



## A Revolution Turns 25

By Vincent Cahill



**A**t the time of this writing, I have spent a month and a half in a country that is officially 22 years old, just three years older than me. Like many 22 year-olds, the Czech Republic does not have everything entirely figured out. This is a country that is still debating the merits of its defining revolution, is wary of its elected government and is working to define its place within the European Union and the world at large. My time in Prague, the Czech Republic's capital city, has made me very much aware that this country is still shaping its identity, and its future is yet to be determined. In other words, it is the perfect place for a college student.

Before I delve further into describing my semester abroad, I want to take a minute to provide context about the history of the Czech Republic. The story of this nation is so unlike that of the United States, and it sheds light on a wholly different path to the formation of a nation that, on the surface level, appears relatively familiar to the United States. Like much of Central Europe, the lands that would become the Czech Republic were the home of various Germanic tribes and Slavic peoples for thousands of years. The nation rose to initial prominence in the 14th century under the reign of national hero Holy Roman Emperor Charles IV. However, the 16th century signaled the rise of Austrian occupation, and the nation plunged into a Dark Age for nearly 400 years. Czechoslovakia briefly gained statehood at the conclusion of World War I, before again suffering occupation, this time under Nazi Germany. After the nation's liberation in 1945, it democratically elected an ambitious Communist government, one which quickly seized power and pulled the country behind the Iron Curtain. The Velvet Revolution of 1989, led primarily by an unlikely combination of university students and dissident poets, ushered in a new, democratic government and launched the country into the 21st century.

When planning my study abroad experience, I know I was guilty of focusing on the "abroad" more so than the "study." However, my coursework has consistently been informative and engaging. The program that facilitates my study abroad experience places heavy emphasis on familiarizing students with the host country's heritage within the courses. Many of my days in the classroom are supplemented by walking tours of Prague's historic districts, trips

*The reward at the end of a long hike in Mikulov, Czech Republic*

to museums of history, or music or live renditions of Czech art performances.

I have grown to deeply admire and respect my instructors. With the exception of one British expatriate, all are born and bred Czech natives, and I am fascinated by the lives that they have led. Many of my instructors spent significant portions of their adult life under the Communist regime, which demanded that many of the major decisions in their life, whether that be serving in the Communist Czechoslovakian military, toiling in manual labor camps or performing in the compulsory spartakiada festivities, were entirely involuntary. The tragedy of those lost years is offset by the inspired decisions that they were able to make of their own will – participating in the protests of the Velvet Revolution, acting as the first democratic President's English interpreter or serving as a diplomat to the United States, among other civic contributions to this young nation.

Outside of the classroom, I have tried to take advantage of the freedom to travel. The Czech Republic's location in the heart of Europe allows for accessible weekend trips to many European landmarks. Over the course of the semester, I will be able to visit a film festival in Berlin; see Milan in the height of Fashion Week; and also spend time in Poland, Nuremberg, Austria, Hungary, Serbia and others. I am also very excited about the prospect of hosting fellow Levine Scholars to Prague and showing them the city that I have grown to love.

The recent history of this nation created an atmosphere that encourages self-discovery. Shortly after the celebration of their successful revolution, Czechs were left to face the sobering reality of rebuilding an entire nation. For the past 25 years, the opportunities and difficulties of that challenge have remained. As a student still adapting to a new environment, I have found a similar space for self-discovery in the Czech Republic. I have learned that there is a limit to the number of "Czech" puns that any human should have to bear. After an unplanned plunge into a not-entirely-frozen lake, I have learned to avoid frozen lakes altogether. More than anything else, the defining lesson of my study abroad experience will always be rooted in the spirit of 1989, when students demonstrated the courage to stand in the face of an oppressive regime and fight for the right to their own future.

# Increasing Hope for the Homeless One Blood Pressure at a Time

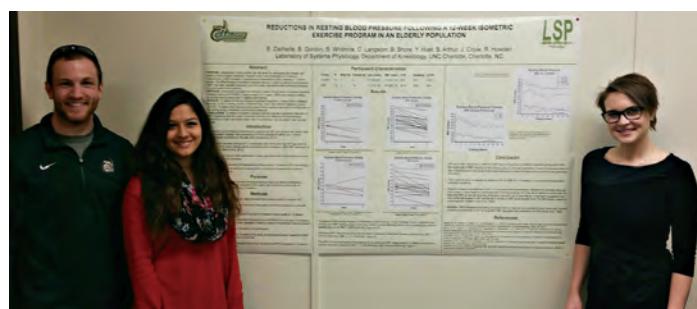
By Sarah Whitmire

For the past two years, I have been actively involved in the UNC Charlotte's Systems Physiology Lab with Dr. Reuben Howden in the Kinesiology Department. We are analyzing the mechanisms behind the positive effects of isometric exercise on blood pressure, as well as understanding how this exercise affects glucose uptake and pulmonary function.

