of African heritage member, Academic Associates program, CCSC elections board, Board of visitors student representative, Lang Youth Advisor, and occasional performer on the Open Mic/spoken word circuit.

- **Did you go straight or take time off? Why such a decision? If you took time off, what did you do?**
  - I took a year off. At first I didn't want to but I actually wasn't pre-med my first year, so I didn't take any science classes at all. So I took a year off at first so that I could play catch up. I found out later that I probably would've taken the year off anyway.
  - In my time off I did research in Columbia's neurosurgery department, taught with the Lang Youth Medical Program, tutored in Harlem, and took a martial arts class. Schools mainly want to know that you are spending your time well. For those of you who are stressing: the average entry age in medical school is 25, not 19. You'll be okay.

- **Why did you choose the medical school that you did? What do you like most? What do you like least?**
  - I chose Penn because it seemed like the best of all worlds for me. People, curriculum, atmosphere, location, and reputation-wise.

- **How was the transition into med school?**
    - I'm still transitioning. I don't think I'll ever be fully done with it. Med school is hard not because of the difficulty of the material, but the volume of it. The analogy they use here is trying to drink out of an open fire hydrant. Especially with our accelerated curriculum, its super important to be able to manage your time well. The funny thing about the med school transition is that it's similar to the college transition in that we have boatloads more time than before, but the problem is that there's too much to fill it with. Anyway, when I have a solution, I'll let you all know.

- **What do you look forward to in the immediate future? What are your future goals after med school? What do you want to do with your degree?**
    - In the immediate future, I'm looking forward to surviving this brain and behavior test, possibly even acing it.
    - Further out, my future goals are to obtain an MBE and perhaps an MPH.
    - I like to write (I write an Op-Ed column for the campus paper here) and want to write about bioethical and public health issues that affect people not on a broad scale but a personal level. A problem in healthcare is that most doctors are great listeners and problem solvers, but poor storytellers. I want to change that--there's a lot going on that's not being said. On the other hand, I'm also planning on becoming a neurosurgeon. Go figure, huh?

Maritza Harper,

MS II, Weill Cornell Medical College, Class of 2013

Name: Maritza Harper, CC-SEAS'09
Major: Chemistry (in CC) and Biomedical Engineering (in SEAS)
Extracurricular Activities at CU: Community Impact (HEAL); Columbia University Emergency Medical Services (CAVA); Gospel Choir; Women's Squash Team; Kappa Alpha Theta; RA in Carman and Watt
Extracurricular Activities at Medical School: Class President; Educator at a Homeless Shelter
Random Fact: I have a small dog named Cody.

- **How was your pre-med experience at Columbia?**
  - I dealt with the pre-meds by avoiding them. Besides, I never have considered myself a pre-med anyway- I just did activities and classes that interested me, and all of those things have lead me to medical school.

- **Did you go straight or take time off? Why such a decision? If you took time off, what did you do?**
  - I went straight through. I applied straight through because at the time I felt that I was 160% ready to tackle medical school and I felt I was ready.

- **Why did you choose the med school that you did? What do you like most? What do you like least?**
  - I picked Cornell because of the global health curriculum, small class sizes and access to hospitals in other boroughs with different patient populations. I like Problem Based Learning and the class size. I really like the environment. They truly are supporting you and really helping you know what you need to know. Everyone is super nice and super supportive. They just try to make it what it needs to be so you can become a really amazing doctor. I don't particularly like the neighborhood.

- **How was the transition into med school?**
  - It wasn't bad. Good. Different. A lot of material. More in depth. Way more in depth. I like it.... A little stressful. But good. I live on campus. There are 100 students in my class. Luckily, Cornell's med school classes first year end at 1pm, so I had afternoons to get adjusted.

- **What do you look forward to in the immediate future? What are your future goals after med school? What do you want to do with your degree?**
    - I can't wait to get to third year and finish school. I eventually want to go back to Africa and provide health education and health services.

Amanda Lynn Hernandez,

MS II, MSTP Yale University, Class of 2016

Name: Amanda Lynn Hernandez, CC'08
Major: Neuroscience and Behavior
Extracurricular Activities at CU: CU-AMSA; CU-Wind Ensemble; Relay for Life- Fundraising Coordinator; Research throughout sophomore year to senior year
Extracurricular Activities at Medical School: Student National Medical Association (SNMA) Region VII Minority Association of Pre-Medical Students (MAPS) Liaison; Latino Medical Student Association (LMSA) National Regional Development Chair and Northeast Regional Co-Chair; Yale Physician Scientist Interest Group (PSIG)

Random Fact: I am a musician (flautist) and a singer… The truth is music was my first love, and then there was science! ☺

- **How was your pre-med experience at Columbia?**
  - Stressed! I let myself become raveled into one huge ball of stress. I let my peers get to me, I let the competition intimidate me, and in hindsight if I would have had just a bit more faith and confidence I likely would have performed better and had fonder memories of my time at Columbia.
  - Word to the wise: Don't stress! You are your own worst enemy when you make things harder on yourself than need be. Nobody is perfect, and you have all that you need to succeed already within you… Just keep pushing forward! (…seriously, a little faith goes a long way!)

