McKearn Highlights

Northern Illinois University
University Honors Program
Spring 2019
Volume 4, Issue 1
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Huskie Food Pantry

This spring, the sophomore fellows wanted to show leadership through public service on campus and did so by hosting a food drive to fight hunger in our community. Items collected ranged from ready-to-make meals to toiletries and cleaning supplies. All of the collected donations were then given to the Huskie Food Pantry. The Huskie Food Pantry is a source of nutritional food, experiential learning, and service for the NIU community. As a non-profit organization, the pantry relies on the support of the NIU community through generous donations, volunteers, interns and university partners. Thanks to the Huskie Food Pantry, NIU students without a meal plan who are experiencing food insecurity are able to receive supplemental support at no cost to the student. The pantry is a fantastic resource on campus, as it is a welcoming and inclusive environment in which students can gather the support needed to alleviate hunger, make healthy food choices and focus more on academic success than meeting their basic needs. The McKearn Fellows felt a great sense of pride in contributing to their NIU Huskie Community.
NIU Students Push 3D Printing Boundaries To The Max

Latest collaboration pairs college students with RadMax Technologies, Inc. (RadMax)

Below is an excerpt from a feature in NIU Today

Surrounded by 3D printers in a space designed to challenge and inspire, Todd Durham feels at home. The mechanical engineering major from Genoa spends much of his time in the College of Engineering and Engineering Technology’s new Maker Space. He and his fellow classmates are on the cutting edge of a booming industry. Also known as additive manufacturing, 3D printing is an industry where design possibilities once dreamed of by engineers are becoming reality.

The experience students are gaining extends far beyond the lab. Essentially, through partnerships between the college and technology companies and businesses, they’re already doing the jobs their degrees would help them obtain. They’re tinkerers, inventors, designers meticulously molding objects from the ground up. Through the college’s latest collaboration, students are working to leverage the advantages of 3D printing. They’re working to reduce the parts count by consolidating components and producing lighter weight printed components for RadMax’s proprietary axial vane, rotary devices. RadMax is a research and product development company based in Spokane, Washington, and owned by Regi U.S., Inc.

“It’s just crazy to think I’m a sophomore in college and I’m actually consulting with a real company, helping them to develop an actual product,” said mechanical engineering major Todd Durham of Genoa. “It’s a real-world example of what we’re doing here.” Source: NIU Today

Shaping The Industry’s Future

Designing a broad line of rotary engines, compressors, pumps and gas expanders for civilian, commercial and government applications, RadMax aims to develop products that are smaller, lighter and more energy-efficient than incumbent technologies. That’s where 3D printing and NIU come into play. Under the direction of Federico Sciammarella, associate professor and interim chair for Mechanical Engineering, students are working to produce a 3D metal-printed fully functional RadMax refrigerant gas expander prototype. The expander will replace pressure regulation and other throttling type valves now used in air conditioning/refrigeration, natural gas, steam and other pressurized gas applications.. “It’s similar to an internship experience,” said Matt McCoy, a sophomore mechanical engineering student from Downers Grove. McCoy has worked alongside Durham, as well as senior mechanical engineering student Tommy Corbett of Genoa, on the project. “They’re colleagues in a sense,” he said of RadMax. “We’re working directly with the engineers at this company. We’re asking them questions. They’re asking us questions.” RadMax will compare the device NIU creates to those manufactured via traditional methods in the areas of production speed, cost, weight, parts count, strength, performance and overall efficiency. “The capability to 3D print will also shorten product development timelines by dramatically reducing the time and cost of manufacturing and testing new concepts and designs in current and future RadMax devices,” said Paul Porter, RadMax’s chief technology officer.
It’s all about understanding the role 3D printing can play in RadMax’s long-term manufacturing strategy. Students are shaping the industry’s future. “I think the fact the students have the flexibility and freedom to explore the technology allows us to explore the boundaries,” said Sciammarella, whose global research in metal 3D printing helps bring these real-world opportunities to students. “That’s been our goal all along with the Maker Space, to let them have a place where they can grow and learn and explore.”

**3D creations find homes elsewhere**

Since the Maker Space opened in 2017, students have designed and 3D printed items specifically for NIU, such as plaques, a broken part of the scoreboard at Huskie Stadium and parts to help make the OneCard readers in campus laundry rooms accessible to people with disabilities, and elsewhere. Another future project involves a partnership with the McHenry County Historical Society to 3D print missing parts of antiques and other historic objects for display. “I thought it would be a great opportunity to highlight the past with new 3D technology,” said Kira Stell, curator for the McHenry County Historical Society, who intends to put the students’ 3D creations—a one-room school hand bell, a candle stick holder and a tin lantern—on display in May at the museum. “I will have the original artifacts on display, and the public can touch the 3D replica,” she said. The work Thomas Corbett has done as a leader in the Maker Space has helped distinguish him as he pursues a Ph.D. program. “Everyone has a great GPA,” he said. “It’s nice to also have the physical hands-on experience and develop a set of skills.” The collaboration with RadMax is expected to run through 2019. RadMax’s military and aerospace consultant James Metzger came up with the idea for the NIU collaboration as he promoted additive manufacturing to reduce parts inventory and weight, while enhancing field readiness of military equipment. “This collaboration will lead to new and innovative products not possible with traditional manufacturing that are stronger, lighter, and more reliable,” he said.

“**This article was shared across Facebook from NIU CEET’s page and the Northern Illinois University page. After the article was released, it became really popular and I had people around campus, who I’ve never talked to before, approach me and ask if I was Todd Durham and how they saw the article that I was in. It definitely was a surreal experience that put the projects that I work on in the research lab really into perspective. I didn’t realize the scope of all the work that I do because it becomes a daily occurrence for me but is ground breaking for those outside of that lab.”**

— Todd Durham, sophomore McKearn Fellow

Steel part that was printed using a SLM (Selective Laser Melting) machine at SJTI in Rockford, IL. SLM is a form of additive manufacturing (3D printing) that can be used for prototyping and production parts.

McKearn Fellows Matt McCoy (far left) & Todd Durham (far right) with other 3D printing students
For The Love of Animals

Kylie Zawisza

During winter and summer breaks, Kylie spends her time working at the Kankakee County Humane Foundation (KCHF), her local nonprofit animal shelter in St. Anne, IL. KCHF is a no-kill shelter that is home to anywhere from 50 to 60 animals at a time. Kylie began working there her senior year of high school and her experience with neglected and abused cats and dogs spurred her interest in veterinary medicine. As a kennel assistant, she is responsible for a wide range of tasks, anything from cleaning kennels to administering medications to showing dogs to potential adopters.

