## **Carnegie Mellon University** Summer Internship Experience Fund Summer 2016

The CMU Summer Internship Experience Fund (SIEF) was available to current undergraduate students who were going to participate in low paying or unpaid internships located in the United States during the summer of 2016. The SIEF was designed to encourage early career experiences that would support students' academic goals and career exploration. The Career and Professional Development Center coordinated the dispersal of Carnegie Mellon institutional funds that had been set aside to enable students to have a high-impact summer experience.

**Carnegie Mellon University** Career & Professional Development Center Below is a list of the 55 students who were able to participate in an internship thanks to this funding, and, on the following pages, reflection essays that these students have written about their experiences. Of these students, the SIEF was able to help 22 rising sophomores, 16 rising juniors, and 17 rising seniors.

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# **College of Fine Arts**

Alex Lin – Architecture '19 Hansa Architectural and Engineering Services South Richmond Hill, NY This past summer, I had the pleasure of working for Hansa Architectural & Engineering Services. This internship allowed me to, for a brief period of time, be a part of a team of individuals working on real projects and dealing with real issues. It was crucial not only as a brief look into what architecture holds in the

future as an occupation, but also as a peek into the work that engineers put in to make a project come to life.

This experience allowed me the chance to see how all of the occupations related to architecture blend and come together to create a project. In respect to the internship experience, it was what I did and did not expect at the same time. While I assumed that there would be a high usage of certain computer-based software, I was blown away by all of the technicalities that architects and engineers alike had to consider when designing.

Although at times overwhelming and frustrating, this internship made more of a summer than I ever could have without it. Given the conditions of the internship, and my family's financial situation, I can undoubtedly say that receiving the Summer Internship Experience Fund enabled me to take advantage of this opportunity to test, learn, and grow as an architect.

Anna Menkis - Linguistics and Music Performance '17 Tanglewood Music Center Boston, MA This summer I was a fellow at the Tanglewood Music Center in Western Massachusetts. This position was the perfect fit for me because while I love music, I don't want to perform. During this time, I was a librarian for the TMC Orchestra, a group of top-level, college-age, and recently graduated young adults

pursuing careers as professional musicians. I was surprised and inspired by their dedication and passion for what they were doing.

I learned a sense of confidence in my own judgement in the library. I struggled with this at first because as an intern with the Pittsburgh Symphony, my only experience in the library was under the direct supervision of the orchestra librarians. I have already used these new skills as the head librarian of the CMU Philharmonic. It is my responsibility to assign roles and supervise the graduate assistants on a timeline to prepare the music for the orchestra concerts, and I could not have done this without my experience at Tanglewood.

As a college student, I have to balance my needs for training in the field that interests me with my financial needs to pay for my education here. There isn't an official degree programs for orchestral library work, so the training available to me is primarily at summer festivals. The SIEF allowed me to

pursue both of these needs. I am very lucky to have been allowed this opportunity, and I am very excited to move forward in my training.

Ashley Chan - Art '19 Rochester Museum and Science Center Rochester, NY I am extremely grateful for my summer internship with the Rochester Museum and Science Center. Despite being an intern, I was given huge amounts of responsibility and creative freedom within independent projects that accelerated my skills as a

designer and team member. Although, I was considered to be a graphics intern who was supposed to just create digital illustrations for the museum, my skills translated to creating 3D models of exhibits and aiding in the construction of installations. Prior to this internship, I had no experience with Adobe Illustrator but now I would consider myself proficient which will aid in making me a more well-rounded artist and designer. In addition, I learned how to construct small-scale models so that I could best visually explain my ideas to peers.

As much as I enjoyed this internship, I'm realizing that working for a museum is not something I'd necessarily like to do. I didn't relate to the administrative path because they never built the exhibits, and as creative as my role allowed me to be, my designs had to be somewhat elementary because the museum catered to children between the ages of 3-12. I was grateful for this opportunity because I realized that going for an accelerated arts management program here at CMU won't be the best choice since I no longer seek an administrative career. Thus, I understand that I seek a future where I am directly a content creator.

I'm grateful for receiving a SIEF award. Having this fund allowed me to dedicate my time to creating quality content because I could work longer, and with less stress while learning more about who I want to be as a future artist.

Carson McCalley – Drama '18 Santa Cruz Shakespeare Santa Cruz, CA This summer, I was an intern at the Santa Cruz Shakespeare festival. Working as an intern at SCS this summer solidified many of my long-term career goals. Firstly, it completely reinforced my love of Shakespeare's work and my desire to participate in

festivals after I graduate. As an acting major, we get to explore a lot of different styles of theatre, but do not get to perform in front of a public audience until our junior year. This internship was the absolute perfect transition into performance, and gave me a much clearer idea that Shakespearean texts are something I want to work with after I graduate.

Throughout the summer, the company hosted a series of masterclasses by the Equity actors for the Intern Company. This is where a lot of my new skills have come from. I am now much more trained in meditation and mindfulness, "neutral-man/woman" movement work, mask work, and the business of acting. These are all not only directly applicable to my future, but I started applying these techniques from the moment they were taught to us in the summer. None of this could have been possible without the Summer Internship Experience Fund. I could never have afforded to live in Santa Cruz, and would have never had this experience, which not only positively benefited my acting and my career, but also helped to develop me into a completely different, more mature, and positive human.

Charlotte Stiles - Art '18 School of Poetic Computation New York City, NY This past summer, I accepted an internship at the School for Poetic Computation (SFPC) as a Student Researcher and Teaching Assistant under the guidance of artists, technologists and educators.

SFPC is a welcoming and open space where I was lucky enough to start strong relationships with my peer and mentors. I was able to ideate unabashed, which lead to a very fruitful practice this summer. Inside the building that used to be Bell Laboratories I learned how to run OpenFrameworks, which is an artist's C++ wrapper and best friend, on a Raspberry Pi, the smallest, cheapest and versatile computer available. I also learned about open source publishing; this is indicative of the community at SFPC where everyone wanted to help each other. This will keep me connected to the community anywhere I may be. This also relates to my career goals because I have made meaningful connections and understand how creative code lives on the web and is accessible.

What surprised me the most actually seems very obvious to me now. I was surprised by the focus on community and relationship building over acquisition of technical skills. I am very grateful that the SIEF partially funded my experience this summer. It is great that this fund exists so that others who are in a transitional state like me can get the means to have experiences like mine.

Christian Strange - Drama '18 Santa Cruz Shakespeare Santa Cruz, CA This summer, I had the amazing opportunity to work at Santa Cruz Shakespeare as an Acting Intern. Throughout the course of the summer, I was involved in three productions, *Hamlet, A Midsummer Night's Dream,* and the intern Fringe show, *Orlando*. Each

day, I would start rehearsals at 9:00 am and would leave the rehearsal facilities at 10:30 pm each night. I had the challenge of learning all of my lines and blocking for all three of the shows in which I played highly developed supporting characters.

Since this was my first professional acting job, I was able to learn how to carry myself and how to act professionally in an Actor's Equity rehearsal room. I had to show up to rehearsal each morning on time and ready to go just like the other paid actors. Even though the work days were long and sometimes gruesome, I was surprised by the amount of love and support that came from the older actors. As an intern, I was able to have personal sessions with the more experienced actors, discussing the highs and lows of their careers. I was also assigned a personal mentor, who happened to be from my hometown. He was a wonderful reminder of home whenever I felt a little homesick, and I can honestly say that he will be a life-long connection.

Overall, I would say my experience at Santa Cruz Shakespeare was exceptional. I gained many valuable tools that will help me throughout my final two years in the School of Drama, as well as throughout the course of my professional career. I am forever grateful for the SIEF and its ability to allow college students to learn freely in new and exciting environments.

