“You can come out of study abroad with a critical lens; you can really develop some of those multicultural belief systems that we want for future teachers. But how can we take what we know about what’s happening around [students’] experiences of culture shock and help them use those experiences in their practice later as teachers?”

Peggy Shannon-Baker
Educational Studies doctoral student and Graduate School Dean’s Fellow
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Cleo Leung
Flute, DMA
Does the Metal Make the Flute?

Does the type of metal used to make a musical instrument affect the sound it produces? If you ask a physicist and a musician, you may get different answers. A physicist would tell you that an instrument’s material does not matter, because it is the shape of an instrument that determines sound. Yet musicians disagree. They believe that if you have two identically shaped instruments, but one was made of silver and the other gold, the instruments would produce different sounds. “As musicians, we’re so weird about changing even the little bits of material,” says Cleo Leung, recent graduate of the doctoral flute program. “Everyone’s so certain there’s a different sound.”

Traditionally, flutes are made from silver, gold or platinum. However, Cleo uses a headjoint made of tantalum (a rare, hard bluish-gray metal). She says that by switching out this one part of her instrument, she gets more power and a “good, solid meaty sound.” Cleo’s tantalum headjoint was designed by her advisor, Dr. Bradley Garner. A professor in the College-Conservatory of Music, Dr. Garner works with a flute-maker to produce headjoints, often using atypical metals like tantalum, niobium and tungsten.

While there is a great deal of conventional wisdom regarding what metal should be used to best compliment a given musical situation, very little research has been done on this topic. A few studies tested whether people could hear a difference between flutes of different metals—and the resulting data suggested that no, they could not. But Cleo sees a big problem with these studies’ methodologies: all flutes were played by people. “We all, as musicians, have an idea of what a good sound should sound like, so maybe everybody’s shooting for a similar sound,” she says.

So Cleo decided to do her own testing without using a human factor. With the help of physics professor Dr. Howard Jackson, she designed her experiment. To replace the human player, Cleo used a stream of compressed nitrogen directed through a beaten copper tube, which was shaped to resemble the form a flutist’s mouth makes while playing. This way, she could control the flow rate, the angle at which air blows across the mouthpiece, and other factors to ensure that the situation would be consistent for each headjoint tested.

Cleo conducted her experiment in the lab of engineering professor Dr. Ephraim Gutmark. She needed the lab’s recording equipment to gather her data. “They normally use [the lab] for jet propulsion engines,” Cleo says. “Actually, they had a jet engine set up in the back while I was working. We just walled it off with acoustic tiles and built a fort around my set up and the microphones. That was a lot of fun.” Cleo tested seven headjoints total, each with a different metal composition or made by a different company. She tested a basic Yamaha silver headjoint, a silver headjoint made by Dr. Garner’s headjoint company (Garner Headjoints), a silver headjoint with a gold riser around the mouth hole, a 14 karat gold headjoint, and headjoints made of tantalum, niobium and tungsten.

After collecting and graphing the data for each headjoint, Cleo analyzed her findings. “I definitely was able to see differences between the headjoints of different metals, just in terms of the way the harmonics were behaving,” she says. “Clearly there’s something to what the musicians are saying; there are differences between each headjoint.”

Cleo intends to continue her investigation into headjoints by conducting a playability study with Dr. Garner’s headjoints. “One of [Dr. Garner’s] claims—that I definitely believe—is that it’s easier to play in tune on any note with his headjoints than with other headjoints,” she says. She plans to conduct a blind study, drawing from students who would fit the headjoint market profile—upper-level undergraduate and graduate students who are pursuing a performance career. Personally, Cleo knows she finds Garner’s headjoints easier to play on, but that knowledge isn’t enough. “As musicians, we need to embrace the less fuzzy, more hard-science part of [music],” says Cleo. “There’s plenty we intellectually know, just from years of playing around, but there’s not enough I feel that’s really codified.”

To fit into a case, a flute breaks down into three parts. The top part, which has the mouthpiece hole and lip plate, is known as the head joint. The body and foot joint hold the keys used to produce the various notes.
Green Campus, Green Research, Green Roofs: A Dedication to Tomorrow’s World
“Being a scientist is like being a puzzle solver. You’re trying to figure out how things work. You’re looking for clues and trying to design experiments so that you can get the information you want. It’s very fun in that way; it’s like you’re playing this game all the time, trying to learn more about some question you think is important.”

– Dr. Ishi Buffam, Assistant Professor, Biological Sciences and Geography

UC is home to a plethora of puzzle solvers; every department is full of them. Whether they study perceptions of time, seek a cure for epilepsy or investigate resilience in urban youth, researchers at UC are filled with a burning desire to learn more about the way the world works—and improve it. For the fifth year in a row, UC has been named as one of the top green colleges by the Princeton Review, and cutting edge research from across the university contributes to this ranking. This dedication to being a green, sustainable campus has led to some exciting new research paths for graduate students and professors.

One of the many avenues for green research at UC centers on water. Professors and graduate students across department lines are working to discover theoretical and practical solutions to some of the world’s water issues. Amy Townsend-Small, professor of geology, is researching the impacts of hydraulic fracturing on water quality. Hongxing Liu, professor of geography, and Qiusheng Wu, a geography doctoral student, are at work tracking drought patterns across the United States. The environmental engineering program boasts a number of researchers who investigate issues regarding environmental hydrology and water quality. One such researcher is doctoral student Xiaodi Duan, who is developing a process to break down pharmaceuticals and other contaminants in drinking water.