It is hard but rewarding work. All the dogs and cats living in animal shelters are deserving of good homes, but often get overlooked due to their breed, age, or simply for ending up at the shelter. Many people view shelter dogs as dangerous or undisciplined and are hesitant to adopt them, instead opting to get their pets from established or home breeders. In reality, the dogs that end up at KCHF are survivors. Their only crimes are often being mistreated by the humans that are supposed to love them unconditionally. The Kankakee County Humane Foundation offers these animals another chance to find their forever home. Besides the animal shelter, Kylie also works at Springbrook Kennels, a boarding facility in Wilmington, IL. Their slogan is “A Vacation For Your Pet and Peace of Mind For You” and it certainly lives up to its reputation. The dogs and cats that stay at Springbrook are often treated better than most humans with their homemade foods, countless treats, and infinite love from their owners. At Springbrook, Kylie spends her time taking care of these pampered pooches and comforting their concerned parents. When she’s not working at KCHF or Springbrook Kennels, Kylie spends her breaks with her own household of pets.

“In reality, the dogs that end up at KCHF are survivors. Their only crimes are often being mistreated by the humans that are supposed to love them unconditionally.”
Active Minds in Washington, D.C.

Cassandra “Cass” Kamp

Active Minds, founded in 2003 by Alison Malmon, is a national nonprofit that empowers students to change the conversation about mental health and suicide prevention. This organization raises awareness, shares resources, and inspires action. They are dedicated to saving lives and to building stronger campus communities. “Active Minds emphasizes education, research, and advocacy regarding all things mental health.” In March, Cass attended the Active Minds Conference in Washington, D.C. During the conference, Cass attended a myriad of educational workshops and sessions. The subject matter she attended included the following:

• The difference between successful and unsuccessful social movements
• How faculty can adopt a healthy mental health campus culture
• The media portrayal of mental health
• Greek life’s role in mental health culture

“I was so blessed to have the opportunity to learn about mental health on such a great scale! I learned the value of advocacy, the power of a unified effort, and above all, that we can make a difference.”
NIU Supermileage Team Wins International Competition

“Champs earn best placement in team’s 10-year history” — NIU Today

The NIU Supermileage team took top honors at a recent international competition in California when the gasoline-fueled vehicle it created achieved a whopping 1,525 miles per gallon. That’s nearly the distance from DeKalb to California—all on a single gallon of gas. The team bested 27 competitors from throughout the world, including top teams from California Polytechnic University, Milwaukee School of Engineering, University Laval of Quebec, Brigham Young University and the University of British Columbia, at the 13th annual Shell Eco-Marathon Americas. The competition took place April 3rd—6th at Sonoma Raceway. The following is a snippet from the team’s NIU News Room’s article: “NIU’s Supermileage team earned first place in the Internal Combustion Engine Prototype category, the team’s best placement in its 10 years of existence at NIU. The Shell competition pits teams of students throughout the world against one another. The students design, build and drive single-occupant, ultra-fuel-efficient vehicles in an effort to create the most energy-efficient car. It takes talent, time and ingenuity to hand-build the Huskie Rocket. Team members work from the ground up, starting with in-house designing all the way to machining and fine-tuning. “These students really epitomize the capabilities and high quality of our students in engineering. They are extremely dedicated,” said Dean Donald Peterson of the NIU College of Engineering and Engineering Technology. In its eighth year at the Shell competition, the team already had a reputation as a successful team, but the championship took members by surprise. In 2016, the Rocket and several of the team’s members were featured in a Shell commercial with Jay Leno to promote the Eco-marathon. And this past summer, the team won second overall with its best-ever combined score, as well as the Endurance Award for the second year in a row and the fuel mileage prediction award, at the Society of Automotive Engineers Supermileage Competition in Marshall, Mich. The NIU vehicle recorded an astounding 1,888 miles per gallon—a team record—at that competition.”

“As vice president, I worked between the president, the driver, and other team members to ensure that we had the tools and strategy necessary to succeed on and off the track. I also spent a lot of time designing, analyzing, and manufacturing components for the Supermileage vehicle prior to and during the competition.”

-Matthew “Matt” McCoy
South by Southwest (SXSW) is an annual conglomerate of film, interactive media, music festivals and conferences that take place in mid-March in Austin, Texas. SXSW dedicates itself to helping creative people achieve their goals, whatever they may be. At SXSW, the sophomore cohort entered a world filled with up-and-coming technological advances, startup ideas, digital trends, conferences, and keynote speakers, all while networking with professionals in their fields.
Alexandra “Allie” Karnuth

At the SXSW Conference this year, Allie had the opportunity to attend several sessions relevant to her career goal of working as a pediatric oncology nurse. She found these sessions to be not only educational, but also very exciting as she looks forward to her future work in this field.

The first session Allie attended discussed all the breakthroughs that cancer saw in 2018. Some of the more interesting and exciting breakthroughs included developments in immunotherapy and liquid biopsy. Immunotherapy utilizes the body’s own immune system to fight off cancer from the inside. This can be done a number of different ways. The first is by introducing man-made immune proteins into the body; these proteins can be designed to attack specific cells in order to ensure they are only seeking and destroying cancer cells and sparing healthy cells – something that older forms of cancer treatment were not able to do. Another is a type of immune inhibitor that prevents immune cells from stopping at their usual checkpoints, and instead moving on to directly attack cancer cells. Finally, the intervention that she found to be the most interesting was cancer vaccines. Essentially, cells designed after the cancer cells infecting the patient are injected into the body to train its immune system to fight off said cells, much like a flu shot, but for cancer. These breakthroughs are exciting for cancer patients but also very exciting for healthcare providers in the cancer field. These new treatments will allow patients to receive the same benefits as they do from chemotherapy and radiation therapy without the harsh side effects that treatments such as those generally offer. This means that both patients and nurses can expect more positive hospital visits, better psychosocial outcomes, shorter recovery times, and more positive prognoses. Allie is very excited about these new advancements and what they could mean for the future of cancer treatment and oncology nursing.

Another session Allie attended discussed a model of care that focused on the “whole-person experience.” In Allie’s nursing courses she has been learning about the importance of caring for the entire patient, and not only focusing on curing the patient’s illness. In cancer care this is specifically important because of the life-altering effects cancer diagnosis, prognosis and treatment can have on a cancer patient and their family, especially when that patient is a child. The specific method of care being discussed was the CaLM Care Model. CaLM stands for Cancer Life reiMagined and is designed to ensure that cancer patients and their families are accompanied by a strong and supportive care team throughout their treatment journey that focuses not only on curing the patient’s cancer but also addressing every other physical and emotional need of the patient and their family. The CaLM Care Model includes: spiritual care, mental health support, fertility preservation, integrative therapy, genetic counseling, nutritional support, palliative care & symptom management, care coordination, fitness & physical therapy, job & legal counseling, and financial counseling. These types of care models affect nurses the most because they are the health care provider that works most directly with the patient and their families, developing an open and caring relationship with them.
Allie Karnuth Continued...