### Cooper Johnson – Music Performance '19 WQED Pittsburgh, PA

During my internship at WQED, I accomplished many tasks that were assigned to me including: creating 4 Art Updates, hosting a Bach, Beethoven, and Brunch, recording and dubbing over 20 records into CDs, recording over 45 reel-to-reel tapes and editing 35 of

them, and finally, hosting my own show twice.

Mastering the editing software was the most rewarding task I accomplished this summer. This launched me into the world of editing reel- to-reel tapes of Pittsburgh Symphony performances dating back 30-50 years. The problem with the tapes is that they are so old that there are noises and cracks in the music that are distracting. I recorded about 40 tapes this summer and edited 35 of them back to a playable state. The fact that I loved the music I was editing made it so much easier to know what to edit for. It felt like I revived a relic that had been neglected for far too long. Working with WQED this summer was a wonderful experience; everyone was so nice, and I wouldn't trade the things I learned for the world.

Emily Gallagher – Music Performance '19 Opera Theater of Pittsburgh Pittsburgh, PA This past summer, I worked as an Assistant Stage Manager for the Opera Theater of Pittsburgh. Although I am studying vocal performance at Carnegie Mellon, I do have a strong interest in the management aspects of the theater as well.

The most surprising thing I learned this summer was the fact that when something needs to be done and no one is claiming responsibility, it automatically becomes the responsibility of the stage manager. Because of this, I worked in a wide variety of capacities this summer outside of rehearsal, which I enjoyed immensely. One of the most useful skills I acquired during this summer was how to prepare paperwork for a professional production. I have worked as a stage manager in the past, but I have never before been required to prepare run and cue sheets for these productions, take blocking notes in rehearsals, or give standbys and cues for every entrance and exit of a singer. Learning these skills, which are standards in the professional world, make me feel more confident in my ability to work as a professional stage manager.

In many ways, receiving this scholarship fund is what allowed me to take this opportunity and stay in Pittsburgh this summer. The experience I gained through this internship was incredible, and I am so glad that I was able to work in a professional environment in a field that I love.

Erika Cox - Architecture / Ethics, History & Public Policy '17 Pittsburgh Department of City Planning Pittsburgh, PA This summer I had the amazing opportunity to intern with the Department of City Planning. Pittsburgh is at a fascinating junction in its development, and the ability to be immersed in local government during this exciting transition has not only reinforced my career ambitions but also changed my outlook on civic

#### responsibility.

For the duration of the internship, I worked with the Open Space Specialist. Together we worked on managing the city's recently enacted adopt-a-lot program and developing a permanent Food Initiatives Office to advance the state of food planning in the city. One of the most surprising aspects of this internship was getting a glimpse at the complexity of local government. Developing and enacting initiatives is far more work than simply having a good idea. Legal and bureaucratic structures that are designed to serve the people sometimes make change a slow process. This information on how governance works provided invaluable insight to me as an activist, a citizen, and a student.

The SIEF allowed me to take a position that I would have otherwise not been able to consider. This internship has given me a great deal of insight into a profession that otherwise seemed foreign, and allowed me to strengthen valuable skills for a continuing career in the public sector.

Jacob Poser - Drama '19 The Public Theater New York, NY Working at The Public Theater, one of the top off-Broadway theaters in New York City, this past summer allowed me to truly experience working in the New York theater scene. At the beginning of my summer, I was set on becoming a costume designer, and while

my time in the costume shop, and running around town fulfilling tasks asked of me, was inspiring and made me want to pursue design, it also inspired me to want to know more about the business side of theater. I realized that there is so much more to putting up theater than just the actors, designers, and directors. I want to be a part of more. For now, I am still studying design, and I feel that this summer projected me even further into my education here at CMU, but it also opened my eyes to so much more. I am now making it a goal to study business as I realize branding and networking are also big parts of being a designer. I feel that understanding the way the management of the business runs will, in turn, help me secure jobs in the future.

Overall, this summer was life changing. My new connections at The Public will most definitely help me in securing more opportunities in the future, and hopefully will one day land me a more permanent position in the field. My superiors were incredible and truly helped me to explore all of my interests. They expected a lot and in turn pushed me to be the best version of myself. Without the help of CMU's SIEF this summer would have not been possible. It is my hope that as I move forward here at CMU, that more opportunities like this will present themselves so that I may have more summers like this one. Kelly Li - Architecture '19 Assemble Pittsburgh, PA This summer, I spent eight weeks at Assemble, a nonprofit organization dedicated to empowering youth through art, science, and technology in the community of Garfield.

As a current third year architecture student, my internship at Assemble wasn't a traditional architecture internship with a firm. However, the valuable experience I gained by meeting such a large variety of people within Pittsburgh was extremely beneficial, both for creating a network of involved professionals within the city, as well as by gaining knowledge about the web of small organizations that work symbiotically to benefit their communities. Currently, I find myself using a lot of the information that I've learned in developing the funding, planning, and networking of CMU's architectural student journal.

Being the assistant of Nina Barbuto was also very helpful because she is also a graduate of the Carnegie Mellon School of Architecture, and a current adjunct faculty member. Working with her this summer allowed me to see how architecture skills could be applied to working within a neighborhood community through the lens of a nonprofit organization. From this internship, I have realized my interest in architecture that is closely aligned with the community planning process to create spaces that are thoughtful and contextual.

Parley Belsey – Art / Neurobiology '19 Berkshire Museum Pittsfield, MA This summer, I worked at the Berkshire Museum where I was an intern in their education department. My primary jobs were to create and instruct "cart programs" that interacted with the museum's current exhibits, teach weekend classes, and aid in the variety

of summer camps that were held throughout the summer.

The part of my internship that surprised me the most was that I found that I like being a teacher. I have never aspired to be one, though I did enjoy instructing the various programs that I was charged with, likely because the subjects and kids themselves were interesting and fun. I believe this experience has helped me grow a lot, not only because it was my first 9-5 job, but because it gave me a taste of how an institution functions and what is necessary to make it work. I think a lot of what I have taken away from it will become more evident in the future, but for now I can say that I can engage and lead groups of people of all ages, create teaching plans, and be an authority figure in a given situation.

I took a similar job at the Carnegie Museum of Art for this year, and I believe my new skills will be of much use in that position as well as all other leadership positions I take on. I thank the Summer Internship Experience Fund because it aided me in my desires to build experience and explore avenues of art that I have never particularly considered. Sarah Keller - Drama / Scenic Design '17 The Public Theater New York, NY This summer I was given the opportunity to work as a Props Intern at the Public Theater in New York City. This internship was truly an amazing opportunity. The Public Theater is one of the most well-known theaters in New York City, and it is one of the only permanent

institutions which provides both classical and contemporary new work to the people there.

This internship was integral to my long-term career goals. The two most important things I got out of this internship were the hands-on experience of working in a professional environment at the top of the industry, and the connections I gained through the people I worked with. I aspire to be a scenic designer, and in the theatrical industry it is essential to make connections with as many other professionals and institutions as possible. At this internship, we were often given opportunities to meet and work with top scenic designers, props-masters, managers, and people from every level of the industry, who worked not only at the Public but also at other institutions such as Lincoln Center, the Metropolitan Opera, and multiple Broadway designers and props-masters.

I gained many new skills from this internship experience. The most obvious were the practical skills of how to build and find props, and how they are used in professional productions. However, I also learned a lot by observing my supervisors and how they worked with the people around them. I learned so much from my work, the people I worked with, and the place I was fortunate enough to live. This would not have been possible without the support of the Carnegie Mellon Summer Internship Experience Fund, and I will always be grateful for this amazing opportunity.

