Welcome to November!

Can you believe it is already November, Medical Sciences? We hope you are ready for your third round of midterms and exams, and continue to keep moving forward until a much-deserved and much-needed Thanksgiving Break. You’re almost done!

Check out what we have been working on this month (and if you’re interested in writing for the MedCat Jr. contact Lauren at styczyn@mail.uc.edu).
A Gift to Give, a Lesson to Learn
Hoa Pham, 2021

I remember a wide-eyed girl her junior year of high school, proudly wearing a polo with the Cincinnati Children’s Logo, walking in her first day as a volunteer. Like any other person with the same ambitions of pursuing a career in medicine, that girl believed that volunteering at the third best Pediatric Hospital in the nation could simply give her the experience and credit she needed to facilitate her career.

That girl, on her very first day, sat down with two kids for two hours in the exact same spot. She did nothing more than talk to the children, play with them, and even happily witness the boy pulling out his very first tooth, a proud token that would later garner him money from the “Tooth Fairy”.

From that single day within a mere two hours, she could already see something much more than a simple experience she needed. Volunteering brought her joy, happiness, and an irreplaceable feeling of graciousness. That girl was me.

My job at Cincinnati Children’s for the past three years involves working with Child Life services in order to bring toys, games, and other fun activities to kids and their families. This was dubbed “Bring the Fun”. With a team of three other volunteers, I strolled the hospital with a big suitcase full of fun things to do. We played with kids of all sizes, all shapes, all ages, and all illnesses. What we did as volunteer, without any form of payment, helped kids feel free from the hospital setting and even relieve parents from the stress. The best experience is when I see kids every week and they are always so enthusiastic to see me. What also makes me love CCHMC is the staff, workers, and volunteer team. They are so incredibly understanding, kind, and will give you the experience you want.

Working as a volunteer has taught me so much – it has taught me that even the simplest things can make a person’s day, even the smallest amount of kindness can change a person’s day. It has made me want to work with kids and pursue a career in Pediatrics. I know many people who can’t stand kids, and I can understand why they view them as mischievous little devils who are destructive and violent, trust me I’ve had my fair share of kids who are a handful – however kids are clean slates. Kid’s emulate what they are taught and what they see – as a volunteer, it is also so crucial to not only represent the hospital as a safe environment no matter their illness and ailments, but to be a role model for these kids even for two hours. Volunteering also gave me friends who shared the same passions and interests as me. I could build trust, leadership, teamwork, and learn to deal with different kids. Most of all, volunteering gave me an outlet to go where I know I will always feel good, it gave me a place where I could feel like I was making an impact in the community and in my own life.

Volunteering at different places and in different environments also gave me a lot of perspective in healthcare. I started out at the Liberty Campus, in a very well-off suburban community where I lived. This was where I found my love of volunteering because most of the
children there were of higher-class families, who could afford healthcare, and who were well-behaved. These kids were often time also shrouded by their parents and sometimes often reluctant, but many of them were a joy to work with and never failed to make my day. In the summer before my freshman year of college, I worked in the CPP clinic one block from Campus. The CPP had many impoverished children, orphans, foster kids, and one of my duties was to read to these kids. I found myself struggling a lot more while working here. For one, I only had one other partner, thus many days I would find myself alone if she did not come. The kids here were definitely not used to having play time – toys, games, anything – they ravished and fought over, they were rowdy and I often felt frustrated trying to deal with so many children in a small space, fighting over the same things. In most cases if this happened at Liberty campus – the parent would immediately step in and help me, knowing that it wasn’t my place to teach, and definitely not scold and reprimand their kids. However, in the CPP clinic, every single week the kids that showed up were always left in my care, the adult leaving to worry over a sibling or some other paperwork and did not even glance over every so often. Parents that did were far and few in between. There were countless of occasions when I had to go on a goose hunt to find NOT a missing child, but rather a missing parent. I struggled in the small CPP clinic right in the heart of Avondale. I struggled facing a world that was so unlike mine, a world where I was not used to.

However, it gave me insight on health disparities, it gave me truth in the system. It gave me a basis of something that other students may not have witnessed – and over the course of three months, I learned new skills in handling messy situations calmly and effectively, I learned to talk to the adults and make sure they were not left under my supervision.