It is the job of the nurse to ensure that every need of the patient is being met, no matter how big or small that need may be. Learning about methods such as these help to prepare Allie for her future as a nurse, especially in the field of oncology. The final pediatric oncology session that Allie attended was by far her favorite, as it specifically targeted pediatric oncology nursing techniques and new interventions that are being developed to aid in the planning stage of pediatric oncology nursing. This session discussed the use of an online interactive animation tool “Imaginary Friend Society” (IFS) in nursing care. IFS utilizes animation through videos, video calling, and virtual reality. IFS has developed several videos discussing topics related to cancer such as defining what cancer is, dealing with your cancer diagnosis, explaining MRIs and other cancer treatments, and dealing with the effects of cancer treatments like feeling sad and losing hair. By utilizing animation, something that kids enjoy and can relate to and a language that kids can understand, IFS is able to bring these big medical terms and ideas to a level that isn’t so scary or confusing for children going through cancer treatment.

The video calling that is offered by IFS allows a nurse to talk directly to a patient disguised as one of the imaginary friend characters. The child will think they are talking to their selected imaginary friend over video call, while they will really be talking to the nurse who is in the other room on the other end of the call. The virtual reality aspect of IFS allows pediatric patients to seemingly place images of their imaginary friends in their room so that the friends can be there for the patients to calm their nerves and support them before a treatment. These animation tools are extremely useful when dealing with pediatric patients, as the information and terminology thrown at them can be extremely overwhelming and confusing. By utilizing tools such as these, pediatric oncology nurses can ensure their patients are comfortable, one of the key concepts in nursing that Allie has been learning about in her classes. SXSW was an excellent experience for Allie, where she was able to learn new and exciting things about pediatric oncology and better prepare herself for her future as a pediatric oncology nurse. She can’t wait to continue her nursing education here at NIU, and attend more events like these to energize her for what’s to come.
In many ways, this is reminiscent of the skepticism of automated elevators in the 1970s. No matter what people believe, fully autonomous vehicles will be here in only a few short years.

Film Festival

SXSW offered many interesting events to attend but one of the most exciting components of the festival was the film aspect. Throughout the week, films of comedy, horror, and non-fiction were screened to all kinds of audiences. Some of the most interesting documentaries were about human genome editing, the founder and backstory of Theranos, and autonomous vehicles. The Inventor: Out for Blood in Silicon Valley discussed the rise and fall of Theranos’ CEO and founder, Elizabeth Holmes. She created a company, Theranos, in which it claimed to be able to test blood in very small samples she called the “nanotainer.” In reality, Theranos was using competitors’ industrial machines to obtain accurate results or faking results altogether. The company was able to do this for multiple years, all while tricking Walgreens into a contract and bringing in more than $724 million of capital funding. The documentary was very thorough in finding the root cause of these issues and also mentioned the woes of funding startups in Silicon Valley. Additionally, the CEO of Theranos, Elizabeth Holmes, is now facing multiple counts of fraud and 20 years in prison. These films were very informative and discussed important topics in a way that reaches a larger audience. These films may not have all the answers, but they began meaningful conversations that may not have occurred without them.

Ethics of Autonomous Vehicles
Matt McCoy

One of the main topics discussed in many of the technology and engineering sessions at SXSW revolved around ethics and the governing of ethics in technology. The most notable discussion around this involved the idea of autonomous vehicles and the ethics of deploying them without a 100% guarantee that they would not harm human life. Throughout SXSW, many documentaries were shown, and panels were held discussing the ethics of autonomy. Alex Horwitz’s documentary Autonomy looked at the early development of autonomous vehicles as well as the debate around their potential to cause harm. It was interesting to learn about the origin of these vehicles, created in the early 1970s by two competing scientists from Germany and Japan respectively. The United States didn’t get involved in the race to autonomy until 2004 because larger automotive groups didn’t see the value in these technologies until very late in the development process. Defense Advanced Research Projects Agency (DARPA) created a challenge to develop self-driving ground vehicles in which the winning team received $1 million. Once this competition began, development of autonomous vehicles skyrocketed in the United States.

While many people object to autonomous vehicles, we learned that the fears associated with them are unfounded and sparked by sensationalistic reporting in the news. Most of the crashes involving these cars are due to human rather than machine error. We learned that 94% of all automotive crashes are caused by human error, and 6% due to machine error.
Health Care at SXSW

Peyton Whiston

One of the more interesting presentations that Peyton attended at SXSW was titled “Changing Lives with Palliative Care Innovations.” As someone interested in palliative care, Peyton found this presentation to be particularly interesting. The presentation consisted of a three-member panel and a moderator. Included on the panel were Dr. Debra Lotstein, the Director of the Comfort and Palliative Care Division at Children’s Hospital Los Angeles, Dr. Dulce Cruz-Oliver who is an Assistant Professor of the Palliative Medicine Program at John Hopkins School of Medicine, and Dr. Ab Brody, a professor at New York University. The panel discussed stories and challenges during their time in the palliative care field. Dr. Lotstein gave an interesting perspective as someone who has worked in a palliative care unit at a pediatric hospital. Throughout the panel, it was made clear that the focus of palliative care is focusing on what matters to the patient and their caregivers, not what is wrong with them. The speakers also discussed transforming the American health care system into a system that helps people to stay healthy, instead of just treating them when they are sick. Right now, many people, especially those who do not have health insurance, avoid treatment until they have a serious illness. In the future, the panel envisioned a health care system that focuses on activities and lifestyle choices that would help them remain well. The panel also talked about inequities in the current healthcare systems, particularly focusing on people facing either economic or language barriers. Dr. Cruz-Oliver actually worked on a research project that developed telenovelas to be used as a health education tool. The researchers found that after watching the telenovela Hispanic caregivers were more likely to be open to receiving palliative care support.

Additionally, throughout the SXSW conference, Peyton had the opportunity to listen to a variety of politicians speak. This included both Democrats and Republicans including Kevin McCarthy, Elaine Chao, John Hickenlooper, and Alexandria Ocasio-Cortez. Although this is not directly related to his future career, it is something that he is very interested in and it is an important part of being an engaged citizen. Furthermore, the government plays a large role in many aspects of healthcare, so it is important to be aware of plans that are occurring in government with regards to healthcare. One of the most interesting politicians that Peyton heard speak was Pete Buttigieg, the mayor of South Bend, Indiana, who is also running for President. Buttigieg made clear that despite having limited traditional political experience, he has been a Rhodes Scholar, a Harvard graduate, and a Navy veteran. He specifically addressed problems in the U.S. healthcare system, suggesting that everyone should have access to healthcare and suggested expanding upon the Affordable Care Act through a “public option.” Buttigieg continued discussing varied topics from foreign policy to social issues. Peyton enjoyed hearing a new voice in the political system talk about his plans for the future. It made him committed to staying active in his community well into the future.