Hypertension, defined as having a blood pressure greater than or equal to 140/90 mmHg, is one of the most prevalent chronic conditions worldwide. According to the World Health Organization, it accounts for 12.8% of all deaths, affecting more than one billion people on a global scale. Our lab's focus is on isometric exercise, which is a sustained muscle contraction with no change in length of the involved muscle group (such as holding a specific exercise position). Scientific studies analyzing isometric handgrip training in individuals with normal or high blood pressure have been shown to significantly lower resting systolic and diastolic blood pressure. Evidence suggests that this isometric exercise training produces an average decrease of 10-14/6-8 mmHg. However, the mechanisms behind how isometric exercise training lowers resting blood pressure remain unknown.

After our lab conducted a very successful research study with a local senior center, I initiated a similar study at the Salvation Army Center of Hope Homeless Shelter. Throughout the past three years, I have been developing a connection with this shelter, which sleeps an average of 300 women and children every night. In 2012, I completed a volunteer internship with the free clinic associated with the shelter, which

provides free healthcare to the residents there. Their mission is to remove health issues as barriers to self-sufficiency. It was an eye opening experience because I had a chance to work with people who were living in poverty and recognize the struggles that they face daily, such as limited access to quality healthcare. Not only did I have the valuable opportunity to provide healthcare to the population, but I also had a chance to hear some of their stories. After we had to call an ambulance for two of the women who were in a critical state of hypertension, I knew something had to change. In 2013, I gathered some preliminary data, which suggested that about one in three women residing at this particular homeless shelter is hypertensive. I also realized that some of the residents do not realize that there are other ways besides medication to control hypertension.



*The original IET research team from UNC Charlotte's Systems Physiology Lab*

The primary goal of my research project was to provide a self-sustainable way for this high-risk population of women at the Salvation Army to control their blood pressure. Secondary goals included education about hypertension and other factors that play a role, as well as gathering information in order to learn more about the mechanisms behind how isometric exercise training lowers resting blood pressure.

I wrote an application to be reviewed by UNC Charlotte's Institutional Review Board (which has to approve all research projects dealing with human subjects), gathered a research team, recruited participants, and created and coordinated educational sessions about blood pressure that were open for all of the women to attend. Our goal was to make the education sessions interactive and interesting. Many of the residents did not know what the blood pressure numbers meant. We stressed the importance of exercise and taught a five-minute meditation that could be done anywhere. A teammate of mine let a couple of the women record instructions for the meditation, so they could repeat it during times of increased stress.

This research study was brought to the shelter in the form of exercise classes. The participants gathered in groups to perform the isometric handgrip exercises together with music playing in the background. We used a machine called a dynamometer, which measures the force at which one can squeeze their muscles. Each class took 11 minutes. I traveled to the shelter every day, but I wanted the participants to participate three times a week. The project is now complete, and I am working in the lab to organize and input the massive amounts of paperwork. Statistically, I found that there was a significant correlation between number of classes attended and drop in blood pressure. Mid-project, two participants told me that their physicians decreased their medication. Another woman used to have trouble grabbing the rail and pulling herself onto the trolley. After a few weeks of the project, she came in and could not wait to tell us that she no longer had trouble because of her increased forearm strength. Increased stress, comorbidities, and other pre-existing factors increase the risk for hypertension; however, with education and proper adherence, isometric handgrip exercise is a valuable tool that can be used to lower



*A picture for good luck taken with a staff member and shelter residents on the first day of my project.*

blood pressure in this population. This has future implications for use as an early treatment plan for elevated blood pressure, and ideally, the exercise can be performed with anything that can be squeezed.

While the research and the numbers are important, I am more concerned that I made an impact with this population. Homeless women have significant amounts of stress; poor health is just another obstacle in their path. Although this project was tough to implement, due to indifference and non-adherence of some of the participants, it gave me the opportunity to develop some incredibly unique friendships. While I strived to educate this population, they taught me more than I could have ever taught them. It is bittersweet that I no longer see my new friends every day, but I laugh every time I go back and they excitedly shout, "Here comes the exercise girl!" when they see me.

## 9,906 Miles in 168 Hours: A Week in the Land Down Under

By Alex Curley

Racing has been in my blood since I was a young kid racing quarter-midgets at Thompson Speedway in Connecticut. I always dreamed of intertwining my career with my love of motorsports, and two years ago, I was offered the opportunity to do just that. After a few conversations with faculty members in the mechanical engineering and motorsports programs, I found myself working in a research group dedicated to motorsports aerodynamics and contracted by the Chrysler Street Racing and Technology (SRT) race team competing in the American Le Mans Series.