Ishi Buffam, assistant professor of biological sciences and geography, and Mark Mitchell, biological sciences doctoral student, have been kind enough to share the details of their research on water runoff from green roofs. Their preliminary findings have already garnered the attention of green roof designers, and the final results could help refine the way green roofs are implemented in cities.
Green Roof Research: Watershed in the City

Dr. Ishi Buffam, Biological Sciences & Geography
Mark Mitchell, Biological Sciences, PhD

Looking out over the Cincinnati skyline, you see a beautiful mix of modern and traditional architecture. Often, the majority of that view is ruled by stone, metal and concrete. Yet some of the roofs bear vibrant pockets of verdant foliage. These green roofs offer numerous environmental benefits; however, the buildup of nutrients in green roofs could pose a risk to local aquatic ecosystems. Two University of Cincinnati researchers seek to understand why this buildup occurs and what can be done to keep these excess nutrients out of local watersheds.

Green infrastructure in urban spaces offers the chance to bring back elements of natural, vegetated ecosystems to a largely concrete landscape. “Vegetated spaces within the urban landscape are often created with the purpose of performing some ecosystem services, such as retaining water where it falls rather than having it run off the surface—like it would off a paved surface,” explained Dr. Ishi Buffam, an assistant professor in biological sciences and geography.

Dr. Buffam and Mark Mitchell, a doctoral student in biological sciences, are studying the runoff water from green roofs to discover what effect the plants from the green roof have on water quality. They are currently looking at the green roof located at the Civic Garden Center in Cincinnati, as well as a few other locations in the surrounding area. Mark joined this research project when he began his doctoral program in fall 2013. He still has a few years of fieldwork—which includes tasks like collecting and testing water samples—and analyzing data ahead of him before he’ll be ready to write his dissertation.

“I’m looking at green roofs as a kind of ecosystem. You can study a forested watershed to determine the nutrients that are coming off that watershed into the waterways; I’m looking at a green roof as a small watershed,” said Mark. “So [I’m asking] how the plants interact to affect nutrient runoff. We are measuring the nitrogen and phosphorous, in particular, coming off these green roofs.”

Currently, green roof designs include a layer of specifically selected plants, then a layer of soil substrate (man-made soil), and underneath it all, a layer of drainage material. The soil substrate is meant to absorb water, but it also has a specific mix of nutrients in it to sustain the plants. The nutrient mix in the soil substrate uses phosphorous and nitrogen, which when released at high levels into local waterways could contribute to out of control algal growth. Spikes in algal growth can cause reduced oxygen in local waterways and result in the deaths of other organisms—like fish and water plants—dependent on the oxygen in the system.

Studying the runoff from green roofs helps researchers like Dr. Buffam and Mark understand the nutrient cycling involved. They have noticed that during the summer months, the levels of nitrogen and phosphorous coming off the green roof are peaking. Dr. Buffam and Mark believe that the increase in temperature is causing the soil substrate to decompose at an increased rate, which releases extra nitrogen and phosphorous into water runoff.

“So the question is, what’s causing [this peak in nutrients]?” asked Mark. “Is it the microbes in the system, is it something to do with plant activity in the summer? There are all of these really interesting questions that have come out of this research from the Civic Garden Center roof, as well as some other plots at our field station.”

As the research continues, Mark and Dr. Buffam will move into working with more green roofs. There are two green roofs in Northern Kentucky that they have started to examine—in Sanitation District No. 1 as well as at Turkey Foot Middle School—to see if the patterns they’ve already recorded occur in other green roofs. Later, they’ll focus on lab studies that will attempt to isolate specific variables (like a different ratio of nitrogen and phosphorous in the soil substrate) to dig deeper into the search for what causes this excess release of nutrients.

“Being a scientist is like being a puzzle solver,” said Dr. Buffam. “You’re trying to figure out how things work. You’re looking for clues and trying to design experiments so that you can get the information you want. It’s very fun in that
way; it’s like you’re playing this game all the time, trying to learn more about some question you think is important.”

Mark and Dr. Buffam agree that one of the most rewarding parts of working on a project like this is that the results are directly applicable. Dr. Buffam is already in contact with a few people in the green roof industry to share the preliminary research findings. He hopes that making some small changes to the way green roofs are constructed will result in large improvements in the water quality coming off the roofs.

A green-er design will hopefully prompt more businesses and organizations to implement this green technology, sparking a future of green-roof-filled skylines in cities everywhere. Thanks to researchers like Dr. Ishi Buffam and Mark Mitchell, this vision of the future is not only possible, but probable.
Every year, graduate students gather from the university’s 300+ degree programs to share their research and hone their presentation skills. The Graduate Poster Forum serves as a “dress rehearsal” for many students who are preparing to present at a regional or national conference.

As a professional development opportunity hosted by the UC Graduate School, the Graduate Poster Forum rewards exceptional poster design and outstanding oral communication. UC faculty members and local scientists volunteer to evaluate posters within their area of expertise, providing valuable feedback and a numerical score.

This year, over 130 students entered posters or, in the case of the Master of Fine Arts gallery, showed works of art. Award-winning posters covered a wide range of topics, from employees’ “online” work breaks to the 1940 Nazi propaganda film “Jud Süss” to a new approach for selectively targeting cancer cells.