Sarah Pidgeon - Acting '18 Santa Cruz Shakespeare Santa Cruz, CA This summer, I worked at the Santa Cruz Shakespeare Festival as one of their eight Acting Interns. Over the course of eleven weeks, I spent close to eight hundred hours in rehearsal, performed in three shows, and took several masterclasses. It was most certainly

challenging and at many times tested my limits, but the training that I've had at CMU over the past two and a half years gave me the tools needed to persevere through the struggles of this summer.

I think the greatest thing I take away from this experience is a new understanding of professionalism. For so long that meant listening to my authority figure, whether that be teacher, boss, or parent. This summer I felt a switch in my role, I was no longer inferior to my directors and more experienced actors, but I was an equally important creative role in the whole process. That meant certain that expectations had to be upheld, but things like timeliness and consideration came easy, and I knew that if I wanted to maintain the persona as a young but professional actor, my efforts to be a positive and helpful energy in the rehearsal room had to be a daily occurrence, on and off stage. I have learned the skills needed to be considered a member that is constantly feeding positivity and creativity in to the process while maintaining the reputation of a reliable and hardworking ensemble member.

It is funny looking back at the beginning of this summer and remembering all the thoughts I had about the internship going into it; I am such a different person now. I am excited to see what the rest of my year holds with these new skills and experiences.

William Pollard - Acting '17 ZACH Theater Austin, TX This summer was nothing short of amazing. I had high hopes for this internship and was not let down. An actor's career can be extremely uncertain, so having as many tools and skills under my belt as possible will give me a better chance of a working future. That is

why it was important for me to take on the challenge of teaching what I have been learning for the past six years. My confidence level in a classroom and ability to lesson plan has grown tremendously. I feel that it should be a requirement to teach for at least a few years to help keep theatre alive. I wish to pass on my passion to my students one day, continuing a legacy and further strengthening the theater community, which is what my mentor did for me.

The biggest surprise going into this internship, was that I would teach young children. My schooling has taught me advanced techniques for older students, so having to rearrange curriculum for 3<sup>rd</sup> and 4<sup>th</sup> grade students was quite the challenge. A lesson that was learned very early on was to adapt quickly. I learned to lesson plan for children between ages 3 to 18. These skills enabled me to become an adaptive worker, to morph my surroundings and meet the expectations of my employer, whatever they may be.

Receiving the Summer Internship Experience Fund relieved an incredible amount of financial stress this summer. I want to sincerely thank the SIEF for allowing me to participate in this internship. It is not taken for granted, and the lessons learned this summer will allow a more sustainable career as an actor in my future.

# **Carnegie Institute of Technology**

Allan Wang - Mechanical Engineering / Robotics '17 CMU Robotics Lab Pittsburgh, PA This summer I worked at the CMU Robotics Institute on the Assistive Robot for Blind Travelers project. My long-time career goal is all about research, pursuing a PhD degree and hopefully becoming a researcher or a faculty member. However, I am well aware that I need to actively seek opportunities to sharpen my skills and

attitudes as a researcher.

The most surprising thing about my research internship experience was the fact that I was working on my project by myself. Although there were other colleagues in the lab, they worked on completely different projects. This came as a surprise because I am used to teamwork and I enjoy the benefit of letting my teammates assist me with things that I am not familiar with like electronics. As a result, I had to seek instructions and teach myself many skills that I am not familiar with in order to create a successful robot. At the end of the internship, I discovered that knowing a little of everything can give you a lot more control of the projects on hand.

The SIEF not only helped me financially, but it also motivated me to work harder on my research project. In particular, this funding enlightened me to take responsibility for the monetary aid other people provided. This is important because in the future when I receive research funding from other agencies, I know what I should do to secure continuous funding. In other words, make sure to let the people funding me know that the money they spent on me is meaningful. I had a great summer research experience thanks to SIEF and I truly learned a lot.

Angela Gao - Electrical and Computer Engineering '19 Morsel New York, NY I interned at Morsel this summer and was able to experience the early stages of a startup. During my internship at Morsel, I learned many different skills that are applicable to both my major, as well as my career goals in the technology sector.

The most surprising aspect of my internship was the turbulence within the beginnings of a startup. After a month into my time at Morsel, the founders decided to shift the direction away from catering technology and more towards how technology and software can be used to support food companies. This change came about because there was not as many repeat individual customers as expected. This showed me that even when a new company is above water, the business model may not be sustainable and may need to be changed. Not only did I learn technical skills, but I also learned some soft skills. I grasped the basics of navigating through the work environment, and I practiced interviewing potential employees for Morsel. I also listened to some conference calls and negotiations with contractors and partners. The SIEF was a great way for me to explore a career path that I had been considering. I have gained insight about what careers I want and what I want from employers. I am extremely grateful to have received the SIEF so that I could do this internship.

Bobbie Chen - Electrical and Computer Engineering '19 TravelWits, LLC Pittsburgh, PA This summer, I worked as a software engineering intern for TravelWits, LLC, a Pittsburgh based start-up whose goal is to help travelers find cheaper and more convenient ways to travel, both for business and leisure. During this time, I worked primarily on the Vacations within Budget feature, which helps users

browse options in destinations, hotels, and transportation, comparing prices all under a single budget.

There were three main ways this internship related to my long-term goals. First, I developed experience and competence with programming, using tools as varied as .NET, AngularJS, Python, SQL, and even third-party APIs like Stripe and Woopra; with these tools I created a new feature in the site to hold a hotel, tracked web analytics data with extreme precision, and addressed user-facing bugs in the site. Second, I gained experience working in a professional setting; this was my first time working in a full-time professional capacity, and I learned to adjust both my interactions with coworkers and my work habits to match the setting. Third, I gained experience working in a small team: I interacted often with the other interns and the four full-time employees, and I learned the importance of collaboration and communication in this context, even in matters not directly related to the work being done.

Ultimately, the Summer Internship Experience Fund made this experience possible through its generous financial assistance. Without the grant, the expenses of staying in Pittsburgh over the summer rather than returning home may have led me to reject the opportunity and forfeit the potential benefits. I learned an enormous amount this summer, and the SIEF helped make that happen.

Frederick Buse - Chemical Engineering / Biomedical Engineering '17 Veteran's Health Administration Cleveland, OH I spent this summer in the employment of the Veterans Health Administration in Cleveland, Ohio. I specifically worked in the Functional Electrical Stimulation (FES) Center at the hospital.

The main area that my supervisor focused on was helping to restore gait function (walking ability) in

stroke victims. Using electrodes planted in the leg of the victim, he was able to write code that had the electrodes fire at the exact time to guide the leg along walking. This was particularly inspiring for me for two main reasons. The first of which was simply that I was amazed at what technology can do to benefit humanity, and reaffirmed my love for my biomedical engineering major. This furthered my desire to attempt to get a job in the BME field. In addition, every Wednesday I would walk around with one of users of this technology to help him get exercise and see if there were any improvements that could be made or that he requested. After this experience, I really want to make sure I can secure a job where I can actually interact with consumers and appreciate just how much of an impact I am making.

Receiving the Summer Internship Experience Fund definitely made a huge impact on my summer. Being around all these highly intelligent, highly motivated people really inspired me to work hard and reaffirmed my choice in major. I feel like I learned a ton just being around them and hearing about what they were working on, as well as smaller lessons about how to keep on top of all your work. I was exceptionally fortunate to have received this fund and I do not take for granted the impact it had on my summer.