I was 19 years old and working for one of the top race teams in the leading sports car division in the United States, I would say I was pretty happy. As I became more involved the research group, I learned that their research extended beyond just the contracted work for Chrysler SRT. Behind the scenes, the group of three graduate students worked to improve the modeling of turbulence for aerodynamic applications. After just a few weeks of working for the group, I began to get my feet wet with a study of my own – investigating the effectiveness of current turbulence models in predicting the flow around two vehicles in tandem arrangement, also referred to as "drafting" in the motorsports world.

After almost one year of climbing a steep learning curve, I finally had some results worthy of publication at a highly competitive conference in Melbourne, Australia, in December of my junior year. 9,906 miles and 36 hours later, I was on my own in the land down under preparing to present at a conference full of experts. I was a little intimidated and out of my element, especially as only one of the few undergraduates at the conference. On the day of my presentation, I stood shaking at the front of an auditorium full of researchers and professors waiting for the question that I could not answer, but as the minutes passed, I gained more confidence in my words and the depth of my knowledge in my field. The feeling of intimidation was replaced with the exuberance and adrenaline rush of accomplishing a milestone.

The conference was more than just a confidence builder. It was a way for me to break into my field, to create connections for my career and to build relationships with my generation of researchers. After my presentation, a group of students with similar research objectives approached me with intriguing questions about my studies and welcomed me into their group. Months after the conference, I still keep in touch with the students I met as we collaborate on research projects in the field of vehicle aerodynamics. Since the conference, I have entered UNC Charlotte's

early-entry Masters of Science in Mechanical Engineering program with the intention of pursuing my doctorate.

After long days listening to presentations, I explored the streets of Melbourne, walking around with no direction and soaking up everything in such a short period of time. Amassed with an eclectic combination of modern design and historic architecture, Melbourne is a beautiful city intertwining the cultures of Western Europe and America. People say I am crazy for travelling so far for just one week, but I would not trade my experience for anything.



Yarra River



Downtown Melbourne

# Phase XIV: Leon and Sandra Levine Hall

By Joneka Percentie

I went to our monthly whole group seminar that night expecting the normal course of events. There would be a quick celebration of birthdays that month, announcements and committee meetings. It would prove to be like any other whole group seminar until it was announced that construction would begin on a new honors residence hall housing Levine Scholars and other students in Honors programs. The energy in the room immediately became electric.

The new residence hall, which will be named in honor of Leon and Sandra Levine, is part of Phase XIV of construction plans on campus. The construction began this spring and is due for completion in the summer of 2016. The planning process for Levine Hall began in September 2013. I had the opportunity to see architectural plans of Levine Hall last year as part of the Student Executive Board. The artistic mockups and floorplans illustrate a gorgeous new building that will be located near the main entrance on the north side of campus.

Some benefits of Levine Hall include seminar spaces, offices, reception areas, guest speaker suites, study rooms, lounges, private one-on-one spaces and conference rooms. Levine Hall will be perfect for accommodating more scholars as class cohorts grow from 15 to 20 students thanks to the new expansion initiative the Levines announced earlier in the school year. It will also include suites and apartment-style rooms that will house 425 students.

The electric energy in the room that night at seminar is just a glimpse of the excitement students will have once construction is complete and Levine Hall is a part of the UNC Charlotte campus.



*Rendering of Levine Hall*

## Growing a Grant

By Isabel Fee

For as long as I can remember, older people have been my favorite people. While they are wrinkled, gray and sometimes stubborn, they are also a loving, peculiar and highly accomplished set of human beings. For that reason, as uncommon as it might be, nursing homes are places I love to be.

At the end of every busy week of architecture studio, I spend hours counseling, painting fingernails, calling Bingo, and most recently, leading a Garden Design Club for a group of assisted living residents. The Gardening and Design workshops I teach are the first phase of my \$8,000 Levine Civic Engagement Grant – a project inspired by the three years of experiences I have collected thus far as a Levine Scholar.

On weekends away from architecture and during the summers, I have gained experience in various eldercare settings – from Charlotte, North Carolina to Buenos Aires, Argentina – and have been able to perform an on-going analysis of the rights, needs and capabilities of this population that I love. As it develops, my project will eventually lead to the design and creation of an architectural outdoor space for the facility. In the Garden Design Club I am able to collect the residents' opinions about what currently deters them from going outside and collaborate on the design for the new space. It also allows me to generate excitement for the possibilities of the garden – it could become anything from a wild tropical oasis to a manicured plot inspired by the simplicity of modernism. It could also come to life as an outdoor bingo patio or be more of a private space for introspection. The opportunities are endless, so the personality and vision of the residents will help narrow the concept.

In the gardening classes, we have had workshops on gardens around the world, miniature Zen Garden making, germinating seeds and, following the seeds' sprouting, even had a potting workshop. Classes start off slow, residents admittedly require some coaxing to shift focus from what they lack in eyesight, hearing and mobility to what they can do. It takes time, but by the end they are freshly optimistic, walking away with their projects carefully balanced on their walkers and asking, "When's the next meeting? OK, I'm going to try to remember that," repeating the date several times out loud. The challenge is good for them, and it generates a kind of enthusiasm, conversation and story telling that you do not often hear with just a popsicle-stick craft.