“Peyton enjoyed hearing a new voice in the political system talk about his plans for the future. It made him committed to staying active in his community well into the future.”
SXSW was a great opportunity for Cass to learn about current hot topics in the field of health and human sciences. She was able to attend several events that focused on disability in media, the opioid epidemic, the importance of empathy, and the national cannabis movement. An interesting seminar Cass attended in the health care series was “Is Healthcare a Tale of Two Sexes?” The focus of the seminar was the difference in research and resources for men’s and women’s sexual health. In 2010, there were 26 FDA approved drugs for men with a sexual dysfunction disorder, yet there were zero FDA approved drugs for women with a sexual dysfunction disorder. Only 4% of all research funding is for women’s health, however 2% of all research funding is for prostate cancer alone.

“The seminar was eye-opening for me because of the notable evidence that healthcare is neither equal nor equitable for women.”

“This is eye-opening for me because of the notable evidence that healthcare is neither equal nor equitable for women.” As a woman and an individual going into a healthcare profession, it troubles Cass to see the levels of disparity, especially when a huge portion of those in the health care fields identify as female. It is important to Cass to include women in the healthcare conversations, to increase funding for women’s health research, and encourage women to take on leadership roles.

With a plethora of options to choose from at the SXSW Conference, Cass had the opportunity to explore topics and ideas that challenged her knowledge and perception of the world. As an individual who is majoring in the health and human sciences, she spent a great deal of time exploring the healthcare series, but she also attended seminar series about topics she had no experience with. She explored augmented reality, exoplanets, the struggles of immigrants who came to the US without the proper documentation, ocean robots, politics with Alexandria Ocasio-Cortez, and technology from around the globe. Cass used SXSW to find new interests and to understand the bigger picture of life on Earth. Cass learned from Alexandria Ocasio-Cortez to “stop trying to navigate system of power and start building your own system.”

Cass wondered what effects virtual and augmented reality would have on social interaction when used as a treatment for phobias and PTSD, as well as costs associated with the ability to alter reality. “SXSW motivated me and the other McKearn Fellows to explore a world of ideas that are not familiar to them.”

“SXSW motivated me and the other McKearn Fellows to explore a world of ideas that are not familiar to them.”
Todd’s Take: SXSW

Todd Durham

At the conference, a group of fellows went to a seminar that featured Bill Nye along with a few other experts that work with various entrepreneurship companies that are in the space exploration industry. The topic under discussion was the future of space exploration with respect to the privatization of the industry. As a child, Todd grew up watching movies of Bill Nye in elementary school, so it was an amazing realization that he had the opportunity to be at a seminar featuring him. To top that off, Bill Nye had the audience crowd around so that he could post a photo of everyone on his Twitter account, with seven McKearn Fellows included in that group (Kylie, Cass, Matt, Peyton, Allie, Leena, and Todd).

Later that day, Cass suggested that Todd attend the Alexandria Ocasio-Cortez panel. Previously, he had seen article headlines featuring Cortez but did not really know much about her. During her panel, she talked about her policy plans and some of her experiences as the youngest woman to serve in the U.S. Congress. The craziest part for Todd about seeing these two seminars was reading about them in the news the next day. He read some of the quotes and thought, “Hey wait a minute...I remember her saying that!” That definitely made him realize what a great opportunity it was to go to the SXSW conference.

One aspect of SXSW that surprised Todd was the number of seminars on ground-breaking technology. At the trade show, Todd and Matt got the chance to talk with students from the University of Texas at El Paso who were working on a project with NASA to send a miniature 3D printer into space. In addition to that, they also went to a seminar about biomaterials where three young entrepreneurs talked about the companies that they started while in college. These companies made products such as ink from algae, bacteria-grown bricks, and lab-produced spider silk. All of this new technology and young entrepreneurs sparked a new interest in Todd as he began to think about new innovative ideas and projects that he could start developing at NIU.
Sophomore McKern Fellow Kylie Zawisza
Leena Explores SXSW
Leena Ghrayeb

At SXSW, Leena spent a lot of her time engaging with the interactive track. The interactive track included educational sessions on a wide range of topics, including politics, technology and medicine. The music and film tracks included many different musical artists and genres, as well as world premiers of movies. During her time there, Leena focused on attending a wide array of educational sessions.

One of the most interesting sessions Leena attended was about space exploration. It featured experts in this field, including scientists who worked for NASA, as well as Bill Nye. The speakers highlighted that there has been an increase in public space exploration, as opposed to private, so it may be possible for the common person to visit space one day. Additionally, advancements in space exploration could lead to the implementation of universal internet access, which would greatly enhance access to education all around the world.

Another interesting session Leena attended was about the utilization of artificial intelligence (AI) in healthcare. This was especially fascinating, as Leena’s future career plans are to explore applications of operations research in healthcare. This talk explained a new technology that allows users to obtain a diagnosis for a dermatological issue. The user downloads an app and takes a snapshot of their skin, and the app returns a set of possible diagnoses. This app is coded by a doctor, and uses machine learning to make connections between images and conditions. This type of technology would be especially useful in rural areas where access to specialized healthcare, like a dermatologist, is limited. SXSW was an invaluable experience that allowed the McKearn Fellows to hear about the emerging research and technology. Leena greatly appreciates the generosity of the McKearns in allowing her to attend this conference!

Pictured from left to right: Kylie, Cass, Leena, Todd, Peyton, and Matt
Alexandra “Allie” Karnuth

At the film festival portion of SXSW, the McKearn Fellows attended the world premiere of a documentary titled *Human Nature*. *Human Nature* discussed the concept of CRISPR (clustered regularly interspaced short palindromic repeats) and the way this tool could ultimately be used in gene editing. CRISPR is a repeating sequence of DNA that is seen throughout the genome of an organism and is separated by varying spacers. These spacers can contain remnants of pervious viral infections’ DNA to be used as protection from those specific viruses in the future. The way this is done is through the use of CRISPR associated proteins (Cas) whose only job is to seek out viruses with matching DNA to that of the remnants found in the spacers. Once Cas has located a matching set of DNA it is able to snip it in a precise location in order to kill the virus. It is believed that this technology could be used to edit human genes to rid the body of genetic diseases. In the past, gene therapy has proven to be quite the guessing game, as new genes were inserted randomly into the genome with the hopes that they would find their way to the right spot. However, with the use of Cas, it would be possible to clip a person’s DNA in the exact spot of the mutation and then insert the correct gene in its place, much like placing a cursor in the middle of a paragraph to change a specific letter or word.