# **Dietrich College**

Allysa Dong - Economics / Statistics '19 Readorium Teaneck, NJ This summer, I was given the incredible opportunity to intern under the CEO at an education technology start-up called Readorium, a web-based supplemental software that teaches kids from grades 3-8 about reading comprehension through fun science articles.

With Readorium, students can read chapter books, play games, and listen to music about different science topics, ranging from chemistry to zoology. The title I was given was Technology Intern, but in reality, I did much more than that. Because the company was so small, it was never difficult for me to find something different to do, and best of all, I was given the privilege to work in whichever department I wanted, from Digital Marketing to Article Publishing.

This internship was truly an amazing learning experience, as I not only learned in-depth about the education technology industry, but also how much effort it takes to run a business. I have come to the conclusion that, in the future, I would want to work in a field like education, where there is a social cause that motivates me to keep working and doing my best. I used to believe that I would graduate CMU and move on to a big, well-known company, but this summer has taught me that it is more important to find a job or cause that you are passionate about. That way, no matter how long you work, it will not feel like work at all. I am overwhelmingly grateful to the SIEF for providing me with the funds to participate in this wonderful opportunity.

Brianna Hudock – Psychology '18 CMU Health and Wellness Lab Pittsburgh, PA This summer, I worked in David Creswell's Health and Human Wellness Lab. This internship was strongly related to my long-term career goals, as I hope to pursue research in social psychology after my undergraduate career. I hope to work in a lab much

like Dr. Creswell's and act as a manager as I determine what research-based graduate program I wish to apply to.

The ability to work in this lab over the summer gave me a richer understanding of how a lab operates and what is expected of the different members of the lab in order for the entire machine to function. Because many of the senior members of the lab had left over the summer, I was given the opportunity to take on far more leadership roles in the lab than if I had only returned in the fall semester. I realized that the data entry tasks I had previously been tasked to complete were a piece of cake when compared to the more complex and abstract critical thinking tasks I had begun to acquire over the summer.

Overall, the fact that I was able to work in this lab in Pittsburgh this summer is the reason I am a better researcher today and why I feel so advanced in my classes. I feel like this opportunity has given me an upper hand compared to my peers, as I have a real idea of where I want to take my degree after I graduate, as well as skills and a network to help me get there.

Colin Tait - Ethics, History & Public Policy / Bagpipe Performance '18 Low Country Rice Culture Project Pittsburgh, PA This summer, I worked as a primary historical researcher under Dr. Fields-Black, Head of the African History Department here at Carnegie Mellon University. I had many tasks over the summer, including researching keywords to uncover relevant newspapers from 1860-1900, scouring books and

documents to investigate the economics of rice around the time of the birth of slavery, and I also worked to understand more about African cultures in general.

I'm still working on my final objective, finding relevant African proverbs to add artistic value to each section of Dr. Fields-Black's study. I am currently working for the project by finding soldiers from the 34<sup>th</sup> Colored Infantry Regiment, mainly comprised of Low Country freedmen, from a primary source and filling in all the information I can find into a database. When I have finished, Dr. Fields-Black is going to submit my index to a bureau to fill in any information not typically publically available in order to both pay tribute to these soldiers, and to fill in the gaps of missing ancestry for their living kin.

Working on this project allowed me to work on the foundations of what it is like to be a historical researcher, which is a viable career path for me. One a more abstract level, my desired career is within the field of International Relations, and eventually International Law, but in order to be successful in that field, a strong base and understanding is needed which I was able to start building during this internship.

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Cullen Wells - Creative Writing '17 W.W. Norton & Company, Inc. New York, NY Working at W.W. Norton in New York City was one of the most fun and rewarding experiences of my life. At Norton, I was the Sociology Editorial Intern, and I spent much of my time dealing with copy-editing textbooks and their accompanying online materials.

This experience exposed me to both online and print publishing, which was great because most interns only get to see one side. I acquired skills, like HTML coding, that I never thought I would learn.

Most importantly, this internship taught me a lot about the publishing industry, which I hope to join once I graduate. Norton had many great events for interns to learn about what goes into publishing a book at Norton at every step of the process, from editing, to art selection, to legal or copyright issues. These events gave interns a greater understanding of the diverse components to publishing. Another event involved networking with the interns and representatives of all New York's major publishing houses. This allowed us to see how other publishing houses ran their business and offered many great opportunities to meet more people in the industry.

This summer, I had the opportunity to work at an amazing company and live in an amazing city. This experience will be very helpful when I start applying to publishing jobs in the spring.

Daya Lee - Psychology / Human Computer Interaction '17 TravelWits, LLC Pittsburgh, PA This summer, I interned with TravelWits, LLC. Working at a company outside from school research labs, I had some real, hands-on experiences in working with a team of designers, developers, and executives. Since it was my first user experience internship, it became the first stepping-stone for the path to becoming a UX

researcher/designer.

During my internship, I was able to accomplish a multitude of tasks. I monitored and analyzed user sessions to identify the main user flows and areas where the navigational flow can be improved, and also generated hypotheses for why conversion rates are low and conduct A/B testing for validation. With these experiences, I was also able to design and conduct multiple exploratory/usability studies and present my findings, and provide design suggestions and prototypes for the website, especially the checkout page.

I am currently taking a design studio class, and it feels great whenever I see areas that I can add some of the things I have learned through experience to my projects. These projects are going to be put in my portfolio, which is going to be another stepping-stone to my career. The company also offered me a part-time paid job when the internship period was over, so I am continuing to work there as a part-time UX researcher! Without the SIEF, I would not have had this wonderful internship experience, and I sincerely appreciate the opportunity that the school gave me.

Emily Vokach-Brodsky - Decision Science '17 CMU Social & Decision Science Dept. Pittsburgh, PA This summer I interned with the CMU Social and Decision Science Department in the Medical Decision Making Research Lab. I worked on a project called POWER, which was funded by United States Agency on International Development (USAID). This research looked into the decision processes of young women in

Sub-Saharan Africa regarding HIV risk. We studied four processes in particular: the decision to (or not to) participate in unprotected sex, get tested for HIV, and to initiate and adhere to an HIV-prevention medication called pre-exposure prophylaxis.

This internship met at the intersection of my two majors—Decision Science and International Relations and Politics. As a graduating senior, I am looking into graduate programs that combine behavioral science with global health. This research allowed me to have hands-on work in medical decision making research, which helped better understand what graduate programs would best suit me and how future studies could apply to careers within the field of global health.

Since beginning the experience, I believe I have a better grasp on applications of Decision Science. I have also seen practical applications of the combination of my studies and interests, and look forward to completing my honors thesis, which is a continuation of this research. The Summer Internship Experience allowed me to develop my academic interests and make connections with CMU faculty.

Lydia Kim - Technical Writing / Communication '18 Art is Life Studio Dallas, TX Over the summer, I was fortunate enough to intern at an art studio in Dallas, Texas called Art is Life Studio. My supervisor has an extensive background in journalism, so I was able to learn about news writing and the inner-workings of a newspaper. The internship definitely helped me prepare for my

courses this semester, as I'm taking News Writing and Document Design, which both involve topics that were important for my work over the summer. As an intern, I created a media list and helped contact local media for exposure. I also interviewed various artists and patrons of the studio and wrote profile pieces for the studio blog. I wrote press releases as well, especially for art openings and receptions. My big project for the summer was to create a press kit which could be given out to media. I designed the kit and wrote most of the information, then helped send it to local media outlets.

This internship was extremely helpful because I previously had no experience with marketing and press. Although I've learned that journalism might not necessarily be my calling, I did really enjoy the press aspect of the internship. I am now looking into marketing internships for next summer, and hoping to learn more about how to communicate with the press and write more press releases.