*Ryan Mach '17 and Noelle Cornelio '15 (taking picture) assist me in teaching.*



*Working on a site model*

In our discussions, I have come to find out we have farmers, teachers, racecar mechanics and librarians in the group. Sometimes it sounds like a town hall meeting, "Petunias!" "Tomatoes!" There is no shortage of opinions and ideas. They all know something about gardening and collectively provide many reflections, insights and snippets of humor. It has painted for me a colorful picture of how the first democracy must have been with the elders at the Roman Forum.

Who knows? Maybe that is what the space will become. Stay tuned as the grant growing continues!

# Just Keep... Reading! Levine Collaboration with the University City Regional Library

By Eileen Jakeway

In Dr. Zablotsky's Freshman Seminar, we wrote countless essays. All were geared to benefit us in a variety of ways, but there was one essay in particular that I remember quite well because it has followed me to this day. The prompt was to explore a major global problem and to find a potential solution. At first, I did not know where to begin. There are countless issues that pervade our daily lives and even more that are present all over the world. But for me, the issue that I feel I simply cannot ignore is that of illiteracy.

Through writing a paper about the purpose of books and importance of reading and writing, I was able to articulate my passion for this "problem." Words have played a key role in shaping who I am as a student and as a person. So after doing a bit of research for my essay in Freshman Seminar, I kept reading. I learned that global literacy rates are, in general, abysmally low, particularly for women and children, and that technological literacy is becoming increasingly important as the progress we have made in that sector is only augmenting the divide between developed and developing countries. I realize that as an English, French and German major, language is both my skill and my responsibility. This is what spurred me to intern with Freedom Schools over the summer of 2014 and then to rekindle the volunteer partnership between UNC Charlotte and the University City Regional Library.

Freedom Schools is a summer literacy program geared toward providing at-risk children academic stimulation during the summer so they do not fall behind during the months between academic school years. I was able to spend the summer fostering a love of reading in my own classroom at UNC Charlotte. After one of the most revealing and trying experiences of my life, I realized that what children need most to learn how to read is one-on-one attention with an energetic bookworm. Most children receive this sort of specialized attention at home with their parents, but for those who do not, it is almost impossible to compensate for it in a classroom setting. For this reason, I felt incomplete after my summer experience ended. These children continued to need that attention during the school year! This is why I sought out the University City Regional Library, right in our backyard.



*Enjoying time at the Freedom Schools*

The library is one of many libraries in the Charlotte region, but it specifically serves the population in the University Area. In the past, the library had quite a steady relationship with students, but there was never a constant renewal of willing volunteers. By involving the Levine Scholars Program, I hoped not only to rekindle the past partnership between the University and the library, but also to

provide a reliable presence of kind, devoted young adults to the children who come to the library for tutoring. In the first semester alone, I was able to work with children in all grade levels, helping them with homework and also having that special time as a "reading buddy." Through the program's diverse skill set, we have students available for tutoring in math,

science, foreign language and even technology. Through building this relationship with the library and its patrons, I hope that the global issue of illiteracy can take the first step toward being diminished, right here in Charlotte, North Carolina.



*Reading the kids one of their favorites*

# Adventures on the Equator: What Research in the Andes Has Taught Me

By Celia Karp, Levine Alumna '14

Just four months after I graduated from UNC Charlotte and the Levine Scholars Program, I packed my bags and left for Ecuador to start a year of research and scholarship in the Andes Mountains. It was my sixth week working as a Fulbright Fellow in Guangaje, Ecuador, when I sat on the dirt floor of a makeshift community center, listening to tales of Andean mothers and mothers-to-be. "We will be forced to undergo surgery." "The doctors treat us like we are dumb." "It is too far away." "We cannot bring our midwives." "The rooms feel cold and bare." Rattled off in a rapid list, these were just a few of the reasons why the women in this small Quechua village chose to give birth at home instead of at the nearby hospital.

As I would quickly learn, each of these perceptions fortified the barrier between these women and the public health system. Collectively, these women's fears and the community's aversion to western medicine — a health system that differs so greatly from the village's indigenous healing practices — contribute to Guangaje's high maternal mortality and spontaneous abortion rates. Through focus groups and interviews with midwives, community health workers, physicians and women, it has become clear that in this village, situated 14,000 feet above sea level, issues revolving around pregnancy and birth are complex. Each story our research team encounters brings us one step closer to discovering the causes of these maternal health trends and what we can do to reverse them.

After studying public health, communications and Spanish at UNC Charlotte, I arrived in Ecuador eager to learn about the status of maternal health in this ethnically and geographically diverse country. I was excited to understand how indigenous Ecuadorian women learn about and access health care. I wanted to comprehend the struggles they faced with pregnancy, birth and postpartum care. Above all, I aimed to support research efforts that could help improve these situations.