This new finding brings with it a mountain of possible outcomes, both positive and negative. We would have the capability to rid the population of life crippling diseases like sickle cell anemia and ALS, but we also have the capability of forming a super-soldier whose sole purpose is to fight and kill without any hesitation or regret. Another issue *Human Nature* explored about the power of gene editing was the power of human nature itself and the unintended consequences of designing human beings. Sickle cell anemia is only seen in those of African descent because of the prevalence of malaria in Africa. If a person has the sickle cell mutation in both alleles, they are sick with sickle cell anemia. However, if a person had the sickle cell mutation in just one allele, they aren’t sick with sickle cell anemia, but instead they are immune to malaria. Essentially, sickle cell mutations occurred over time as part of the evolution process to help protect those with the mutation from malaria. So that brings up the question: what exactly will happen when we begin to mess with nature and change things that happened for a reason? This film was highly enjoyable and extremely thought provoking for the Fellows. Overall, SXSW was tremendously informative, and the Fellows left with a plethora of knowledge about new and exciting concepts that they didn’t even know existed!
Dust to Dinos

Kylie Zawisza

Kylie attended was Dust to Dinos, a panel about the mysteries of our solar system and the space beyond. The panel was made up of four astrophysicists and planetary scientists: Dr. Elisa Quintana from NASA, Dr. Nikole Lewis from Cornell University, Dr. Sarah Horst from John Hopkins University, and Dr. Bonnie Meinke from the Space Telescope Science Institute. They covered everything from the origin of the universe to the use of biosignatures to detect life on other planets. They even discussed their favorite planet (Saturn) and their favorite moon (Titan). Of all the events she attended during the week away, Dust to Dinos was Kylie’s favorite event. As an aspiring scientist herself, she was grateful for the chance to learn from the women who are revolutionizing our understanding of the universe. It was inspiring to hear from four brilliant, female scientists succeeding in an extremely male-dominated field like astrophysics. #OutlastTheDinos

Nature-Inspired Innovations

Also while at the SXSW conference, Kylie attended a panel called Nature-Inspired Innovation. The focus of this talk was how biomaterials have the potential to transform many different industries, such as paint, masonry, and clothing. The speakers were all up-and-coming CEOs whose companies focus on using natural processes to make biodegradable, eco-friendly versions of common materials. Dr. Scott Fulbright is the co-founder and CEO of Living Ink Technologies, which is working to replace petroleum-based ink with pigments derived from algae. Ginger Krieg Dosier is the co-founder and CEO of BioMason, which has developed a technique that allows bricks and masonry to be grown from scratch in a lab. And finally, Dr. David Breslauer is the co-founder and chief scientific officer of Bolt Threads, which is focused on engineering polymers and fibers, such as spider silk, synthetically. While all three companies are still in the research and development phase, biomaterials may become a safer and more sustainable option for many materials.
Blooming VR

All of the McKearn Fellows, Eimileanne, and Jason attended the Blooming VR experience based on touch. This exhibit required attendees to be barefoot on a sensory pad and it reacted to our energy differently based on touch, which seemed to visually represent the positive energy of face-to-face interaction. It is an audio-visual interactive installation that responds to physical contact between two to three participants. It takes the form of a life-size 3D cherry blossom tree, a common symbol of social ties and of the transience of life in East Asian culture.

The session description stated:

“Lisa Park is a Korean-American artist who uses biometric sensors, such as heart rate and brain wave sensors, to create intimate environments that excavate hidden emotional states such as vulnerability, intimacy, and confrontation. Blooming highlights the importance of presence and physical connection in our lives. The installation, which takes the form of a life-size cherry blossom tree, responds to physical contact between two to four participants. When participants stand before the tree and hold hands or embrace, the tree will flourish; when they release, it will wither into its pre-bloomed state. Park’s work is augmented by advanced research at Nokia Bell Labs into sensor technology that enables the detection and determination of contact between people. Blooming was developed during the 2017-2018 Experiments in Art & Technology (E.A.T.) Artist Residency program at Nokia Bell Labs, in collaboration with NEW INC, a program of the New Museum.”
Chalk Art at SXSW
NIU Cares Day is a campus-wide day of community service. Volunteers comprised of NIU students, faculty, staff and alumni come together once a year to complete projects that benefit DeKalb County’s not-for-profit organizations and community agencies as a way of thanking the community for their support of the institution and its mission. The day may be spent in a variety of ways. In the past, volunteers have spent the day planting, painting, cleaning, sorting, assisting with events, and doing various other tasks around DeKalb County. The McKearn Fellows had an extremely rewarding experience working with the community through this hands-on and servant leadership opportunity. This year the McKearn Team was assigned to assist an elderly woman in the community by raking her lawn, amongst other gardening work.

“We helped clean an elderly lady’s yard for her, mainly raking up leaves and moving the heavy bags afterwards. She had already started leaf blowing by the time that we arrived but once we started working, she took the time to lean back and enjoy the beautiful day on her porch swing. What was really interesting about this lady was that she was an administrator at NIU in the 80s for about 15 years before she worked as the city clerk for the remainder of her career. It almost felt like a fulfilling circle of us current students helping her out after all her hard work at NIU in the past to make it what it is today. It was definitely a rewarding experience. I can’t think of a better example of ‘Huskies helping Huskies’.”

-Todd Durham, sophomore McKearn Fellow

“It is so easy as a busy college student to get caught up in your studies and the many aspects of life that we all juggle, so taking some time out to be able to give back and realize all the ways that we are blessed was very rewarding for the Fellows involved!“

- Allie Karnuth, sophomore McKearn Fellow
Clinical Experience
Alexandra “Allie” Karnuth

This semester, McKearn Fellow Allie Karnuth began nursing school. She also had her very first clinical experience! Allie’s clinical was located at Oak Crest Retirement Center in DeKalb, IL. Allie worked in the different units in the nursing home portion of the center, taking care of patients who were no longer able to care for themselves. Before beginning clinicals, Allie didn’t really have a purpose for choosing nursing as a career other than that she knew she wanted to work in healthcare, and she knew nursing had a wide variety of opportunities within the field. After this clinical experience, however, it was evident to Allie that caring for people truly was her calling, and that nursing really was the best possible fit for her. The sole focus of nursing is the patient and ensuring that their needs are being met in every way possible. Being able to get out into the field and actually experience being a nurse for the first time taught Allie more than any nursing course ever could about what her future as a nurse looks like. “Knowing that you have directly impacted one’s life for the better is arguably the most rewarding feeling a person can feel and I feel so grateful to be able to do that each and every day.” Although starting clinicals was challenging, as Allie was pushed to do things she wasn’t quite yet comfortable doing, it was also so rewarding, and confirmed within her that she had chosen the right field and was going to end up having a job that she really would not even hesitate to do for free.