Maria Navarro-Gutierrez - Professional Writing '18 Breakthrough Collaborative Santa Fe, NM This past summer, I interned at the Breakthrough Collaborative in Santa Fe, a national college-access program for high achieving, low-income students. Throughout the summer, I taught ACT Science, Literature, and College Prep to approximately 120 high school students, teaching each grade for one or

two weeks at a time. As someone who is interested in entering the field of education, either as a teacher or in some other capacity, this internship was invaluable. I was in charge of my own classes and lesson plans, which I submitted to the program's director who acted as my mentor for feedback. However, before I even entered the classroom, I participated in a very intensive two-week training session during which time I learned things like classroom management, active participation, lesson planning, as well as a myriad of other ways to engage students in ways that were both fun and would help them retain what they were learning.

This summer was the absolute best of my life. While I really do value the things I learned about teaching in a multicultural classroom, teaching in a way that is engaging and fun, and teaching students who face a wide range of difficulties at school and at home, I think what I most appreciated was learning how to build an intensely close-knit community that is centered around, and perfectly executes, the idea that learning is fun.

This new perspective on teaching and community is something that I know that I will carry into my next experiences as a leader and a student. Though I don't know yet if I want to teach as a career, I know I definitely want to work in the education field, specifically with the issues surrounding low-income minority students, perhaps in policy or curriculum. I am extremely grateful that I had this experience this summer, and receiving the Summer Internship Experience Fund was extraordinarily helpful.

### Peter Boyland – Undeclared '19 Language Technologies Institute Pittsburgh, PA

I worked for Jesse Dunietz and Lori Levin at the Language Technologies Institute during the summer. Language Technologies had been an area of work that could potentially be a career goal I would enjoy, and I was interested in seeing whether the smaller-scale,

day-to-day work would still be interesting, or whether my attraction to the area was merely surfacelevel. The most surprising thing about the internship was how much work could go into a relatively simple decision - I have learned from that to allocate more time than may seem necessary especially to non-concrete tasks like discussions and decisions.

I was able to learn how to use specific software, but more importantly, what sort of argumentation is standard in the area, as well as a general knowledge of a way that research work happens. Since the internship, I have already found the exposure to a linguistic frame of mind to be useful in a class I am taking this semester, and I anticipate being able to use the skill of linguistic argumentation to be more immediately effective in future research work. Overall the Summer Internship Experience Fund was very useful in that it allowed me to take this unpaid internship to simultaneously be useful to the LTI and to learn the sort of work done in that area.

Rebecca Kern - Information Systems '18 DoInBound Hermitage, PA Dolnbound is a small company that gives new startup companies a framework to break down the business development process into small, manageable steps. At Dolnbound, I worked as a Software Development Intern throughout the summer. I had the opportunity

to see how the startup company works by joining them for weekly team development meetings and through the use of online communication tools.

My favorite part of the job was working to build out a client-facing rails application. I was able to apply many of the skills I learned in my classes to create a system that helps clients identify their company goals and their plan of action. The project went exceedingly well and was praised not only by my boss, but by other startup companies that were planning on using something similar to my prototype.

The Summer Internship Experience Fund allowed me to take on this position that I would not have been able to do without financial support. I learned so much about working in a team, doing research, and applying my current knowledge to new projects. I loved taking skills that I knew and using them to help create a new system. These are skills that I am going to be able to take with me no matter where I work in the industry and the time that I got to spend with DoInbound was truly invaluable.

Sally Zhao - Information Systems '18 Homij San Francisco, CA This past summer, I interned at Homij as a UX Designer. I just recently transferred to the Information Systems major, so this internship gave me insight into the field. I worked on developing wireframes and created a prototype app as the minimum viable

product. From there, I conducted user studies to garner feedback from potential users, which was directly applicable to my double major in Human Computer Interaction. I was surprised to have the

opportunity to work on the business side as well, but was glad to since I could apply what I learned from previous classes.

From this internship, I've developed more in-depth user design/experience skills which I predict will help me in future projects, as well as in classes. The Summer Internship Experience Fund gave me the opportunity to work in a field that I otherwise would not have been able to. With a passion in user interface, this internship was the best opportunity for me to develop my skills. With the stipend I received from SIEF, I was not concerned about finances or whether or not I should take the offer.

Thomas Goode - Statistics '17 UPMC Dept. of Emergency Medicine Pittsburgh, PA My internship at UPMC provided an excellent opportunity to pursue research and use data from the field of emergency medicine. As a statistics major who is interested in pursuing an application of my major to prehospital medicine, this internship advanced my

career goals by enabling me to practice and gain experience with valuable tools, data, and methods necessary to secure such an application.

I was very surprised by how much data is currently not being used to its fullest extent; during my internship, I accessed, visualized, and analyzed data that had not previously been used outside of some minor academic papers. I can infer that the field of emergency medicine, being a relatively new field of research, contains many hidden datasets that could be valuable with the proper analysis and visualization.

The SIEF enabled me to pursue an unpaid internship that advanced my knowledge and allowed me to gain valuable skills and experience that I would otherwise not have access to. Thanks to the SIEF, I was able to dedicate a significant portion of my time to this research and gained qualities that will undoubtedly benefit me in the future.

# **Mellon College of Science**

Akua Oppong - Biology '19 CMU Summer Research Institute Pittsburgh, PA This summer I participated in the Summer Research Institute (SRI) at Carnegie Mellon University. By participating in this program, I started to think globally about if what I was doing would benefit the future of America. My research was on protein-protein

interaction, and how this discovery one day will help benefit opioid addiction.

I had the chance of working/meeting the Qatar students. It was really rewarding having them explain how different their life and college life was in their country. With my many experiences this summer, I hope to apply what I have learned conceptually and practically to my classes for the rest of my CMU career. Also, being in the lab helped to show me that it's not just research but a lot of planning, reading scientific papers, and troubleshooting that contributes to the final product.

Overall, I could not have benefitted from the SRI program as much as I did without the SIEF. I think that by receiving this it has opened my eyes to take advantage of everything around you.

Allison Black - Mathematics '19 National Museum of Mathematics New York, NY This summer, I interned at the National Museum of Mathematics in New York City. Through this internship, I was able to develop my communication skills and become more comfortable interacting with new people. After this internship, I realized I do not

want to pursue a career working in a museum because even though interacting with visitors can be very rewarding and interesting, oftentimes you end up explaining things multiple times, which can be frustrating.

This internship was not what I was expecting in that some of the things the program coordinator said would happen in the interview did not actually happen in the internship. From this, I have learned to ask more specific questions during interviews to know exactly what to expect, and also to ask if there is someone who previously interned that I could talk to. As a result of the miscommunications about the internship, I also gained experience in communicating my frustrations in a polite and professional manner.

Overall, this internship was an enjoyable experience. I have met many new people and made contacts with the employees there. I was also able to gain work experience related to both my majors, mathematics and French - through working at a museum of math and by communicating with some French visitors.

Andrew Liu - Mathematics '17 AEDreams, Inc. Pittsburgh, PA This summer, I interned at AEDreams, Inc. I mainly worked on developing extra features for their Turtlemail product, a product designed to entertain small children by printing out various paper-based activities for them to complete such as reading letters

sent by family members, and various counting, basic arithmetic, reading, and writing exercises.

I helped develop and improve the consistency of the software compatible with the Turtlemail printer, as well as helped research some other technologies that were thought to be of interest for the future of the product. Writing this code helped my career goal since I wish to be able to analyze data and develop software that can perform some data analysis in the future. From interning at AEDreams, I have deepened my knowledge of Javascript and React.js, the two primary languages we used. In addition, I have improved my ability to communicate technical details to my co-workers, which will greatly benefit me in the future.