### 2014 Award Winners

#### Arts & Humanities

**Michelle Dietz**, *Germanic Languages & Literature, MA*

#### Life Sciences & Medicine

**Clifford Cookman**, *Molecular, Cellular & Biochemical Pharmacology, PhD*

**Moen Sen**, *Molecular & Developmental Biology, PhD*

**Jeremy Kinder**, *Immunobiology, PhD*

**Shatrunjai Singh**, *Molecular & Developmental Biology, PhD*

**Jeremy Kinder**, *Immunobiology, PhD*

**Shatrunjai Singh**, *Molecular & Developmental Biology, PhD*

#### Physical Sciences & Engineering

**Syed Abbas**, *Civil Engineering, PhD*

**Ayse Arslanargin**, *Physics, PhD*

**Anna Daigle**, *Chemistry, PhD*

**Anish Kizhakkekkara Vadukoot**, *Chemistry, PhD*

**Andrew Schriner**, *Environmental Engineering, PhD*

**Zhuting Sun**, *Physics, PhD*

**Parasto Alsadat Kasaie Sharifi**, *Business Administration, PhD*

#### Social & Behavioral Sciences

**Sung Doo Kim**, *Business Administration, PhD*

**Daniele Bologna**, *Psychology, PhD*

**Marina D. D. Vargas**, *Psychology, PhD*

**Parasto Alsadat Kasaie Sharifi**, *Business Administration, PhD*

#### Master of Fine Arts Gallery

**Michelle Walker**, *Fine Arts, MFA*
At the 2014 Graduate Poster Forum, graduate student Syed Abbas presented his groundbreaking dissertation work: a structural engineering model that paves the way towards safer building structures in earthquake zones. This new technology provides an efficient, cost-effective method to test sophisticated building designs. Syed's model, which he calls Advanced Hybrid Simulation (AHS), examines how a building's frame as a whole reacts to the forces of an earthquake.

While current engineering models exist that can test how simple steel or concrete building frames will react in the event of an earthquake, researchers aren't able to use them to test the complex structures (buildings containing large amounts of complex components, such as beam-column connections) that are found in most cities. However, Syed's new model is capable of doing just that. AHS builds upon the capabilities of existing Hybrid Simulation (HS) models to test more sophisticated structures found in real-world cities.

In order to fully understand the way AHS functions, it's first necessary to look at the way current HS models work. HS models combine two types of testing: computer simulations and physical testing done by researchers in a laboratory. Simple components (such as beams and columns) can be tested through computer programs because their reactions to ap-
A small building frame, with beam-column connections highlighted. A single beam-column connection (in red) is selected for laboratory testing: a model of that connection is built and then subjected to the various forces and stresses created by earthquakes. Computer testing is used for all other beam-column connections (in green). The Advanced Hybrid Simulation model uses the data gathered from laboratory testing to predict how each beam-column connection will fare, taking into account its position within the framework of the building. Original diagram created by Syed Abbas.

plied forces (like those of a simulated earthquake) are well understood. However, more complex components (such as beam-column connections) must be physically tested in the lab. These physical tests are necessary because their behavior under applied force is not well understood mathematically (due to factors like slippage, cracking and friction). When both types of tests have been run, the results are analyzed to form a comprehensive picture of how a building and all of its components would behave under the stresses associated with an earthquake.

While HS technology is useful, it does have its limitations. “Testing even a simple structure [such as one with few beam-column connections] far exceeds the testing capabilities of any structural engineering lab in the world,” says Syed. “This has led to researchers using highly simplified models, compromising the accuracy of the results [for more complex buildings].” In order to deal with these limitations and create a more accurate model for real-world buildings, Syed had to think outside of the scope of current HS models. He decided to modify parts of the testing process while keeping the framework of a traditional HS model.

Both computer testing and physical testing still occur during AHS, but their format changes. Rather than physically testing each individual complex component (such as a beam-column connection) that exists in a building, Syed’s model tests each type of component. Researchers would test one single beam-column connection, then use artificial intelligence to process its reactions to seismic activity. These results, combined with previously developed models, would be used to predict the reaction of all similar complex components (like beam-column connections) throughout the entire building. This process is repeated with each type of complex component until all of their reactions to seismic activity are understood. All results for the building’s complex components would then be combined with the results for computer-tested components (like beams and columns). This would provide a very realistic picture of how a building would react to an earthquake.

So why is this new technology so useful? AHS models provide the opportunity for researchers in both academia and industry to spend less time, money and lab equipment to test earthquake recovery systems. Those systems could be tested and improved before they are put into a building, meaning they are sure to be more effective in the face of an actual earthquake. With less physical tests involved, the use of AHS becomes applicable and useful for buildings found in real-world cities. If implemented in the future, this new model could be used to create safer, more resilient buildings on a shorter timeline.
UC Graduate Student Satisfaction

Overall Satisfaction

Curriculum

Career Development

Faculty Satisfaction

Graduate Aid

Thesis / Dissertation Advising

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Excellence in Doctoral Mentoring Award
Dr. Scott K. Holland, Pediatrics

The Excellence in Doctoral Mentoring Award is presented each year to a faculty member who demonstrates outstanding and sustained guidance of doctoral students. Recipients are selected for this award because they intellectually challenge students, encourage them to work towards scholarly independence and help students obtain the resources they need to succeed. These mentors create a strong foundation of support upon which students can build their own professional successes.
Dr. Scott K. Holland, faculty member in the College of Medicine, possesses an impressive list of professional accomplishments. He teaches as professor of radiology, pediatrics, bioengineering, neuroscience and physics within the otolaryngology & neuroscience department. He also fulfills two leadership roles as the director of the Pediatric Neuroimaging Research Consortium and as the director of research in patient services at the Cincinnati Children's Hospital Research Foundation. Furthermore, his current research focuses on the applications of MRI brain imaging in pediatrics, particularly related to brain development and injury, and his discoveries in neuroimaging have resulted in numerous publications and breakthroughs in the field.