St.Louis Bound!
Nicole Hoffman

Nicole (Nickie) Hoffmann is looking forward to an exciting and instructive summer in St. Louis. She recently accepted an internship with Adarza Biosystems, a company that develops silicon chips for label free molecular detection. She will be using her electrical engineering knowledge to help improve a robot designed to transport the chips, as well as starting production of a second robot. She is hoping to meet with John and Cassandra McKearn and thank them for all their help throughout her educational journey. In addition, she will be taking two online engineering classes to further prepare her for graduation in spring 2020. She can’t wait to explore a new city and gain technical experience within her industry.

“The purpose of life is to live it, to taste experience to the utmost, to reach out eagerly and without fear for newer and richer experience.”

― Eleanor Roosevelt
The following is the *Midweek* excerpt.

To celebrate “The Wizarding World of Chemistry,” Northern Illinois University’s Chemistry Club members grabbed their wands and potions, but instead of robes, they wore lab coats. The club’s annual NIU Chem Demo Night was Friday, April 12th in Faraday Hall. This year, they featured Harry Potter-themed experiments. The event was free, open to the public, and suitable for all ages. MidWeek Reporter Katrina Milton spoke over the phone with Kylie Zawisza, treasurer of NIU Chem Club and sophomore biochemistry major, about the event.

**Milton:** What is NIU Chem Demo Night?

**Zawisza:** NIU Chem Demo is a free event in Faraday Hall, the chemistry building on campus. Everyone is invited and welcome to attend. The event is hosted by the NIU Chem Club, a club funded by the NIU Department of Chemistry. Our club has two big events each year, NIU STEM Fest and NIU Chem Demo. During Chem Demo, we perform experiments in front of an audience and teach and explain the chemistry of what they saw. Then, at the end, there’s free liquid nitrogen ice cream for everyone that attends.

**Milton:** Does the event always have a theme?

**Zawisza:** This year, we have a Harry Potter theme. Last year, the theme was the Olympics, and in the past we’ve done Star Wars. It is usually a themed event, and we change the theme every year.

**Milton:** How will you incorporate the theme into the event?

**Zawisza:** Our announcer/moderator will be dressed up as Harry Potter, but since we have lab safety rules, the Chem Club volunteers will have lab coats on. We will have 12 Harry Potter-themed experiments based off of magic themes in the book: potions class with exploding potions, make our own patronus, marauders map that disappears, a goblet of fire.

**Milton:** Why is the Harry Potter theme helpful for the event?

**Zawisza:** During the show, we’re going to relate the experiments to Harry Potter and explain the science behind it. Although it may seem like magic, it’s actually just science. Having the theme makes the science more relatable. Relating chemistry to something the kids know, makes it more interesting.

**Milton:** Why are you involved in NIU Chem Club?
Zawisza: I’m a biochemistry major, and I’m really interested in chemistry. I was involved with the Chem Demo last year and really liked it, so I’m doing it again this year. Chem Demo is a lot of fun, it’s like putting on a chemistry show for the DeKalb community.

Milton: What do you like most about the Chem Demo event?

Zawisza: Sometimes the ideas in chemistry are dry and boring. I like showing people how much I like chemistry, that chemistry is fun and involved in everything. Chemistry is not a big scary science thing that nobody else can do. Chemistry is for everybody.

Milton: Did you attend an event like Chem Demo when you were younger?

Zawisza: No, I never attended an event like this. I would have liked to have it when I was younger, just to see people enjoy science instead of just seeing a science teacher in front of a classroom. All the volunteers at the event are college kids, not scientists or science teachers. We do this because we love chemistry and want to share it with others. We want to spread that joy to kids and the community.
Feed My Starving Children

This April, the McKearn Fellows, Eimileanne Delaney, and Jason Goode spent their night volunteering with Feed My Starving Children (FMSC) in North Aurora, IL. FMSC is a non-profit organization that provides nutritionally complete meals for starving, malnourished and hungry people. Volunteers prepackage the dry meals in an assembly line fashion. Once packaged and shipped, FMSC’s in-country partners use the food to prevent starvation and curb malnourishment in children and families worldwide. FMSC food has reached more than 70 countries throughout their history. FMSC has three types of prepackaged meals: MannaPack™ Rice, MannaPack™ Potato-W, and MannaPack™ Potato-D. MannaPack™ Rice: The original food formula consists of vitamin-packeted flavoring, dried vegetables, soy protein, and rice. MannaPack™ Potato-W: The “baby food” which meets World Health Org. standards for infants 7-12 months contains vitamin-packed sweet potato flavoring, potato granules and soy flour. MannaPack™ Potato-D: The first and only food for people with severe diarrhea (a leading killer in the developing world) contains a specific sweet potato-flavored vitamin mix which aids rehydration, potato granules and soy flour. Our McKearn Fellows packed the MannaPack™ Rice. Along with other volunteers, the McKearn Fellows packed 107 boxes. Those boxes contained 23,112 meals that can feed 63 kids every day for an entire year. The total cost of those packed boxes was over $5,500.
On March 5, 2019, one of Cass’s childhood dreams came true. It was official; she would be working for the Mouse himself for five months. Cass was selected to participate in the Disney College Program at the Walt Disney World Resort in Lake Buena Vista, Florida. Not only will she have the opportunity to work with thousands of people from across the globe every day, she will be working for a fortune 500 company. The Disney College Program is a program created for college students to work for the Disney Company for five to nine months and focus on professional, personal, and social development. The program is a Living, Learning, and Earning experience. Cass will be living on the Disney college campus while working at the resort and taking special professional development courses offered only by Disney. She is excited to apply the cultural competency, customer service, and concepts learned in her courses to a career in the human services.
Pictured: Cass (gray Stitch shirt) and her friends announcing her Disney internship acceptance.

“We keep moving forward, opening new doors, and doing new things, because we’re curious and curiosity keeps leading us down new paths.”

-Walt Disney
¡Bienvenido a España!
Sarah Shapley

Sarah Shapley is a senior in the McKearn Fellows Program. For her final year, she completed a McKearn Away Experience to Spain. Over the fall semester before the winter break trip she took the course *Spain Today* which served as an overview of Spanish history and culture. Additionally, Sarah read the supplemental literature *De Madrid al Cielo* by Ishmael Grasa to better understand living in the cities of Spain. During this semester she worked with Dr. Stephen Villaseca to pick places to visit in order to maximize the learning experience of her trip. The first city that she visited was Madrid. There, Sarah lived in the same neighborhood as the character from *De Madrid Al Cielo* and traced his footsteps through the city. She visited the parks and squares that the character wandered through, and tried to see the city through his eyes. Sarah also truly enjoyed visiting the Prado Museum to view the cultural masterpieces that she had seen while studying to obtain her minor in Spanish at NIU.