Overall, I believe that my time at AEDreams was very enlightening. It showed me the differences between coursework coding and coding used in the field, as well as the industry standard for producing robust code used in everyday products. I think I benefitted greatly from interning at AEDreams, and greatly appreciate the financial help that the SIEF provided me.

Cassidy Smith - Physics '19 CMU Summer Research Institute Pittsburgh, PA This summer, I worked at the Summer Research Institute, which is part of Carnegie Mellon University, under Dr. Campanero for the Puthenveedu Lab.

I investigated the interactions between two proteins (GST-DOR and His-TC10) with a small group of peers. I

learned both laboratory techniques (such as sterile technique, plasmid manipulation, protein extraction, SDS-PAGE) and necessary communication skills for scientists, like oral presentations on research as well as creating effective presentations. Such skills will be helpful in the future as being able to convey one's ideas clearly and persuasively is something that is crucial to securing jobs and internships.

Reflecting back upon this summer, I was surprised by how much responsibility I had to take on. This research experience was valuable to me as someone in the Mellon College of Science considering a future in research. This experience made me realize that while I enjoy biology research, I truly desire to do research in my own field, physics, because I am more interested in that than in biology. Receiving the Summer Internship Experience Fund made this unpaid experience much more affordable and allowed my family and I to save money for other college costs.

Debarati Bhanja - Biology '19 Keck Graduate Internship Claremont, CA This summer, I completed an undergraduate research internship at Keck Graduate Institute. During the summer, I was assigned an individual research project, which I planned, executed and analyzed on my own. I also mentored a high school intern by

teaching her lab techniques, experimental set-up, data analysis, and helping her with oral and poster presentations.

The project that I completed was trying to develop a combination drug therapy for Mesothelioma, which is a rare and resistant form of lung cancer. I tested multiple drug combinations in mesothelioma cell lines to see if adding two drugs together provides a treatment benefit. In order to work on this project independently, I went through extensive training in which I learned several new techniques and research methods such as cell culture techniques (growing the cell lines, cell plating, cell counting, drug incubation), nanoparticle synthesis, data analysis and data presentation. This internship has aided me in achieving my career goals because research experience is heavily favored in medical school applications. The skills that I have learned will help me in other research experiences that I hope to pursue in the future.

I am so grateful that I had this opportunity to learn and work at Keck Graduate Institute, and I thank the Carnegie Mellon Summer Internship Experience Fund for enabling me to do so. Students have so many opportunities to study worldwide and I'm so glad that I acted on them early after my freshman year.

Evan Harber - Physics '19 Georgia Tech Institute of Robotics Atlanta, GA This past summer, I had the opportunity to spend 11 weeks at Georgia Tech's CRAB Labs participating in research dealing with the colonial activities of ants. The team I worked with analyzed how ants interact and accomplish tasks, such as digging a tunnel or

moving food into the colony. Then we used this information and applied it to robotic interactions. As a part of this internship I was able to get more practical knowledge as my mentor and I redesigned the robots used in the experiments to test the information collected by the live ants. I was also able to design parts in solidworks, help design and build the circuit boards, construct the robots, and program certain responses from the robots. All of this work brought more practical knowledge to my Applied Physics degree as well as providing a strong introduction to my robotics minor.

This summer internship greatly impacted my plans for the future. Before the summer started I was considering a job in academia. However, over the summer I realized that although this internship was a valuable experience, it was not a career path that I wanted to follow. The Georgia Tech lab, although interesting, did not provide the high stress environment that I need. For future internships, I will attempt to find a job related to science in industry or at least in a faster paced area of research.

Joseph Park - Biology '17 Tufts University Medical School Boston, MA For my summer internship experience, I worked under the Tufts Medical Center, in the Ear, Nose, Throat (ENT) Department. During my time at Tufts I was under the mentorship of the Director of Facial Plastic Reconstructive Surgery, but I also shadowed

the other physicians in the cohort as well as the resident team in training. My daily activities included shadowing the residents and physicians in a clinical office setting, observing several surgical operations in the operating room, and attending educational conferences and lectures.

Thanks to my summer experience, I have a better picture of what future medical training and practice will be like, as well as what is expected of me as an aspiring physician and what this career entails. One skill I was able to observe and start to develop is understanding how the hospital system works in reference to how other staff such as nurses and physician assistants play a role in medical care, as well as the general methodology that physicians use to treat their patients. I plan to

continue to understand the overall medical care system better as I enter medical school in order to best treat future patients and utilize my available resources as best I can.

Overall, being a recipient of the Summer Internship Experience Fund was immensely beneficial for me. This not only further solidified my desire to pursue medicine because of the fascinating work that I witnessed, but will also allow me to speak more confidently to medical admissions committees on any past exposures to the field of medicine, proving that I know what to expect and have a genuine desire for the medical career.

Lauren Nazzaro - Biology '19 CMU Summer Research Institute Pittsburgh, PA This summer, I participated in the Summer Research Institute through Carnegie Mellon University. I am a biology major, but I do not know what I plan to do as a career. Doing research not only gave me experience working in a lab, but it also helped me see if I liked

doing research and the sort of topics I might be interested in. The research I did made me more knowledgeable about certain topics in biology as well.

The most surprising part of the program was the amount of work that goes into getting scientific results. Before this, I do not think I really understood how hard, and often repetitive, research is. During the summer, I did a lot of the same processes every day, but by the end it actually did produce some results. So I know now going forward into new research that things might not work and some processes might need to be repeated. Despite these often frustrating qualities, these topics of research are so important and so interesting, they make doing research worth it.

Receiving the Summer Internship Experience Fund really helped make my summer better. The SIEF reduced all of my costs enough so that I felt more comfortable with the amount my family was spending this summer for me to get this experience.

Maegha Singh - Chemistry '17 AR Pharma Woburn, MA This summer I interned at AR Pharma, a small biotech startup in Massachusets. Through this experience, I explored my interest in biomedical research and in applied science. As a physical science major planning on attending veterinary school, I wanted to see how I

could apply the theoretical background and laboratory skills I have gained through classes at CMU to solving real world problems.

I believe the research skills gained through this experience will serve me well in the future. As a veterinarian, I would continue to use fundamental science principles and an interdisciplinary approach to improve our understanding and prevention of serious diseases. With the rapid emergence and spread of zoonotic diseases like Ebola, salmonella, and influenza, for example, understanding pathogenic interactions with animal hosts is essential to help prevent the spread of disease between animals and into humans. As a clinician-scientist, I could apply my knowledge of animal pathogenesis to figure out how to control the global spread of new zoonotic diseases. In addition to treating those already affected by disease, preventative measures like monitoring long-term trends in disease in livestock or vaccinating wildlife vectors would help to reduce illness in both animals and humans. With the clinical background to understand and perform preventative

procedures and the research expertise to develop better methods of disease prevention, I believe that I could have a huge impact on animal and human health.

Overall, I am so grateful to the CMU SIEF fund for allowing me to explore the world of biotechnology, applied science, and industrial research. This experience has been enlightening and will definitely influence my career as a veterinary researcher.

Martha Nkangabwa - Biology '17 UPMC Pittsburgh, PA This past summer, I was a research intern at UPMC in the Heart and Vascular Institute's Ultrasound and Molecular Imaging Therapeutics Lab. This summer, my goal was to gain more independence in terms of conducting my project and troubleshooting obstacles

within my research. In addition, I sought to enhance my ability to write and speak scientifically about my results to a larger audience.