It speaks volumes, then, that this incredibly talented and accomplished professor has taken the time to use his knowledge and skills to cultivate the minds of tomorrow’s researchers. When asked what inspires him to devote so much time to student mentoring, Dr. Holland replied, “As a senior scientist, I know my field very well. Sometimes I am blinded by that knowledge and the interaction with graduate students un-blinds me. Teaching a subject to a new student causes the teacher to look at the topic in a new way too, and to recognize that some of the simple questions still are not answered. This kind of dialogue can lead to new discovery. I count on my students to challenge me at least as much as I challenge them.”

Yet the current and former students who nominated Dr. Holland say that his efforts in mentoring were much greater than just providing a challenge. They speak in glowing terms of his professionalism, his academic encouragement and his dedication to his students above all else. They speak of someone who supports and assists in their professional development with each student’s particular career goals in mind. Many of his former students hold positions within the University of Cincinnati hospital system and at other top universities across the country. These students attribute much of their success to Dr. Holland. Most importantly, current and former students alike speak of Dr. Holland as a man who goes out of his way to be a mentor on every level, relishing in the triumphs of his students and helping them work through their failures. This outpouring of support is the most telling proof of Dr. Holland’s effectiveness as a mentor.

Yingying Wang, a research fellow in cognitive neuroscience and developmental medicine at Boston Children’s Hospital, says that Dr. Holland went above and beyond the call of duty during his mentorship, providing more than scholarly support. “When the road to my Ph.D. seemed overwhelming, as it sometimes does,” she said, “Dr. Holland was always there to keep me focused on the right path. I am deeply grateful for his kindness and sense of humor.”

Rola Farah, a research fellow in the Communications Science Research Center at Cincinnati Children’s Hospital, testified that Dr. Holland “taught me the art of critique, fostered my creative thinking and coached my leadership and teamwork skills. His innate ability to recognize and leverage the strength of his students while leading the scientific community in the field of neuroscience and neuroimaging, creates the perfect example for his students and all of his graduates in their new scientific appointment.”

Dr. Holland’s students unequivocally state that he has been an integral part of their academic careers. His career successes, his students’ accomplishments and the stories of his exemplary efforts in molding the scholars of tomorrow combine to paint the picture of a mentor who has had a truly powerful impact on his mentees.
Graduate School
Dean’s Fellows

Dissertation completion fellowships support outstanding students during the last stage of their research. Finding a means of support can be difficult for doctoral students who are close to finishing their dissertations, especially during tough economic times.

The Graduate School established the Dean’s Fellowship to make their search for funding a little easier. The fellowship provides students with $20,000 and a full tuition scholarship to help them complete their dissertations by the end of the 2014-15 academic year.
As a part of Dr. Yana Zavros’ lab, Amy and her fellow graduate students each work with some aspect of the protein Sonic Hedgehog (SHH), which is primarily studied in developmental biology. It’s very important in regulating lymph growth and development in the brain, but its role has also been investigated in many other systems. “In the stomach, SHH is known to promote differentiation and maturation in cells,” says Amy. “It repairs tissue, and during certain infections, can help clear [the infection] or help initiate an immune response.”

Amy’s research looks specifically at the effects of SHH on gastric (stomach) ulcer repair. Her project deals with discovering how SHH can regulate ulcer repair and the mechanisms that are involved with that process. Amy explains, “The protein SHH can regulate that [ulcer repair], specifically when it is secreted into the circulation; it can promote repair. When it’s not present, you see inhibited repair and development of large ulcers that can lead to gastric cancer.”

Amy has recently published a chapter on her research regarding SHH regulation ulcer repair, and she is now focusing in the mechanisms involved in ulcer repair. During the 2014-15 academic year, she’ll continue her gastrointestinal experimentation using stem cell rich cultures transplanted into stomach tissue. Amy has determined that in mice, gastric organoids (organ-like structures made of stem cells) can help speed repair, so the next step is to refine the model and apply it to human tissue. If the model is successful, it could result in an entirely new way of treating ulcers.

Because the research is in such a preliminary stage, a real world application for patients may take a while to develop and could come in a variety of forms. Amy speculates that one possible treatment could involve small biopsies taken from an individual, cultured, and then given back to that individual. These cultures, which could be given in a pill or inserted with a scope, could help speed repair in stomach tissue damaged by ulcers.

Amy would like to continue researching the GI tract after graduating as she pursues a postdoctoral fellowship—though she’s not sure where that will be. “I like how applicable this research is. You can see a direct translation into healthcare,” she said. “It’s really exciting and has a lot of potential to be very impactful.”
Steven Gilday
Biomedical Engineering, PhD & Medical Scientist Training Program, MD
Completing a medical degree and a research-heavy doctorate at the same time may seem like a daunting task to some, but to Steven Gilday, it seems like a dream. “This [dual degree] program avoids the disconnect between doctor and research or researcher and patient,” he says. “You get the best of both worlds.” Although Steven will have two years of medical school to go after he finishes his doctorate in 2015, he is already thinking ahead to his future dual career as a practicing doctor and active researcher.