My interest in indigenous health takes me far beyond the borders of Quito, Ecuador's capital where I live. Our research team ventures to populations located near volcanoes and situated hours from major cities in order to understand the delivery of health services and characterize intercultural health in Ecuador. Mornings often start well before 5 a.m. with long road trips through Ecuador's windy mountains to reach these isolated communities. As I gradually adopt the cultural practices and customs of the Quechua people, I have been welcomed into their homes, their ceremonies and their lives. Through dedication to understanding their culture, I have been given the opportunity to witness firsthand the conditions in which they live and the culturally traditional approaches they take to alleviate health problems.

Throughout the first six months of this grant, I have delved into a number of investigations related to maternal and child health, learning much about Ecuador's rich history and the monumental progress it has made over the past 15 years to advance population health. From establishing our project methods and goals to developing research instruments to cultivating relationships between our team and the communities in which we work to learning Quechua, the language of the indigenous people, there's never a dull moment in Quito. My time in Ecuador has been a true adventure and has already taught me more than I could have ever imagined.

Each day I continue to be fascinated by the distinctions between the American society in which I grew up and the Ecuadorian one to which I now belong. The bright



*Standing at 13,000 feet in the Andes Mountain with Quito's vast downtown area behind me*



*Smiling with community health workers, physicians, midwives and fellow researchers in the Ecuadorian town of Guangaje*



*Standing in front of Quilatoa Lake which fills the crater of an inactive Andean volcano*

and colorful woven fabrics, the high-pitched melody of fruit vendors on the streets, the warm welcome from familiar faces in Guangaje communities, the hushed sound of Quechua throughout the market stalls, the resplendent snow-capped volcanoes that fill the landscape, every aspect of this new country enchants me. I love how versatile the Fulbright fellowship is and how my research experiences broaden my interactions with this country and its people.

As I continue in this role, I look forward to enriching our knowledge of indigenous maternal health practices and learning from the Quechua people and their culture. I am so grateful for the experience I have had in the Fulbright Program, and I cannot wait to see where this journey takes me next.



*Laughing with one of the children from the Guangaje village in which she works*



*Feeding a llama during a visit to the town of Papallacta with the Ecuadorian Fulbright Commission*

*A woman from Guangaje demonstrates how she cleans lettuce before preparing lunch for the community*

# Countdown to Liftoff

By Bethany Hyde, Levine Alumna '15

As soon as I entered the Systems Engineering curriculum during sophomore year, I could feel the excitement and dread of the required yearlong Senior Design Project. I cannot deny I was excited to complete an application-based project working with an industry partner outside of UNC Charlotte, but how was I to decide amongst the many interesting and challenging projects?

When I was presented with the opportunity to be a member of the 49er High Power Rocketry Team, the answer was a resounding 'yes.' Every year a senior design team competes in the NASA Student Launch competition hosted at Marshall Space Flight Center in Huntsville, Alabama. The premise of this year's competition was to design a rocket and the Autonomous Ground Support Equipment (AGSE) to complete a hypothetical mission set on Mars. The problem centered around how to build the equipment and a launch vehicle that could transport a collected sample from the surface of Mars back into orbit. The AGSE would collect the sample and place and seal it on board the rocket, also referred to as the launch vehicle. The competition requirements state that the launch vehicle must be reusable and reach a launch altitude of 3,000 feet.

The first design challenge was safely and accurately controlling the altitude of a rocket with a very powerful motor strapped to the bottom. Our team overcame this challenge by designing a drag modulation system that controls the height of the rocket by extending flaps on the rocket to create resistance during ascent. As the Systems Engineer on a 10-person team, I was tasked with establishing a detailed project plan and assisting the team lead with creating purchase orders and ensuring coherence among the many different parts of the project.

Another aspect of the competition in which I was very involved was educational outreach. The team was required to actively engage students in hands-on activities to promote future generations of rocket scientists. Throughout the project we reached more than 400 middle and high school students. One of the highlights was working with Jefferson Cooper '17 to present our project to students at Discovery Place, a local science museum at which we both interned.

Although the project began in June 2014, the competition took place in April 2015. To verify our design and manufacturing, a sub-scale rocket was constructed during the fall semester. This rocket was approximately half the scale of the full-scale rocket and was used



*Bethany with the sub-scale rocket on a cold launch day*



*Putting in the shear pins and getting ready for the first full-scale launch*



*The team is preparing the on-board altimeters to record flight apogee and data.*

to verify design assumptions. The best reward of planning, designing and constructing a rocket is the test flight launch days. I remember the first time I was waiting for the countdown that launched the six-foot sub-scale rocket. The seconds felt like slow motion until that initial smoke began to materialize. As the rocket shot straight toward the clouds, I could hear the resounding screams of victory erupting from the crowd of both onlookers and teammates.