Finally, starting out in college, I am working in A3 North, Same Day surgery as a Child Life assistant bringing anything to entertain the kids and keep them happy. I learned many new things – for one, I thought I was going to be greeted with smiles, happiness, and enthusiasm to play with me. Sorely, I was disappointed to be met with glares, awkward stares as if I had intruded in on an extremely private moment, and many sleepy, sleepy kids. I found more joy in the Activity room, however this new environment gave me a great deal of actual patient and hospital setting interaction. I’ve become rather desensitized to crying, noises, smells, heart-wrenching scenes of kids bandaged up, wound drains, IV bags hanging off the hooks like a bouquet of drugs, and all sorts of families who blatantly did not want me there. This was the side of volunteering that made me glum because quite frankly, I was doing my job, making my rounds and trying to do the best I could for these patients – but I was limited by my skills, what I could actually do, and the wishes of the patients’ and their families. I often found myself talking to the kid, trying to interact with a fully conscious child, but was talking back with the parent. I understood the truth as a future health care professional something I will have to face – children who are underage with parents who speak on their behalf, families who stop me and want a different say than what I could do.

As happy go lucky as Volunteering makes me, it has given me valuable experience interacting with patients and their families. It has given me so much insight and strength, so many skills that I could use. I am so grateful to have been blessed with this opportunity. To
anyone out there who wants to apply – go on Cincy Children’s webpage! Volunteers are the heart of the hospital – they do what no other can do. They give their heart, their passion, their love and kindness, and ask only for smiles in return.

**The Future is in the Frogs: My Research Experience**

Missy Macdonald, 2019

On average, 20 people die each day waiting for an organ transplant. Many who receive organ transplants reject the tissue, and those who do not have to stay on immunosuppressants for the rest of their lives. What if there was a way to have an organ for every patient that they will not reject?

My research at Cincinnati Children’s Hospital is working to find this “miracle cure.” The Zorn lab works to understand the embryonic development of the digestive and respiratory systems. Studying how a single cell grows and divides to become trillions of specified cells within the human body has great scientific advantages. We can learn the pathways and mechanisms that control the proper formation of organs and determine how errors in the pathways can cause congenital defects. Determining the mechanism of control for these genes is extremely important, as a disregulation could cause any number of diseases that are not compatible with life. Knowing exactly how the gene is regulated allows for the development of diagnostic techniques, therapies, and regenerative medicine treatments. This work can influence stem cell differentiation protocols to be able to grow fully functioning organs from a patient’s own tissue, reducing the risk of transplant rejection, decreasing wait time, and bettering patient outcomes.

For our studies, we use Xenopus laevis and tropicalis, both species of frogs, and human embryonic stem cells as our model organisms. Embryonic stem cells allow us to study human cells, which give a more accurate representation of what will happen patient tissue. Although these cells will not have the same cell-to-cell and tissue-to-tissue interactions a full organism would have. Frogs, although they cannot always replicate the molecular mechanisms exactly, allow us to study development similar to ours as they are simple vertebrates and have similar physiology. The many, large, externally developing embryos that can be collected in a single day allow a variety of different experimental protocols.

Our hope is to have a gene-regulatory model where a computer program simulates development. An investigator can go into the program, affect any gene at any time point, and see the outcome on the adult organism. Conversely, a clinician could enter the symptoms and the program would give possible causes. This research could change the way congenital diseases are identified and treated, allowing medicine to be tailored to each individual patient.
“What’s your major?”
“I’m in Medical Sciences”
“Oh, so you want to be a doctor! What kind?”

Sound familiar? As Med-Sci students, we’ve come to expect it. We’ve already got our answers prepared.

“I want to go into pediatric surgery.”
“I’m going to be an obstetrician.”
“I’m want be an physical therapist.”
“I have no idea.”

Some choices are more popular than others. But for the most part, nobody has it really figured out. Recently, I found my own answer, in something I had never heard before: academic medicine.

It definitely sounds cool. But what is academic medicine?

According to AAMC, academic medicine pursues “the tripartite mission of teaching, research, and clinical care”. The career involves work in teaching hospitals and medical schools training physicians, nurses, physician assistants, physical therapists, and other health professions. Half the week is devoted to teaching and research, while the other half involves clinical practice. To me, it seems that I would get the best of both worlds.