The Medical Scientist Training Program at UC prepares students like Steven to be physician-scientists with simultaneous MD/PhD coursework. However, Steven’s pursuit of a degree in biomedical engineering during his Medical Scientist Training Program is uncommon. Most students choose a doctoral degree that is also housed within the College of Medicine. Steven’s choice gives him a unique skillset that integrates theoretical and applied knowledge from both engineering and medicine into patient care. Currently, he is working on exciting dissertation research that could lead to a novel approach to tendon healing.

During the 2014-15 academic year, Steven will continue his research in a functional tissue engineering lab that focuses on tendon and bone issues. The lab’s goal is to understand how tendons develop as the body grows, how these tendons heal once they’re injured, and ultimately how scientists could engineer a synthetic tendon to replace a damaged or injured tendon in a human patient. Steven’s research in particular deals with Indian Hedgehog (IHH)—a protein that is found in the human body and is a part of tendon development—and its ability to speed the healing process in tendons.

The interdisciplinary nature of his research requires Steven to collaborate with a variety of experts. “We have so many different people working on this project, and getting to work with all of these different areas is really unique,” says Steven. “I think most PhD students delve deep into a very specific area, and typically, they only get to work with people that are intimately familiar with that area. But I’ve been working with engineers, biologists, surgeons, statisticians, all of these different people. Those collaborations have been really interesting and fun.”

Working with this multi-disciplinary team, Steven has developed a bio-absorbable polymer scaffold (surgical implant) to deliver IHH. The polymer scaffold is infused with IHH and implanted into the damaged tendon, where it slowly degrades; the degradation of the scaffold is what releases the IHH. Steven implants the polymer scaffold into mice with damaged patellar tendons (the tendon that holds your knee cap to your tibia), and then he observes the mice as they heal, measuring how effectively the tendons heal in the presence or absence of IHH. While Steven’s research uses the patellar tendon as a model, it could be applied to any tendon in the body.

In the future, this kind of technology could become the standard method for dealing with tendon injuries for all patients. Presently, standard treatment options are to do physical therapy, which can last for months, or undergo surgery. But often, these options are not completely successful—and result in long-term problems, such as chronic pain and instability in the joint. This IHH-infused polymer scaffold implant provides the possibility for quicker, more effective tendon healing.

Steven’s professional successes will doubtless continue as he straddles the line between research and clinical work. Ultimately, he would like to see patients in a clinical setting while running a research lab. “You can have hands on exposure to your patients and are actively treating them, which allows you to have great insight into some of the things they’re dealing with,” he says. “You can take that and study it in the research lab. Any discoveries in the lab, you can take back and apply them to patient care.”

Due to their “best of both worlds” mindset, innovators like Steven will have the expertise and the opportunity to change the way the medical field handles patient care. Steven said that his MD/PhD program, and the subsequent research he’s done during his time in the program, allows everything “to translate back to the patient and human health in general. And that’s really what it’s all about.”
Cross-cultural interaction takes a variety of forms; it can be as small as a conversation with a co-worker or as large as stepping into another country for a long period of time. Peggy Shannon-Baker, a doctoral student in educational studies, is using her dissertation research to delve into the way culture shock is related to personal growth—particularly focusing on undergraduate study abroad programs for education students.

Peggy’s interest in the effects of study abroad programs on students stems from her own experiences studying abroad in Ireland and traveling with a group of education students to Tanzania and Kenya. “I really believe in the transformative power of study abroad programs. They force students to see how life is in other parts of the world,” she said. “[Students] have to recognize the importance of understanding other perspectives and bring it back and transform it into their practice.”

During her trip with the education students, Peggy realized that some of the things students were experiencing—like homesickness, disorientation and isolation—were due to culture shock. This prompted Peggy to explore the concept of learning life-changing lessons while in difficult or uncomfortable situations. “We learn the most difficult things when we are uncomfortable,” said Peggy. “But you can also push too hard and [students] regress in their learning. I want to find the middle ground with culture shock.”

During the 2014-15 academic year, Peggy will work on teasing out the nuances of culture shock that can lead to truly transformative learning. For her research, Peggy draws from course data, observations made during study abroad trips, arts-based data (art created by research participants that is used as data) and interviews conducted before and after trips. This combination of data types is what’s called a mixed-method study, where quantitative and qualitative approaches are deliberately mixed into a single study.

Not many mixed-method studies are done with culture shock, but Peggy hopes that this collection of different types of data will highlight something new or different about the nature of culture shock and its effects on students—especially those students who will become teachers. “You can come out of study abroad with a critical lens; you can really develop some of those multicultural belief systems that we want for future teachers,” explained Peggy. “But how can we take what we know about what’s happening around [students’] experiences of culture shock and help them use those experiences in their practice later as teachers?”

Because she’s working with UC International, the results of Peggy’s research will go towards improving study abroad trips for all students. “I’m using exactly what I learning; the research and the application go hand-in-hand,” she said.
What would you do if you woke up tomorrow, and there were no more calendars—or the ones that were left were completely foreign to you? The concept of time has always been interesting to researchers, but people’s perception of time is a component of history that has remained largely untouched by academia. Nicole Lyon, a doctoral student in European history, is addressing that oversight. Her dissertation explores the ways people experienced and perceived a year (as a unit of time) in early modern Germany through the use of cultural historical resources like calendars, sermons, pamphlets and poems.