- **Did you go straight or take time off? Why such a decision? If you took time off, what did you do?**
  - I took a year off. I lived at home worked at Columbia in the same lab I did research in as an undergraduate. I decided to take time off because I was exhausted from pre-med/MCAT. It was the best decision ever. I think everyone should take time off! It absolutely brings you back to reality and re-focuses your intentions for the future.

- **Why did you choose the med school that you did? What do you like most? What do you like least?**
  - I chose Yale because of the Yale System. In short, the Yale System involves not being ranked against one another, having no formal exams, and a Pass-Fail grading system. After a pre-medical experience at Columbia, this was absolutely the right choice. I love my community, the faculty, and the Yale System the most. What I like the least is living

in New Haven, but hey… You make sacrifices, and home (NYC) is only an hour and a half away! ☺

- **How was the transition into med school?**
  - Very smooth! I was excited and ready to move on to the next phase of my life ☺.
  - The only thing that was a little bit challenging was getting used to New Haven. After being born and raised in NYC, and attending Columbia, it was very strange to be in a smaller place with less going on. But now, I really enjoy the quaintness of New Haven and having fewer distractions as a medical student is certainly a plus!

- **What do you look forward to in the immediate future? What are your future goals after med school? What do you want to do with your degree?**
  - I look forward to knocking Step 1 out of the ball-park! I'm really thrilled (and just a bit nervous) about completing the first step towards becoming a licensed physician!
  - My future goals include research (yay!) and possibly a residency in Neurology or Psychiatry.
  - My goals for my degrees are constantly changing. I know that I want to return to NYC and work in my community, but how I will engage medicine and research has yet to be determined… Ask me again in a few years ☺.

Mabo Imoisili,

MS I, Columbia University
College of Physicians & Surgeons, Class of 2014

Name: Mabo Imoisili, CC'10
Major: Political Science
Extracurricular Activities at CU: RA; Volunteered at St. Luke's; AMSA's Public Health Committee; Goju-Ryu Karate Club
Extracurricular Activities at Med School: Black and Latino Students Organization (BALSO); P&S Rugby; Health Policy Club
Random Fact: I am into martial arts.

- **How was your pre-med experience at Columbia?**
  - My pre-med experience is hard to characterize. I did better in some classes than others, and not even the typical ones (I actually really like organic chemistry and did quite well in this class). There were times when it was stressful, but also times when it felt perfectly manageable. I was a Political Science major and I think that this helped me out a lot. For example, I could always able to switch subjects easily while I was studying. This allowed me to work more effectively for a longer period of time. It might have been nice to get more of a background in science, but I think my experiences served me well. In retrospect, I do wish that I had reached out and talked to more professors, studied more in groups, and paid more attention to extracurricular activities early on. This would have made things much better. I was an RA during my junior and senior years, and participated in summer research.

- **Did you go straight or take time off? Why such a decision? If you took time off, what did you do?**
  - I went straight from college to medical school. I decided that it was the right thing for me to do, largely because I thought that starting earlier would give me a better chance at creating a career that I would find most desirable. I believe that I will work primarily as a clinician, but will also work in other areas of interest that I can integrate into my medical career.

- **Why did you choose the med school that you did? What do you like most? What do you like least?**

    - I chose to attend Columbia P&S for a number of reasons. For one, it is a great school. I believed that the education would be top-notch, and that opportunities that may not be as readily available elsewhere would be accessible based on available resources. Furthermore, as an undergraduate, I got the feeling that I wasn't "done" with New York yet and wanted to stay here. Additionally, Columbia is pass/fail before the clinical years. Everybody that I talked to on the interview trail mentioned that this was really quite important, and if possible, to go to a pass/fail school. In retrospect, I realize how right they were, and I would suggest the same.
    - Because of the pass/fail polic, I've been able to participate in various extra-curricular activities that I may not have otherwise. My biggest commitments are the Black and Latino Student Organization and P&S Rugby. I make time for other activities as well. I would say that the balance of school and other activities, combined with many of the people that I have met and work with are my favorite things about the school. My least favorite thing, though this will seem somewhat petty, is the lack of variety in dining options at the uptown campus. I was a little spoiled by Morningside Heights in this respect.