After Madrid, Sarah took a train across the country to Barcelona. There she was infatuated with the gothic architecture found in the city, especially the cathedrals. She was amazed at the Roman columns still standing after 2000 years, and visited the holy site of Monserrat. According to her, “The most amazing part of my trip was standing at the ridge of a serrated mountain made of deltaic deposits. This was the location where the Black Mary holy relic was allegedly found. There I could see one of the most important monasteries of all of Spain and overlook the gorgeous river valley below.” All of these experiences allowed her to improve her Spanish and immerse herself in the culture of Spain. Sarah has previously studied abroad in Chile, and was fascinated by comparing two totally different cultures that shared the same language.
Dayne’s close ties to muon-to-electron-conversion experiment (Mu2e) afforded him the opportunity to work on another branch of Mu2e’s Cosmic Ray Veto (CRV’s) development. Early in the Spring 2019 semester, Dr. Gerald Blazey offered to connect Dayne to a research professor at the University of Virginia, Dr. Robert Craig Group. Over the course of the spring semester, Dr. Group and Dayne ironed out a plan for the summer: Dayne would come to the UVA from June through July for an eight-week internship. There, he will be assembling the modular components of the CRV. He is excited to have this fantastic opportunity to put his prior experience at NIU to work at UVA.

Undergraduate Research and Artistry Day: URAD

This is a showcase and celebration of the outstanding research and artistry projects that undergraduate students have participated in throughout the academic year. This year our junior level McKearn Fellows participated in this event!

Dayne Coveyou

...understanding the nature of matter & energy and the dynamics of the cosmos through interdisciplinary scientific research & education.

Research, Dayne has learned, is often complicated beyond any expectations planned for at the beginning of the process. He began this year planning on creating a project involving an implementation of the light detectors that he’s been working with for 2 years. These light detectors are silicon photomultipliers (SiPMs). He had hoped to use his familiarity with these SiPMs to implement them in a proof of concept cosmic ray detector. This particle detector would functionally work like a small Cosmic Ray Veto—a component of the Mu2e’s background isolation system.

However, during the research process, Dayne with his mentor Dr. Gerald Blazey and his supervisor Dr. Vishnu Zutshi decided this research project would have been redundant and unnecessary. Instead, keeping with Mu2e, Dayne worked to design a study on the effects of radiation damage on those SiPMs. Specifically, there is a process called “annealing” which reduces the impact of radiation on SiPM’s performance. The preliminary findings show a clear improvement in SiPM performance as annealing progresses, enough that the radiation damaged SiPMs may not need to be replaced during the lifetime of Mu2e.
Victoria Kwaben

In the beginning of fall 2018, Victoria finished her neurobehavioral research and decided to continue a research project she began two years ago as a freshman. Later she presented this research, titled “Worthful Waste: College students’ attitudes towards Composting on Campus and its feasibility” in the Undergraduate Research and Artistry Day. Victoria enjoyed presenting this research. She felt it was a unique experience to explore subjects not related to her discipline and believes it diversified her education and raised environmental awareness for herself and those involved.

During this time, Victoria also attended the Annual Interdisciplinary Case Study Event. Practicing and student professionals from audiology, counseling, dietetics, medical laboratory sciences, nursing, physical therapy, and speech-language pathology amassed to discuss the quality of care, collaboration, and potential for improvement of a complex patient case. This event sought to enhance collaboration among future healthcare professionals by demonstrating the necessity to do so through a patient’s experience, outcome, and long-term care. Victoria reports she was grateful to partake in this event as it has made positive developments in her care already. She would encourage every future health care provider to attend a conference that focuses upon enhancing collaboration among the disciplines. Victoria looks forward to summer 2019. She plans to complete her psychology minor at this time and is thrilled to begin her internship with Linden Oaks Behavioral Health Center exploring emergency, inpatient and outpatient care in mental health.
Leena Ghrayeb

This academic year, Leena has been actively involved in research as well as industry. She conducted her own research with Dr. Damodaran, chair of the Industrial and Systems Engineering department, and also completed a separate project as part of her Senior Design graduation requirements.

Leena’s research project focused on scheduling a single batch processing machine with dynamic job arrivals and sizes. The objective of the problem is to schedule jobs in batches such that the capacity of the machine is not exceeded, and the total run time of the machine is minimized. This type of problem is especially evident in industries that utilize batch processing, like assembly and inspection of printed circuit boards (PCB) for example. Leena coded different heuristics using MATrix LABoratory (MATLAB) software and determined which approach yielded the best results. Working with her faculty mentor, Dr. Damodaran, Leena co-authored a paper, which has been accepted to the IISE conference, one of the largest Industrial and Systems Engineering conferences. Leena will be presenting her work at the Institute of Industrial and Systems Engineers (IISE) Conference this upcoming May.

Additionally, Leena completed her Senior Design project this semester. This project was sponsored by Northwestern Medicine, and the location of the project was Kishwaukee Hospital in DeKalb, IL. The goal of the project was to minimize the time it takes to turn around a room after a patient has been discharged. The hospital has been operating close to capacity, meaning the time it takes to obtain a room has increased for patients, as rooms are not as readily available. One key factor that impacts the time it takes to obtain a room is the time it takes to clean a room after the previous patient has left. This is the responsibility of Environmental Services (EVS). Leena and her team members worked to understand the current state of the system, analyze data, and implement improvement ideas. At the beginning of the project, the average turnaround time at Kishwaukee was 180 minutes, as opposed to the Northwestern Medicine system average of 90 minutes. After the implementation of the team’s improvement ideas, performance was 90 minutes on average, on par with the rest of the system. Leena’s team presented their work at NIU URAD on April 17th, the NIU Engineering Senior Design Day on April 26th, as well as the NIU Engineering Demonstration Day on May 3rd. All in all, Leena’s experience in both research and industry have solidified her passion for applying her knowledge in Industrial Engineering to the healthcare field. There is so much potential to improve and optimize healthcare, and she is excited to explore this further in the future.
Aspen Wheeler has presented at Undergraduate Artistry and Research Day since her senior year in high school. She only took one year off as a participant in order to assist in hosting the event with the Office of Student Engagement and Experiential Learning (OSEEL). After being inspired by the philanthropy of the McKearn Fellows Program and witnessing firsthand the effectiveness of engaged learning programs, such as the McKearn Fellows Program and programs through OSEEL, she decided instead of conducting research in her field to take an alternative avenue. Initially, she wanted to pioneer a program providing assistance for disadvantaged students to participate in internships, without having to be involved in the honors program which has requirements that can bar hardworking, deserving students from opportunities accessible to their more privileged peers. During this process, she struggled with her health and experienced a lack of funding, so was unable to see the initial project to completion.