While Nicole has always been acutely aware of the passing of time, an epiphany on campus inspired her to make it the focus of her research. “I was walking past the Tangeman building on campus and the clock chimed three o’clock, even though my cell-phone said it was only 2:50. For some reason, I found this quite jarring—there was no way to know for sure exactly what time it was, or which time was correct and why, and who got to choose,” said Nicole. These musings made her want to understand the way people perceived time throughout history, especially within Germany, where her specialty lies.

Several times throughout history, world leaders changed the way time was perceived. Leaders would abolish holidays and saint days, remove temporal landmarks serving important cultural functions (such as the first day of spring) and introduce completely different calendars. In these times of upheaval, people wrote about their confusion and their efforts to understand how to live meaningfully in a new system of time. Nicole analyzes texts from the 1500s to understand the people behind the history. “I try to look at everything they were trying to express and to tell their stories—voice their hopes and concerns—in order to figure out how they defined and experienced the year as a unit of time, even as the times were changing,” she said.

Nicole’s dissertation demonstrates that the people of early modern Germany had an understanding of time that was largely informed by spiritual concerns—which could be anything from astrology to liturgical holidays or even nature—and also took into account the civil time frames. This complicated interaction between the various time frames that people clung to created an even more complicated way of experiencing time. Nicole’s work to comprehend this could help place more emphasis on understanding the common people and how their daily lives were affected by radical changes made to their concept of time.

“So few of us historians notice comments about time in our sources, because they’re everywhere,” said Nicole. “But when you really start to pay attention, you start to see that people of the past lived not only in a different time period, but in a different time perception than we do.”
In 2010, in the storeroom of the Chora Museum in Greece, Emily Egan puzzled over groups of pottery shards unearthed at the Palace of Nestor. In each hand she held similar fragments from two different rooms. Cylindrical in shape, they were thought to be part of a lid, according to the excavation report. In one magical moment, she fit the two pieces together, flipped them over, and beheld the rear end of a wheel-made bull figure—the first ever to be found in the western region of Greece.

Located near the west coast of mainland Greece, the Palace of Nestor at Pylos (Pē-los) was discovered in 1939 by famed UC archeologist Carl Blegen and excavated from 1952 to 1956. Emily has studied the palace since her first semester as a doctoral student. Drawing from her expertise in art history, archeology and Bronze Age iconography, Emily is conducting an extensive analysis of the palace’s art and style, which has yielded answers to some of Blegen’s unresolved questions.

For her dissertation, Emily is reanalyzing “the corpus of stuff” found in the throne room at Pylos: the ceramics, metal finds, architecture, floor painting, stone objects and built features (ex. the hearth). She is examining “what collectively these artifacts say about [the] function [of the throne room] and to what extent they possibly represent something totally different than what we expected.” Of particular in-
terest to her are the markings on one of the floor tiles cited in an excavation report. After re-cleaning the tile herself, Emily made another important discovery: where Blegen saw an enigmatic mark on the tile that might designate a place for dignitaries to stand, Emily found an artist’s grid—and a mistake in the gridlines that the artist had caught and redrawn. “To me, this signals ‘we fix mistakes,’” she said. According to Emily, these grids are significant not only because they are the first examples of artist grids used in floor painting on the Greek mainland, but also because they demonstrate intention. Previously, scholars attributed the unique (and unexplained) design features at Pylos to the sloppy and careless craftsmanship of their artists. However, Emily has amassed evidence to the contrary.

At other Mycenaean palaces, floor tiles were designed to represent either an all-stone or all-carpet surface. However, after a detailed analysis of both floor and wall motifs at Pylos, Emily found pieces of floor tiles with the same intricate patterns commonly used in textiles. She concludes, “The artists are actually cleverly utilizing plaster to create a surface that supersedes reality,” and that the floor was intentionally crafted to reflect a deliberate hybrid of both stone and carpet. And, addressing the persistent debate about who uses the throne room and for what purpose, Emily’s evidence points to an exciting answer: “I think the space was actively meant to showcase the supernatural or divine powers of the person who was seated in the throne.”

After graduation, Emily will continue to analyze the surrounding rooms and wall paintings at Pylos with the goal of creating a synthesized picture of the prehistoric palace. She will continue “to look at art as a way to understand how ancient societies understood themselves.”
In fall 2012, UC transitioned from quarters to semesters. This leads to a significant inequality in the reporting period used for our 2012 reports and it affected some numbers given here.
The Yates Scholars Program

The mission of the Yates Scholars Program at the University of Cincinnati is to enrich the educational environment for all graduate students by supporting the recruitment and retention of members of underrepresented groups who have high potential for academic success in graduate programs at UC.

The Yates Scholars Program began in 1966 as the Graduate Intern Program in the UC Institute for Research and Training in Higher Education with a mission to identify, admit, support and mentor promising individuals of African-American and Appalachian heritage entering UC graduate programs. In 1978, the program became part of the Division of Graduate Studies and Research and was renamed the Graduate Minority Fellows and Scholars Program. The following year, the program expanded to include students from other minority groups.