When the full-scale rocket was manufactured, assembled and

tested, I was integrated into the recovery system preparation team. During launch days, I worked to roll and pack parachutes, measure and prepare the black powder charges, and oversee the final assembly of the recovery system with the rocket. Moving beyond the classroom and being involved with such a passionate and driven team was such a motivating experience. In our year as a team, we accomplished an extremely challenging goal and had an invaluable experience working on a true research and design project.

# My Journey to Medical School

By Jake Emerson, Levine Alumnus '15



*Standing in front of Mt. Kilimanjaro, which I climbed following my time at the hospital*

My four years at UNC Charlotte were incredibly fun, challenging and transformative. As I prepare for the next chapter in my life, it has been very special to reflect on my successes, failures and experiences as an undergraduate. Looking back, I am truly amazed at how much I have changed and how much I have accomplished since entering the Levine Scholars Program as a freshman.

I will be entering medical school in the fall. Four years ago I would have told you that this was a ridiculous statement. First I thought I was going to be a mathematician, then an entrepreneur, then an actuary and then a geographer, but I finally found that my passions, interests and skills intersected in the field of medicine. A huge piece of this progression stemmed from the atmosphere created by my peers and advisors in the Levine Scholars Program. I was constantly challenged to not only find the areas in which I excel, but to find a field that would supply me with lasting excitement and fulfillment. I could not be more content with the decision I have made, and I am thrilled to take the next steps toward becoming a physician.

My summer experiences played a large role in my pre-professional transition to medicine. Following my sophomore year, I participated in the Cannon Summer Scholars Program at Carolinas Medical Center, which was the perfect introduction to clinical research and medical practice. I conducted a study on the relationship between asthma severity and obesity in particularly at-risk patients in the greater Charlotte area and also shadowed a number of physicians across various specialties. By the end of the summer, I knew I had found my passion. This led me to work in a hospital in rural Tanzania the following summer, which was an eye-opening experience. The contrast in healthcare from the United States was immense, and there was a severe lack of resources in every ward of the hospital. However, I was amazed by the ingenuity and resourcefulness of the attending physicians. The impact they made in their community was undeniable, and I am extremely grateful to have had the opportunity to experience healthcare delivery in such a different culture. I know I will always think back to my time in Tanzania as I work to become the best physician I can be in our ever-evolving healthcare system.

While I am awaiting admissions decisions from the University of North Carolina at Chapel Hill School of Medicine and The Brody School of Medicine at East Carolina University, I currently plan to attend Rush Medical College in Chicago, Illinois. I was very impressed with the facilities, curriculum, research opportunities and current students – and I could get used to living in the heart of Chicago! I would also complete many of my clinical clerkships at Cook County Hospital, the hospital upon which the television series ER is based. If I do officially enroll as a student at Rush, let's hope that I can learn to stay warm in the brisk winters of the Windy City!

When it comes to a medical specialty, I am still very much undecided. Nonetheless, this excites me in the same way that I was undecided when entering UNC Charlotte. I hope to utilize the same inquisitive and open mentality instilled in me through participating in the Levine Scholars Program as I explore the various specialties in the vast field of medicine. While I am particularly interested in surgical procedures and oncology, I would not be surprised to find myself pursuing residencies in very different areas of medicine down the road. I look forward to using the first couple of years of medical school to find that niche in which my passion lies.

After graduating from UNC Charlotte, I will embark on a two-month trip to New Zealand. A few close friends and I will travel around the north and south islands. I cannot wait to backpack in the beautiful mountains of Middle Earth ("The Lord of the Rings" series was filmed in New Zealand) and try some wild activities in the adrenaline sports capital of the world! Travel has been a crucial aspect of my experience over the past four years, and I believe this trip is the perfect conclusion to my life as an undergraduate and the beginning to my life as a professional!



*Dr. Herbert Bonkovsky, Senior Advisor for Research at Carolinas HealthCare System, following my final presentation for the Cannon Summer Scholars Program*



*Holding a recently delivered infant in the delivery room at Iringa Regional Hospital, Tanzania*

# Patchwork Epiphany - The Art Gallery and Auction

By Noelle Cornelio, Levine Alumna '15

*Visual arts have the extraordinary ability of fully occupying the imagination. While at work, the artist's mind gradually overlooks its immediate surroundings in favor of the sphere of its creation. These outlets for internal creativity include painting, drawing, sculpting and photography.*

From a young age I was taught how to work with pencil, charcoal, watercolor, acrylic and chalk pastel. However, during my freshman year at UNC Charlotte, the bustle of college life thwarted me from drawing, and I was afraid of losing my artistic talents. During my sophomore year, as I was brainstorming ideas for my Levine Scholar service grant, the idea of teaching art came to me like an epiphany. The idea resonated beautifully with my goal of using my skill and passion to benefit others. To start developing this idea, I made a list of my passions. My project was slowly pieced together like a patchwork after narrowing the list to healthcare, art, education and children. After much deliberation, I decided that my grant would fund teaching art at Levine Children's Hospital (LCH) and hosting a silent auction to raise money for its patients.