My long-term goals are to become a pediatric surgeon and also conduct some research utilizing stem cells for regenerative medicine. This internship allowed me to really flesh out what it takes to pioneer one's own project. I had to conduct extensive research by reading prior published papers, synthesize series of hypotheses, and develop a plan of experimentation to support my hypothesis. Although the research I conducted is not what I wish to do long term, it provided me the platform to build the foundation for future research projects I wish to implement. I think the most valuable thing I learned, and I am still working on today, is learning how to explain and write my scientific findings in such a way that someone outside the lab can understand as well.

Being a recipient for the Summer Internship Experience Fund is what allowed me to stay in Pittsburgh this summer to conduct research. This allowed me to build a network at UPMC with not only Ph.D researchers, but also current medical students who have been assisting me in my journey to become a doctor as well. It allowed me to solidify that I do not want to pursue a Ph.D but rather just my MD.

Muchen (Ryan) Zhou - Mathematics '17 EEme, LLC Pittsburgh, PA This summer, I worked at EEme, LLC as a Data Scientist Intern. I was able to design a predictive model for residential electricity usage with different time intervals to support the electricity trading system. By the end of summer, the model has

become pretty accurate (above industry average).

This internship has significantly influenced my long-term career goal. Before this summer, I was hesitating between seeking software engineering jobs or data scientist positions. But through this internship, I realized that data science is something I have more interest in. Moreover, during the internship, I worked with large datasets and solved real problems that I have not been able to during my classes.

Receiving the Summer Internship Experience Fund reduced my financial pressure so I could focus on working to the best of my ability. It also enabled me to take an unpaid internship that helped me to figure out my true interests.

Njairé McKoy - Biology '18 CMU Biomedical Engineering Dept. Pittsburgh, PA During my internship, I established a professional relationship with my advisor, Dr. Campbell. From our weekly meetings I have gathered a better understanding of what a PhD is good for in the biology world from research, to teaching, and even

giving speeches. Through him I was also able to see the background of owning a laboratory and also teaching at a high level.

This internship helped me learn and apply new lab techniques throughout the summer. In relation to my long-term goal, it has provided me with experience beyond the classroom as both the internship and my career goal involve lab work, stem cells, and muscles. The most surprising thing I had to learn was to take notes efficiently. Dealing with cells at such a microscopic level, it is even more important to pay attention to their details. I was able to learn how to do cell culture, a skill every biologist needs to have, as well as learn how to clean, kill, and stain cells so I can properly see them under the microscope.

These techniques and the other experiences I had over the summer will definitely help me to accomplish my future career goals.

Pirapat Max Rerkpattanapipat -Neuroscience '19 UPMC Emergency Medicine and Critical Care Pittsburgh, PA I am an aspiring doctor and this internship experience could not have been more helpful to me in confirming this aspiration and providing a first-person perspective into the life of a doctor. The passion and dedication I observed in every one of the faculty in the Emergency Medicine Department was quite phenomenal. My take-away from being around these

doctors and observing the numerous eye-opening cases while shadowing in the emergency room, is that to be a successful doctor you have to completely desire the profession, enjoy interacting with patients, and have fun with the science behind the job. This is truly something I want to dedicate my life to in the future, for now I can only imagine the encompassing satisfaction a doctor gets from knowing that they directly help improve the life of another human being. In addition to the observational aspects of this experience, this was also my first legitimate research project. Organizing and sorting through patient records, identifying non-artifact EEGs, and analyzing EEG patterns are some of the concrete skills I developed from this experience.

I am extremely thankful and honored to have received the Summer Internship Experience Fund from the CDPC. The fund covered my basic living needs over the summer and allowed me to go to work every day with a clear mind and eagerness to learn. I could not have asked for a more fulfilling summer to follow up my first year at Carnegie Mellon, and I owe a lot of this satisfaction to SIEF.

### Raahul Sriram - General MCS '18 UPMC Adipose Stem Cell Laboratory Pittsburgh, PA

This summer, I worked at the University of Pittsburgh Medical Center at the Adipose Stem Cell Laboratory. I worked in Dr. Kacey Marra's research laboratory on a project that would reduce MRSA, which is a variant of a common infection that patients who have surgery

acquire and is very difficult to treat. I learned how to culture bacterial cells and how the basis of an animal model works, through the use of a pig model. This helped me realize that I prefer basic science research over clinical trials, because I find it provides more of the intellectual challenges than those of clinical trials which seem similar to engineering.

I plan to carry my skills in culturing cells and bacteria, staining slides, and having a thorough understanding of how a project starts and ends into my next laboratory. I have decided that plastic surgery isn't a field that I would like to further explore in my career path, so I have decided to try my hand in another lab.

Although I might try to find an industry internship next summer, just to confirm how I feel about the industry, I think I'm set on academia and medicine. This summer research grant has helped me pinpoint my liking towards research and has helped winnow a vast bank of career paths into just a handful.

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Raunaq Chamdia - Chemistry '19 CMU Chemistry Department Pittsburgh, PA The work I have done over the summer allowed me to further advance in the field of chemistry. While currently applying for my master's degree in the field, this research will be an important milestone as it has laid the groundwork for my application and allowed

me to demonstrate my ability to cope in a laboratory.

This experience allowed me to be involved with a laboratory dedicated to research, and helped me understand the process of research more fully. Furthermore, the experience has allowed me to help out with my professor, Dr. Ly's, current project that will hopefully further advance our field of science. The process involved weekly reactions in testing a desirable synthesis route and product. While this may not have always worked, the group had a weekly meeting to brainstorm ideas to keep advancing the project.

This experience as a whole was very interesting, and something that I would continue in subsequent years if I had the opportunity. Thanks to the SIEF I was able to determine that this is the field where I want to aim to be after graduation.

Sharon Wu - Chemistry '18 CMU Mellon Institute Pittsburgh, PA With the support of the Carnegie Mellon Summer Internship Experience Fund, I had the opportunity to conduct research at the Ly Laboratory in the Mellon Institute this summer. The topic of my research has allowed me to explore my interests in the medical

sciences, as I have worked with others have started working on creating a rapid diagnosis system, using molecules developed in the laboratory.

Perhaps the most surprising aspect of the research was the welcoming environment. I was uncertain if I could live up to the expectations of the long work hours and ability to be independent. However, throughout the whole summer, I found that people in my group were very kind and helpful. Inspired by the hardworking people around me, I felt motivated to put my best foot forward. While it felt like a lot at times, my understanding of the importance of the research that could help millions of people worldwide made me eager to put in the effort.

It has been my first summer being away from home, and I have learned a lot about the research that I will continue to pursue for the next two years. I am truly grateful for the SIEF program, as it has encouraged my endeavors in obtaining meaningful experiences that I would not have been able to learn sitting in a classroom.

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Vineet Apte - Mathematics '19 Optimal Capital Strategies Beaverton, OR This summer, I interned at Optimal Capital Strategies in Beaverton, OR. Long-term, I see myself pursuing a career on the buy-side in either asset management, proprietary trading, or hedge fund management. This internship directly trained me for each of these roles

by exposing me to the investment research process. I have previously done investment research for the Tartan Student Fund, but professional research is much more in-depth and rigorous.

What I found to be very surprising is that the large majority of time spent managing a fund goes into portfolio management and risk analysis as opposed to researching individual investment opportunities. It turns out that the best managers are very good at these skills as they are necessary to consistently beat the market; my boss even recommended a few books for me to read about these topics. Without them, even the best researchers would lose money in the long-run due to statistical phenomena.

I primarily learned how to research oil and gas companies. I spent a lot of time reading about the industry and key metrics used to value oil companies. I also got to walk through the investment research process from beginning to end under the supervision of my mentor. This was a unique experience for me because he was able to identify my errors and biases that I wasn't previously aware of. Now that I am more cognizant of my research ability, I think I'll be able to better present myself in the future during interviews. The SIEF had a major impact on my internship. Without the funding I received, doing this unpaid internship would have been quite difficult for me.