In 1995, the program was renamed to honor Dr. Albert C. Yates, the first African-American person to serve as vice president and university dean for Graduate Studies and Research at the University of Cincinnati. Dr. Yates joined UC as a professor of chemistry in 1974. He served as the vice president and university dean for Graduate Studies and Research from 1976 to 1980. Following his departure from UC, Dr. Yates served as provost for Washington State University in Pullman. In 1990, he was appointed to the president of Colorado State University, a position he held until his retirement from academia in 2003. His lengthy career demonstrates his strong leadership in academia and his commitment to improving education.

Every year, UC graduate programs—from communication sciences and disorders to economics to choral conducting—nominate incoming students for the prestigious Yates Scholars Program. For fall 2014, the Graduate School welcomes eight new Yates Scholars. New and continuing scholars receive a stipend and a tuition scholarship. In addition, each student is paired with a faculty member from his/her program, who will act as a guide to the program and the university. Barbara Zoretic, inducted into the Yates Scholars Program in 2012, is one of the many UC students who upholds and exemplifies the Yates Scholars Program’s vision of academic excellence.
Barbara Zoretic stepped into the physical therapy doctoral program (DPT) at UC, she knew she would take a unique approach to her time here. Barbara’s parents emigrated from Argentina, but she spent her childhood traveling back and forth between Argentina and the U.S. Barbara’s background helped her bring a new point of view to the program. “I got here and told them I wanted to do service abroad and that I’d love to get something started,” she said. “My goal getting into PT was to work with mind, body and spirit.” This attitude, combined with her cultural and academic backgrounds, has translated into Barbara becoming both a top physical therapy student and a dedicated public servant.

In December 2013, Barbara and some of her fellow DPT students travelled to Cancun, Mexico through the Palace Foundation—a nonprofit organization focused on helping residents of Mexican cities overcome challenging health issues.
Barbara and her fellow students spent a week in Cancun working with patients of various ages and physical therapy needs. The group worked in many different locations, including a pediatric home for children with disabilities, a home for the elderly, and even at the hotel where they were staying.

At the pediatric home, in addition to working directly with the children, the students were able to assist the home's physical therapists with modifying some of the exercises and equipment. “It was great because we were able to see that they didn’t have a certain supply and could ask, ‘how do we modify it?’ They don’t have these great walkers for kids,” said Barbara. “But we could modify [what they did have] and teach them how to properly walk with a child with cerebral palsy.”

Barbara’s favorite part of the trip was the time she and the other students got to spend at a home for the elderly grandparents run by Franciscan nuns. The sisters, who care for “abuelitos” who have been left at the home, were in such need that they asked the students to help them with basic caregiving tasks like feeding the patients and cleaning them, which was unexpected. “It was heartbreaking, but it was amazing to be able to help them out and just spend quality time with [the patients],” said Barbara. “They sit there all day long, and the best thing we could do for them, aside from helping a little bit with the physical therapy, was education for the nuns.”

While the DPT students weren’t planning on returning to the home for the elderly, the need for training was so great that they spent their free day teaching the nuns new techniques for caring for patients. They taught the nuns how to do things like lifting patients and even washing dishes—techniques that save both the patients and the nuns more injury. As the students taught, they realized that the patients weren’t the only ones suffering; some of the nuns had their own ailments that made their jobs even more difficult.

“One had a torn ACL [a ligament in the knee] for six years. She had been walking on it, kneeling on it, and she wasn’t able to go see a doctor about it to get it repaired,” explained Barbara. “That just wasn’t in the cards for her. But we were able to say, ‘You have this important ligament damaged, but this is what you can do to strengthen and maintain it.’” The DPT students were able to provide much more than just one day of relief for the people they worked with; they were able to provide training. “Physical therapy is very much about going back and seeing your PT routinely, so how much can you really do in one day?” said Barbara. “But the knowledge we were able to provide was amazing.”

Barbara’s dedication to using her talents to serve people in the world will continue: she plans to finish her degree during the 2014-15 academic year and then begin her professional career. No matter where she ends up, Barbara intends to work with patients and make a difference in their lives. “That has been my love; I’ve always loved it,” said Barbara. “I’ve kind of kept my sanity through grad school by going down [to Mexico] and making a difference.”
UC students know why Forbes Magazine named University of Cincinnati as one of the world’s most beautiful college campuses.

UC’s Uptown Campus, located mere minutes from downtown Cincinnati, boasts stunning architecture, dynamic sculptures and lush green spaces.
GSUM/SUMR-UC Program

Samantha (Sam) Imfeld, Biological Sciences, BS
Isaiah Rolle, Neuroscience, PhD

The GSUM/SUMR-UC summer research program provides the opportunity for an undergraduate student from any U.S. baccalaureate program to collaborate with a UC graduate student on a project. The ten week long program includes research on a plethora of subjects—such as creative writing, criminal justice, music and neuroscience—and a presentation of that work at the end of the summer.

Isaiah Rolle, a fifth year doctoral student in the neuroscience program at UC, is a part of a lab that focuses its efforts on epilepsy research. He and Sam Imfeld, an undergraduate student in UC’s biological sciences program, collaborated on an exciting project during the summer of 2013 that they hope will later lead to a cure for epilepsy. As Sam put it, she and Isaiah were a “happy accident” as a research partnership. They weren’t even supposed to be working together, but a last minute drop by Isaiah’s initial undergraduate partner allowed Sam to be part of the epilepsy research that proved to be so interesting.