A hospital can be a scary, boring and challenging place for a child and his or her family members. Creating a piece of visual art can help buffer against the constant onslaught of emotions that run through the artist by fully engrossing his or her creative mind. When the Children's Miracle Network in Charlotte introduced me to Stacy, a local teacher who was similarly passionate about bringing the arts to LCH, the Patchwork Epiphany project was conceived. Under the caring supervision of the LCH volunteer coordinator, a group of enthusiastic UNC Charlotte students volunteered at the hospital with the aim of bringing the healing power of art to the patients and families affected by illness. Additionally, this project boosts the children's self-confidence by displaying their art in a gallery, raising their art awareness through lesson plans and helping them think creatively.

In addition to engaging kids at LCH, Patchwork Epiphany has always attracted volunteers from diverse areas of the student body at UNC Charlotte. Students studying art, computer science and kinesiology become art teachers, event planners and marketers when they join this project. Patchwork Epiphany benefits UNC Charlotte students by fostering a hands-on learning environment, stressing the importance of community involvement and helping young artists publicize their work.



*Charlotte skyline collage created at the Levine Children's Hospital*



*Noelle with the Levine Children's Hospital version of Van Gogh's Starry Night*

Last year UNC Charlotte students helped LCH participants create two large paintings each involving multiple panels of canvas. The first project was a 6'x5' imitation of Van Gogh's "Starry Night." This project represented the theme of light, which was evident in the hospital décor and in each of the LCH employees I encountered. The second artwork (4'x7.5') was based on a photograph taken of the Charlotte skyline by Austin Halbert '15. UNC Charlotte students outlined the skyline and painted the colorful sunset on the canvas, and children completed the artwork by collaging the iconic skyscrapers. These two pieces, along with art created by the UNC Charlotte students, were displayed at a family-friendly dessert reception at the Center City building in uptown Charlotte last year.

This year the art gallery will have the theme "The Four Seasons." UNC Charlotte students will collaborate with LCH participants to recreate four famous paintings depicting the seasons of summer, fall, winter, and spring. Like last year, the free gallery will be held at the Center City building and will feature the children's artwork, a variety of interactive activities for all gallery attendees and a dessert bar. With the help of two dedicated Levine Scholars Tanner Parks '16 and Gabriella Kroska '18 Patchwork Epiphany will host its first silent auction this year. UNC Charlotte students will auction their artwork to raise money for art therapy at the hospital.

Organizing art lessons and setting up galleries is not something the average biology and economics major learns in college, but I am extremely thankful to have had the opportunity to make this small difference in the Charlotte community by sharing my passion for the visual arts with my fellow students and local children. I believe that Patchwork Epiphany helps connect LCH and UNC Charlotte to the Charlotte community, and I hope that the project will continue for years to come.

# Teaching Programming Through Games

By James Budday

Which of these interests you more? Playing Flappy Bird or figuring out how to best represent moving objects on a non-moving coordinate plane? If you answered the coordinate plane problem, you could be a natural computer programmer! Your mind is geared towards thinking about abstract problems in a logical way.

If, on the other hand, you chose playing Flappy Bird (which I assume most of you did) you could still very well be a computer programmer – more on that in a bit!

If, by some miracle, you were honestly able to answer that you have no idea what Flappy Bird is then go ahead and give yourself a congratulatory pat on the back for having saved innumerable hours of your precious time. Maybe even have a nice laugh at the expense of the rest of us chumps with no self-control on your way to successful and worthwhile ventures.

Kidding aside, there is an undeniable and unavoidable connection between Flappy Bird and problem solving. One of the most basic issues when trying to make this silly mobile game is how to give the game the illusion of horizontal movement when the bird is incapable of moving left to right at all. That is to say, that in order to make Flappy Bird, you would have to figure out “how to best represent moving objects on a non-moving coordinate plane.”

This connection is the basis for the class I teach every Wednesday at Olympic High School with a few volunteers from the Computer Engineering program at UNC Charlotte. The students are interested in games and are curious about how to make them. We as teachers are more than happy to give them this knowledge. And the best part is that the same concepts that make up simple games also make up simple programming.

Flappy Bird is the first game I am teaching the class to program this semester. While they are learning to signal the game to end when a bird slams into a pipe, they are also learning how to handle computer programming events and changing conditions. When they are figuring out how to keep score, they are also learning about variables in programming. The entire time, they are learning to think like programmers because what they are doing, whether they know it or not, is programming. With a little time and concentration, anyone can learn to program.