Often, the Academic Medical Centers at where these careers are centered are at the forefront of innovation, producing the first polio vaccine, the first pancreas transplant, the first human gene therapy for cystic fibrosis, and the first intensive care unit for newborns. In addition, AMCs often work with medically-underserved populations; with people who really need it.

When I read that first sentence about the mission of academic medicine, I was sold. In addition to wanting to go into medicine, I have always loved teaching, whether that has just been teaching my peers, teaching gymnastics, or tutoring, it has always brought fulfillment to my life. Furthermore, research, while still relatively new to me, is incredibly exciting, and was my original career choice prior to deciding upon medicine. In this way, I feel like I can make an impact on people’s lives at both a personal level, through clinical practice and teaching, and at a more macroscopic level, through the research I pursue. The perfect combination.

By no means do I now have it all figured out. But now, I do have something to work towards; something that excites me even more, and that I would be happy to devote my life to. And now, when asked, I can say,

“I want to go into academic medicine.”
Spanish: a controversial topic among college students. For many, years of having the language rammed down their throats has caused a visceral repulsion and loss of all knowledge besides “donde está el baño? For me, it has led to a love for learning new languages, a Spanish minor, and the hope to one day become fluent.

Even though I have been learning Spanish since kindergarten, it wasn’t until my junior year of high school that I realized how much Spanish I had learned and how useful it could be. At that point I really started to understand that I could carry out full conversations with others entirely in Spanish, read at an adult level, and write analytical essays with transitions and good vocabulary. Senior year, after taking AP Spanish Literature, I had learned a lot about the history of Spain and central and south America, and was able to read the equivalent of Shakespearean Spanish with more ease than I could read Shakespeare. I also realized that Spanish was a way to not only communicate with a whole other world of people, but to understand and accept a new culture.

Coming into college, I knew I wanted to go into medicine. However, after my previous experiences with Spanish, I decided that fluency was something I wanted to pursue. With the rising number of multilingual people in our country, it is important that we are open and accepting to them, and that we can adequately understand them to help. As a healthcare provider, having Spanish as a way to communicate will help me not only more accurately understand my patients in a clinical setting, but will also help me make a cultural connection that can make them feel more comfortable. It allows for more transparency for the patient, and a greater understanding overall of how exactly to help them based on all aspects of their life.
Rahul Sandella, President

Hometown: Mason, OH
Major/Minor: Medical Sciences Major
Class of: 2019

I chose to dedicate my undergraduate years at UC to pursuing a degree in Medical Sciences, because the program has the connections, resources and opportunities to make me confident I can achieve my career goal of becoming a physician scientist. This program is particularly valuable to me because of the renowned Medical Sciences faculty and staff that are passionate about preparing us for Medical/Graduate School and beyond both in and out of the classroom. Apart from the academic side of Medical Sciences, the program is also very attractive because of how close-knit the students are. Through having Learning Communities, classes, and extracurricular experiences together, the Medical Sciences students have the opportunity to create strong bonds with like-minded peers.

Fun fact: I met the King of Spain when shadowing physicians in Spain last summer!

Minh Nguyen, Internal VP

Hometown: Cincinnati, OH
Major/Minor: Medical Sciences Major
Class of: 2019
I chose MedSci because I wanted the chance to further my education in a city I love and where I want to make a difference.

Fun fact: I can eat Skyline at any time, any day of the year.

**Colin Stapleton, External VP**

Hometown: Lexington, KY

Major/Minor: Medical Sciences Major

Class of: 2020

The Medical Sciences program is unique in that it is housed inside UC's medical school, giving opportunities for classes and mentoring that are not available anywhere else. I was homeschooled, and used to a small class size (just me!...not really. I took many dual-credit classes during high school), so the size and selectivity of the program appealed to me as well.

Fun fact: I have played the piano since I was five (and have continued to play while at UC).