# **Tepper School of Business**

Addison Nitto - Business '17 Thuzio New York, NY Interning at Thuzio in New York City was an eye opening experience. Thuzio is a leading Talent Procurement and Business-to-Business celebrity access company. This internship suited me well as it is my goal to break into the sports business world. While

Thuzio in general is a Talent Procurement company, there is a major focus on the sports industry. Being an Agency Relations Intern, I worked a lot with various different sporting agencies building and maintaining relationships with them. I was also able to gain valuable experience in regards to Agency relations as well as the processes of booking platforms for various different talent and sponsors. While I loved working at Thuzio, and with the platform they have created I plan on using it more so as a launching point to break into other companies in which I connected with this summer.

Much of the access I gained was a result of working in the middle of the most powerful city in the world New York City. It was great working in New York, however that would not have possible had it not been for the Internship Experience Fund.

Akshay Dajee - Business '18 Defoe Redmount Newport Beach, CA This past summer, I was able to work at a small investment bank, Defoe Redmount, based out of Newport Beach California. This firm focuses on helping small entrepreneurs grow their business. I eventually hope to work in an investment banking

division at a bigger bank, so having some experience in the industry definitely will help get my foot in the door.

As a summer analyst my roles included writing memos, creating templates, conducting market research, and making pitchbooks. Throughout my time at Defoe Redmount, I was constantly developing my Excel and PowerPoint skills which will be very useful and necessary when working for a larger corporation. I also developed my researching and analytical skills while trying to find and understand data in niche markets. Since it was a small firm working with small companies, a lot of the industries and projects were in niche markets so I needed to do a lot of researching and extrapolating.

Overall, being able to complete this internship has confirmed my interest in the industry which is great because now I know I am on my correct path. Most importantly, since I came from a different background, I would not be as competitive of a candidate as I am now without this internship. I am thankful for the fund and could not have done this internship without the help.

Michael Kalnas - Business '18 Forest Devices Pittsburgh, PA This summer, I interned at Forest Devices in Pittsburgh, PA as an Investment Strategy/Business Coordinator. This internship related to my long-term goals because I wish to pursue a career in venture capital or investment banking.

The most surprising part of my internship was just how unpredictable work is at a startup. My work would vary from creating investor slides to auditing the financial projects to researching strategic partners. I learned to be comfortable with the chaos, even as many different tasks piled up. This sounds like a similar experience to what I can expect from an Investment Banking internship, where large, pressing tasks can appear at a moment's notice. The principal solo project I worked on over the summer was clearly conveying the science behind our product to potential investors with little to no background knowledge. I went through about seven iterations of this slide deck and feel I learned a lot about Power Point communication along the way.

The Summer Internship Experience Fund allowed me to take this full-time internship. As a startup, Forest Devices did not have the funds to pay me to work full-time, without the SIEF I would have only been able to work there part-time. I would not have been able to be a full-time employee and gain the experience of being an active, principal member of a business team. I am very grateful for the grant I received and the experience it allowed me to have.

Michael Piroli - Business '19 Pursuit Sports Group Washington, D.C. I spent my summer working in Washington, D.C., with Pursuit Sports Group, an agency that works with the entertainment business. This financial consulting internship allowed me to apply all of the skills I have gained in the classroom to clients with real money.

During my internship, I was able to work with an atypical group of clients with high net worth which provided an interesting and enriching experience. I learned how to make the best investments for clients and have a better understanding about asset allocation. I was able to see individuals who have achieved roles of extreme success in the fields of sports and music, and that gave me new and unique experiences that enhanced my understanding and ultimate goals in finance, music, and being an agent for athletes or musicians in the future.

Simran Jobanputra - Business '19 Mabbly, Inc. Chicago, IL This summer, I worked at Mabbly, and it was an experience quite different from what I anticipated. Mabbly is a for-profit, digital marketing and consulting agency that helps companies rebrand themselves and improve their online and media presence in order to

both acquire more customers and maximize company profits. So, naturally, I expected to a lot of marketing, blogging, and learning about how to technically improve clients' marketing campaigns.

This internship confirmed my career interests somewhere at the intersection of technology and business, and convinced me that I wouldn't enjoy working in finance alone. As a result, I am interested in other areas including tech, design, and business. I'm not sure what types of careers

there are for this, but some things I have been brainstorming about include being an actuary, going into consulting (perhaps entertainment or technology), and maybe combining fashion and tech (especially with all the 3-D printing and new technologies in that department). I really want to see if I can combine my business and stats/machine learning curriculum with some human-computer interaction classes, because I think that is where I will find that intersection. I'm hoping I can get some help on exploring these channels to see what would be the most interesting thing for me to pursue later on.

Overall, I am extremely thankful for the Summer Internship Experience Fund. It allowed me to pursue something that I otherwise wouldn't have been able to, as the result of travel and meal expenses. I think more awareness should be raised for the fund, because it helped me be able to take part in this internships without worrying about the financials.

Stephen Gross - Business '18 Pittsburgh Pirates Pittsburgh, PA For my first full-time internship, I worked as a Ticket Sales and Service Intern for the Pittsburgh Pirates Baseball Club. As a life-long athlete, it has been a goal of mine to have an opportunity to work for a professional sports team, especially in my hometown

of Pittsburgh. The experience of working in the atmosphere of professional sports truly gave me an inner look of how the behind the scenes operations go from day to day and gave me a better insight on how I'd like to structure my long-term career goals.

The most surprising part of my internship was just how many young people were in the industry, and how few older people there were, which sent me a signal that it's often a stepping stone for people, not a very long term career choice. The specific skills I learned from the experience were in person and over the phone sales skills as well as secondary communication skills that will be necessary in any job. Additionally, I had an awesome opportunity to learn about how the ticket algorithms are made and how professional sport teams such as the Pirates mitigate/calculate risks. While these skills won't be directly applicable to many other industries, the underlying concepts of them are very important.

Overall, receiving money from the SIEF was a huge help to me. The experience I had was a very unique one that many people at CMU wouldn't even consider due to the low pay and specific industry, but I was very happy I had the opportunity. I got a better understanding of what my longterm goals should be and how I ultimately want to approach future internship applications and eventually begin my full-time career path.

Yiyi Zhao - Business '18 TMC Financing Oakland, CA This past summer, I worked as a Market Research Analyst for TMC Financing, the largest provider of SBA 504 commercial real estate financing in Northern California and Southern Nevada. I came into this internship with little to no knowledge about the SBA

504 program and commercial real estate loans, but through the projects I've worked on, and the people I have interacted with, I not only understand more about the company and what it does, but I also got to apply the knowledge and skills I gained in college to a real-world business setting.

After participating in the internship, I felt that I underwent a significant amount of personal growth and development. During the course of my internship, I learned that I value teamwork and collaboration in my workplace. Coming into my internship, I didn't give much thought to being the only intern in my department at TMC, but after several weeks, I found that working in a company with so few interns can be somewhat stressful and oftentimes lonely. I missed being able to communicate with other people in similar situations as me, and as a result, I had to tackle all projects by myself, without any input from any other people besides my supervisor. Thus, when applying to internships for next summer, I'll be sure to apply to companies that have more structured intern programs, with a lot of collaboration and teamwork among their interns.

Throughout the duration of my 10-week internship and this course, I have gained significant personal, institutional, professional, and leadership growth and development. Overall, I really enjoyed my internship, and I am confident that I will take the skills and knowledge I learned to succeed in my future internships and career.