In the two years I have been teaching at Olympic High School, I have been able to watch a lot of the same kids practice and improve. It is gratifying to see them start to grasp something new. It can be trying some days, but at the end of it all, I am most thankful that they continue to show up to my class and greet me as a friend. It shows me that even if it is not “cool” for a high school student to admit it, they are learning, and most importantly, they are enjoying it.

## Charlotte Dance Marathon 2014

By Anna Swartz, Levine Alumna '15

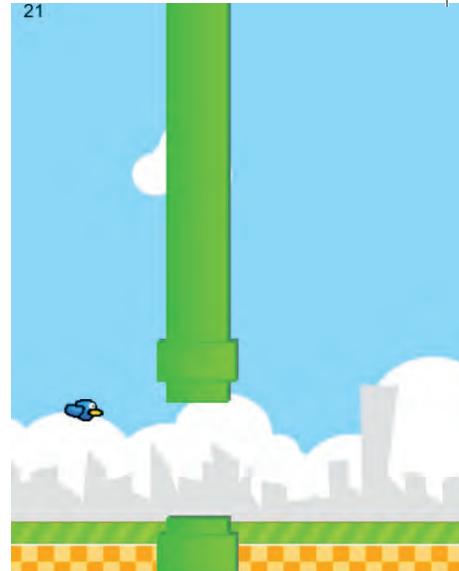
Growing up in Pennsylvania, everyone in every small town knew about THON, the name given to Dance Marathon at Penn State University. My high school actually started a mini-marathon to support THON the year after I graduated. With an organization that large and successful, it is uncommon to think back to how it all could have started more than 40 years ago. When the Levine Scholars Senior Class of 2014 decided to bring dance marathon to UNC Charlotte in 2013, I knew that I wanted to be a part of launching this initiative for my remaining two years.

Soon after the conclusion of UNC Charlotte's first Dance Marathon (DM) in November of 2013, I was appointed as the Executive Director for 2014. I knew that the second year of this initiative would need to focus on making this event a long-lasting tradition at the University, rooted in the student culture and experience. We started our DM fundraising year in April 2014 with a Kickoff Week. Charlotte DM Leadership was out on campus each day to reach out to students and to bring awareness to our cause.

Seven months later it was time for the actual marathon; time to stay up all night and dance for 12 hours in celebration of the families from the Levine Children's Hospital and the money we fundraised for them. As the director, my day started at 8 a.m. getting ready for early check-in; taking a test at 9 a.m.; and then making the final preparations for the event at 7 p.m. It may seem that twelve hours is a long time, especially overnight, but it flew by. Planning the logistics for the DM was an extensive process, but the execution of an event that size was an undertaking in itself. I monitored the entertainment throughout the night and even jumped up on stage on numerous occasions. I helped coordinate the event, music and food, and I also participated in the morale games and competitions. Of course, I made sure to dance whenever possible!

The 2015 Charlotte DM Leadership Team has already started planning for this year's marathon and will be implementing a variety of new and exciting fundraisers to connect Levine Children's Hospital with the campus and surrounding community. While we achieved our goals this year, the leaders for 2015 have set an even higher bar for this organization and for UNC Charlotte.

Taking the lead in this organization as Executive Director has been the most fulfilling experience of my college career. It pushed my boundaries as a leader, and it gave me the opportunity to connect with and impact hundreds of students at UNC Charlotte. I am fortunate to stay in Charlotte post-graduation and to be a part of the greater impact of Charlotte DM in the community.



*Example of our work*



*The Dance Marathon Executive Team*



**UNC CHARLOTTE**  
The Levine Scholars Program  
9201 University City Boulevard  
Charlotte, NC 28223

## The Levine Scholars Program

The Levine Scholars Program is a four-year scholarship that includes full tuition, room, board and four summer experiences, including study abroad, which will develop leadership skills and social awareness. In 2010, the inaugural class of Levine Scholars enrolled at UNC Charlotte and approximately 20 scholarships are awarded to high school seniors every year. The Levine Scholarship is valued at \$105,000 for in-state students and \$155,000 for out-of-state students over four years.

Levine Scholars are talented high school seniors from across the United States whose accomplishments epitomize the values of philanthropists Sandra and Leon Levine, including a demonstrated commitment to community service, intellectual curiosity and the capacity for ethical leadership. Through community engagement, mentoring relationships with civic and

business leaders in Charlotte, and a rigorous academic program, Levine Scholars develop the characteristics necessary to produce positive change in the communities in which they live and work. Scholars are able to turn their community service interest into actions with community service grants of \$8,000 to support their work in the community.

It is this unique connection to Charlotte – its resources, leaders and challenges – that differentiates this program from other scholarships of its kind. The program is specifically designed to expose Levine Scholars to the urban culture of a thriving city and to engage them in service to address needs of the citizens of Charlotte.



*Levine Scholars Class of 2015*