- **How was the transition into med school?**
    - My transition to medical school was very interesting. As a Political Science major, making the transition to doing all science for me was, while not jarring, but certainly difficult. The balance of subject matter was one of the things that I did enjoy about my undergraduate coursework. Additionally, while Molecular Mechanisms was rather similar to undergraduate science classes in many ways, Anatomy required somewhat more flexibility. The first semester took getting used to, but now, in my second semester, I feel that I have a much better grasp of what I need to do to achieve my goals. I have worked to fix some of the things that I perceived to be shortcomings of my undergraduate experience, and got involved with extracurricular activities early on. I also began to study in groups more. I hope to do this even more in the future. Medical school is certainly more work for me than college was but I also feel more able to handle what I am given.

- **What do you look forward to in the immediate future? What are your future goals after med school? What do you want to do with your degree?**
    - In the near future, I look forward to continuing school after our break and taking advantage of even more aspects of the medical campus than I have been. I have yet to settle on a summer activity, but I am enthusiastic about all the options that I am pursuing. Perhaps most of all, I look forward to getting to better know my classmates and students outside of the medical class.

- After medical school, I hope to be involved in a residency program that I am very enthusiastic about, and eventually become a practicing physician acting in the realm of public health as well as education. I don't know exactly how I will do everything that I want to, but I look forward to finding out what I need to do and to further developing my plans into concrete steps.

Kwaku Kyere,

MS I, University of Michigan
Medical School, Class of 2014

Name: Kwaku Kyere, CC'09
Major: Psychology
Extracurricular Activities at CU: St. Luke's Volunteering, Academic Success Program summer RA, Kluge Summer Fellowship, Mentoring in Medicine
Random Fact: Likes Tom and Jerry.

- **How was your pre-med experience at Columbia?**
  - Pre med at Columbia was neither stressed nor chill. I just tried to challenge myself to do as well as I could.

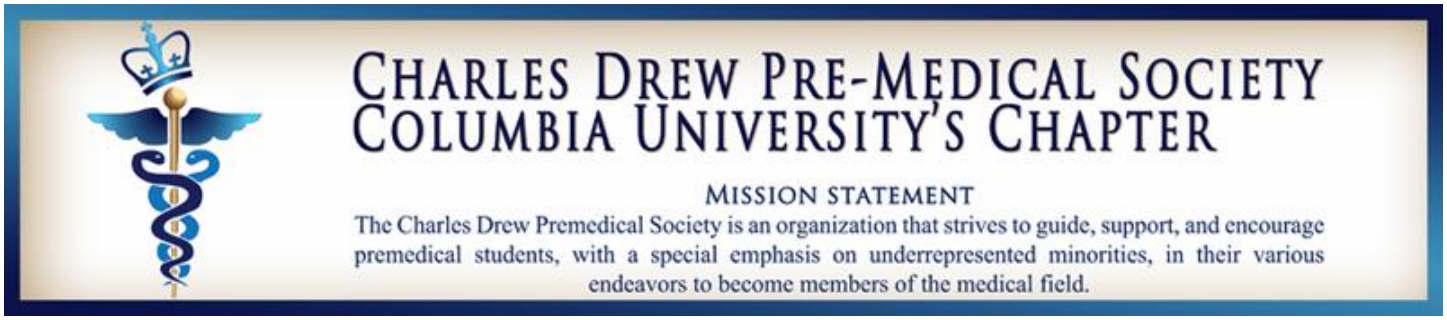
- **Did you go straight or take time off? Why such a decision? If you took time off, what did you do?**
  - I took a year off between college and medical school. I wanted my senior year grades to count. I did research during my year off. This time off also allowed me to afford interview and application expenses because there was no way I could have done so without a job.

- **Why did you choose the medical school that you did? What do you like most? What do you like least?**
  - I chose Michigan because I had a positive feeling about it when I interviewed. The admission staff made me feel very comfortable and wanted. It just felt right. Coupled with the fact that it's a very good medical school, it was not that difficult of a decision.
  - One of the things I like most about Michigan is the flex-time quizzes and exams. This is a feature that allows students to take the weekly quizzes or exams at any time between Friday 5pm and Sunday 11pm. This allows students to plan their weekends as they wish. Also, it breaks up the material into manageable quantities (i.e. you have a number of non cumulative quizzes and one cumulative exam instead of a set of huge exams after 6-8 weeks of material). In other words, it gives you some breathing room. You can take the quizzes/exams on Friday and have Saturday and Sunday off, or take your time to study and take it Sunday night. It's up to the student and their style of learning. Also,

lectures are videotaped. Thus, students can choose which style (going to class, watching videos, or a combination) that works for them.

- **How was the transition into medical school?**
    - The transition was pretty smooth. I knew it was going to be a challenge and expected the degree of difficulty and amount of work I had to do. Thus, I was not surprised.

- **What do you look forward to in the immediate future? What are your future goals after med school? What do you want to do with your degree?**
    - I am looking forward to completing the USLME Step 1 board exam and getting on the wards in the immediate future. I look forward to earning enough money to open a clinic/hospital in my home country of Ghana.



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