**Lauren Styczynski, Secretary**

Hometown: West Chester, OH

Major/Minor: Medical Sciences Major/Rhetoric & Professional Writing Minor

Class of: 2020

Med Sci was the perfect stepping stone to get me to achieve my future goals and dreams. I love how Med Sci is able to adapt with me to better support me. Med Sci provides such an awesome undergraduate program for any kind of graduate school, and is the best support system I never knew I needed.
Fun fact: When I'm not in the lab working on pain circuits and interneuron populations, you will often find me typing away on my laptop working on articles or other news stories! I am a contributor for The News Record, UC’s student newspaper, and the editor of the MedCat Jr., and am even working towards a minor/certificate in Rhetoric & Professional Writing.

Nora Lake, Treasurer

Hometown: Cincinnati, OH

Major/Minor: Medical Sciences Major/Math? Minor

Class of: 2019

I chose Medical Sciences because of the exceptional opportunities the program offers. Since Medical Sciences is the only undergraduate major in the nation which functions within a College of Medicine, I have the unique opportunity to take challenging courses under world-renowned researchers and physicians. When I’m not learning about Genetics or Embryology at UC, I can walk across the street to Children’s Hospital to shadow and perform Immunology research at the number three pediatric hospital in the nation. These excellent opportunities were available from the moment I stepped on campus, and that is largely due to the fact that Medical Sciences’ faculty and advisors take the time to learn each student’s interests and goals. With less than forty students in my grade, my Medical Sciences classmates have become some of my closest friends as we progress through the challenging yet rewarding major.

Fun fact: I backpacked and canoed more than 100 miles over 8 days in northern Minnesota a few years ago. There were several nights where we had to relocate our campsite to a different island because we were near a bear den!
Avanti Patel, Senator

Hometown: Blacklick, OH

Major/Minor: Medical Sciences Major/Business? Minor

Class of: 2019

I have a great appreciation for the Medical Sciences program with the amazing opportunities that are offered to us such as exclusive shadowing opportunities, the relatively small cohort sizes, accessibility to amazing advisors, and the mentoring program with the medical students and faculty.

Fun fact: I absolutely love ice cream so I recently started making homemade ice cream, and my favorite flavor so far is orange chocolate-hazelnut! I’ve also had so much fun being on the MedSci intramural basketball team for the past two years despite poor athletic abilities.

Joanna Rebiktsi, Senator

Hometown: Hebron, KY

Major/Minor: Medical Sciences Major

Class of: 2020

Why MedSci?

I selected Medical Sciences program for so many reasons, but mainly because of the small class size and the massive amount of individual attention that every student receives in this program. The faculty and staff are very accessible to students and are always willing to help with anything that you need.

Fun fact: I am a triplet with two other brothers who are also attending UC!
**STUDENT SPOTLIGHT: Anna Hopkins**

**Class of:** 2018  
**Hometown:** Anderson Township, OH  
**Why Medical Sciences? Why UC?**  
When I was halfway through my sophomore year and was going through the process of transferring from UD to UC, I wanted a program that could get me a close, hands on look at medicine. Medical Sciences was the best option there, and it sounded like an exciting opportunity since it's one of the only programs of its kind in the country. I toured the school when I decided I wanted to transfer, because I never gave it a chance in high school. I just fell in love with the place. UC has the big school feel with a small school sense of community and support. I'm also a big football fan, and I wanted to go somewhere that had a lot of fun on game days.  
**Best part of senior year:**  
Feeling like I've finally gained my footing a bit and I know how to handle my workload and deal with stress. It's also pretty sad though because it means college is almost over and soon I have to actually be a grown up.  
**What is Your Senior Capstone Like?**  
My capstone is a community service capstone in which I work at the School Based Health Center in Hughes School on Clifton Ave. To sum it up, I work on increasing their patient population. It's a great learning experience, because I get a firsthand glimpse at the health care disparities in Cincinnati, and I get to help out with increasing access to healthcare in a low income community.  
**Future Plans?**  
I'm planning on spending the year after I graduate working and travelling (I'm spending about a month in Europe), and then hopefully beginning optometry school in the fall of 2019.  
**Favorite Food/Drink:**  
This is pretty hard to nail down, because I love so many different things. I love sushi, mac n cheese, queso, Mexican food in general, lots of different Indian and other Asian foods...I don't think I could pick one favorite. Food is a big source of joy for me. In terms of drinks though, coffee makes me very happy.  
**Fun fact:** Anna loves to do yoga and take barre classes!  
“I'm finally starting to learn how to cook real food. It's going well.”