With the help and support of the OSEEL office, she was able to identify a project that did not require funding, while still supporting the original goal and affecting the campus community as a whole. Students’ participation in High Impact Practices (HIPs) is increasing, but there is a shortage of faculty willing to mentor. This is essential to the addition of new programs because nearly every single engaged learning program and research opportunity requires a faculty mentor. Aspen’s results indicated that most faculty mentors mentor altruistically. Faculty do not engage in mentorships because there is no recognition or monetary benefit to their participation— and they are still doing a job. But, results also indicated that students are achieving the standards laid out by the National Survey of Student Engagement and are therefore essential to a holistic undergraduate experience. Some solutions proposed included engaging administration to help introduce a point based tenure system and/or providing professional workshops and utilizing graduate students as mentors.

What motivates you to participate in undergraduate research mentoring?
Meet The New Fellows

Cameron Simpson

Cameron is double majoring in English and history, with a minor in communication studies. On campus, she is a member of the Forensics team, the editing board of Stone House Academic Journal, and the Honors Committee. She is also an English Student Ambassador and is working on a project with the Regional History Center, restoring an architectural model of the Haish family mansion that used to stand in DeKalb. Cameron sees the McKearn Fellowship program as an important opportunity for her to gain access to perspectives apart from her own via research and service. In addition, she looks forward to growing her professional network and gaining experiences which can both sharpen her professional interests and enhance her credentials.

Alison Kramer

Alison is pursuing a major in accounting and a minor in social entrepreneurship. She is involved in many organizations in the College of Business. Those include Leaders in Ethics and Academic Discipline (LEAD), Collegiate Association of Unreasonable Social Entrepreneurs (CAUSE), and Women’s Leadership Institute. She is a Research Rookie and is finishing up her research on how impact investment funds can gain legitimacy in the market. She plans to continue researching in the social entrepreneurship field throughout her college career. Outside of school, she likes to spend her free time outdoors, traveling, and volunteering. After graduation, Alison plans on pursuing her master’s degree and then entering her field.

Sara Plettau

Sara is pursuing a major in nursing and a minor in public health. Her interest in the healthcare field stems from her passion for science and helping others. She is a member of the NIU Huskie Marching Band and Pep Band where she plays the flute. Sara is also involved in Speaker’s Bureau, which is made up of volunteers at NIU who answer questions and share their experiences in the LGBT+ community. Sara enjoys giving back and volunteering at her church’s nursery and preschool services. As a McKearn Fellow, Sara hopes to positively impact her community with her combined interests in healthcare and human rights. After graduating, Sara hopes to work as either a nurse or occupational therapist.
Jeremy Knoll

Jeremy is pursuing a double major in history and economics, as well as a minor in German studies. He is passionate about the study of history, specifically the Civil War era, and hopes to earn a PhD in history and become a history professor. Jeremy is currently involved in the Research Rookies program, where he is completing a historical research project focusing on the resistance strategies employed by Confederate prisoners of war held in Midwestern Union prisons during the Civil War. He is currently involved in the Residence Hall Association as the Secretary of the New Hall Community Council and is the President of the Quiz Bowl Association, as well as a Presidential Scholar. Outside of school, Jeremy enjoys hiking, watching TV with friends, and going to thrift and antique stores. He is excited to see how the McKearn Fellows program can better prepare him for his future career goals and expand his presence on campus and in the DeKalb-Sycamore community.

Emmett Rogman

Emmett is a chemistry major who finds himself focused primarily on academics. In high school, his favorite coursework was mathematics and now he has also found a passion for chemistry. Emmett hopes to obtain a dual major in chemistry and mathematics with a minor in biology. While he finds himself spending most of his time on his academics, he most enjoys spending time with his closest friends. The large student population at NIU was initially overwhelming but he is grateful to meet and make many new friends. He hopes to increase his campus presence through research in the 2019 fall semester and also through the participation of the McKearn Fellows Program. According to Emmett, he made substantial strides in high school to develop into a better person, improving his character and personal morals. He hopes that the McKearn Fellows Program continues the development of his character among other traits. After Emmett graduates, he hopes to pursue a higher degree. He feels committed to continuing his education beyond NIU and currently hopes to attend medical school.
**Congratulations to the Graduating McKearn Fellows**

**Peyton Whiston**

Peyton graduated with a double-major in geography and biological sciences, a minor in chemistry, and a certificate in Geographic Information Systems (GIS). This summer, Peyton will begin attending medical school to pursue an M.D., Doctor of Medicine. While he hasn’t yet decided on a specialty yet, he is interested in family medicine, palliative care, and anesthesiology. Peyton would like to thank John and Cassandra McKearn for all of the support that they have given him over the past three years. During the McKearn Fellows Summer Research Program, Peyton realized his desire to pursue a career in medicine. Further opportunities through the McKearn Fellows program, such as traveling to the Dominican Republic to observe the healthcare system there, solidified his career plans.

**Leena Ghrayeb**

Leena graduated with her degree in Industrial and Systems Engineering. She is planning on completing her master’s degree in Industrial and Systems Engineering at NIU in May 2020, and is planning to apply to PhD programs this year. Her goal is to conduct research in operations research, specifically in applications of operations research in healthcare. She is very grateful for the opportunities that the McKearn Fellows Program and NIU Honors Program have offered her, and is excited to see what the future holds!

**Sarah Shapley**

Sarah will be attending graduate school at the University of Nevada, Reno, where she will continue her research into hydrothermal ore deposits, including gold and copper. Sarah was also selected to receive the prestigious NSF (National Science Foundation) graduate research fellowship, which awarded her $34,000 and a $12,000 cost-of-education allowance for her graduate studies. Sarah firmly believes she would not be where she is today without the support of the McKearn Fellows Program. Her most transformative personal learning experiences were her McKearn away experiences. Additionally, the summer research program her freshman year immediately hooked her on research, a passion she has continued to develop through her senior thesis this year.
Say Hello To The New McKearn Graduate Assistant

Ruth O’Donnell

Ruth O’Donnell is the incoming graduate assistant who will assist in the planning and implementation of the McKearn Fellows Program. Ruth is pursuing a master’s degree in counseling with a specialization in school counseling. She graduated from NIU in 2013 with a bachelor’s degree in English and a license to teach secondary English. She has since worked as a high school English teacher at Belvidere North High School and a Nonprofit Director at Neighbors’ House, a local nonprofit that partners with underserved students and families in DeKalb County. We are excited for Ruth to join the McKearn team!

Goodbye & Thank You!

Eimileanne Delaney

Eimileanne would like to thank John and Cassandra McKearn and everyone involved in the McKearn Fellows Program for giving her the opportunity to be the graduate assistant for the past academic year. She would like to thank everyone with whom she had the privilege to interact and she wishes the McKearn Fellows family all the very best in their professional and personal lives. After completing her thesis, Eimileanne will graduate at the end of the 2019 summer semester with her Master of Science in Applied Human Development and Family Sciences with a Specialization in Marriage and Family Therapy. Following graduation, Eimileanne has accepted a clinical position in a private practice in North Aurora, IL.
NORTHERN ILLINOIS UNIVERSITY

McKearn Fellows