“We look at dentate granule cells in the brain. Granule cells are some of the few cells in your brain that are born every day as an adult,” Isaiah explained. “Most people think that the cells you are born with, those are the ones you die with. But you actually have some new ones that are for memory, so those are the ones that we study. And we think that they’re causing seizures. Our lab has pretty much proven that they can cause seizures.”

Sam and Isaiah started their research by doing DNA analysis to decide which animals they would use for the experiment (they used mice), then injected them with a toxin that causes their granule cells to become abnormal. These abnormal cells should cause the animal to develop seizures. Normally, the mice used in this experiment are immune to diphtheria toxin, a bacteria Sam and Isaiah used to target abnormal granule cells.

Sam said, “We manipulate them to have diphtheria toxin receptors in the [abnormal] cells that are in the hippocampus. We inject the diphtheria toxin, which should kill those abnormal cells and the seizures should not develop.”
The amazing thing about this process is that it actually worked. When Sam and Isaiah inserted EEG transmitters into the brains of their subjects, they were able to measure and compare data through video and microscope analysis. They could examine which cells died and which did not. The exciting part about their results is the fact that the only cells being killed were the one that Isaiah and Sam made abnormal to cause seizures.

“There are only a very few of them that are abnormal to begin with to cause epilepsy. About 5% of abnormal cells are enough to cause seizures in the animal. There aren't that many cells that need to be disrupted to cause seizures and these kinds of abnormal cells are in humans,” explains Isaiah.

Even though the two researchers had excellent results from their experiment, this treatment cannot yet be considered a cure for epilepsy. Much more research needs to be done, but this work does significantly add knowledge in determining that dentate granule cells can cause epilepsy.

When asked about the GSUM/SUMR-UC research program in general, both Isaiah and Sam gave glowing commendations. The mentor/mentee focus of the program impressed both of them, as well as the fact that they were able to improve upon necessary skills for their futures. Both Isaiah and Sam said they would recommend the program to other students.

Isaiah’s favorite part about the program was having help with this project while he simultaneously worked on his dissertation and other work he needed to complete in order to graduate. “It’s good to work with someone else,” he said. “It’s not like she’s working for me. We’re partners in what we do.” Sam is an undergraduate biology student, so this experience has helped shape her idea of her career path. “It gave me a lot of insight on what grad school would be like. I was thinking about getting my master’s, but now I’m pretty serious about considering my PhD.”

Isaiah has finished his doctoral work, and started medical school at the Ohio State University of Osteopathic Medicine in July 2014. He aspires to one day run a research lab while simultaneously practicing medicine. As for Sam, her experience with summer research continued. As a part of the Women in Science and Engineering program called REWU (Research Experience for Women Undergraduates), Sam spent the summer of 2014 working in Dr. T. Douglas Mast’s lab doing liver cancer research. She plans to graduate December 2014 and hopes to move on to a graduate program where she can pursue a doctoral degree in the sciences.
“Super Twister” by artist Alice Aycock. A new addition to the UC Medical Campus, “Super Twister” was installed April 2014 by the College of Medicine’s CARE/Crawley Building. The sculpture represents the whirlwind of intellectual inquiry and scientific innovation prevalent throughout UC’s research environment.
Each year, the Graduate School recognizes two outstanding teaching assistants—one master’s student, one doctoral student—with the Excellence in Teaching Award. Recipients are selected first at the college level, and then the university level, based on several criteria, such as enthusiasm, relationship with students, preparedness, sensitivity to issues of diversity and innovation in the classroom. The Graduate School was pleased to award the 2014 Excellence in Teaching Award to Melissa Dejonckheere in the doctoral category and Michelle Walker in the master’s category.
Becoming an excellent teacher is a difficult task in general. There are countless hours of preparation, hands-on experiences and professional development involved in the process. Teaching assistants (TAs) face the unique challenge of teaching students while they are still students and developing academics themselves. Melissa Dejonckeere and Michelle Walker have become excellent teachers by going above and beyond the call of duty to help their students engage in the learning process. Melissa and Michelle connect with their students because they genuinely want to see their students grow. Neither of them is afraid to try new teaching methods, even if that means failing from time to time; they are fully invested in finding the best teaching method for each of the students in their classrooms.

“I’m not the person who has all of the knowledge and is going to give it to you. We are going to create an understanding together, share our experiences and learn from each other,” said Melissa when asked to share her perspective on teaching. “I’m very much the person that is OK when I’m wrong, or when I don’t know the answer. I can say that I’ve never thought about something before. I don’t like to be the expert; I like to have this shared responsibility in learning.”

Melissa’s confidence in her teaching abilities has grown throughout the last two years. She said that the more time she spent in the classroom, the more she figured out what worked for her students. This knowledge encourages her to try new things. Fast forward to now, and you will find little to no PowerPoints in Melissa’s classroom and many hands-on activities. “My students tend to do a lot better when we’re doing activities and we’re involved in learning rather than just listening to me talk,” said Melissa about her classroom. “It’s participatory, it’s collaborative, it’s a lot of group work, and it’s constructive.”

Melissa’s teaching philosophy developed hand-in-hand with her research. She uses her hands-on experiences in the classroom to research student learning more deeply, and then uses her research to inform her teaching practices. A doctoral student in educational studies, Melissa is just beginning her dissertation research, which is focused specifically on understanding the cultural and contextual factors that lead to resilience in urban youth. She is using a youth participatory action research framework that creates space for the participants to be co-researchers in the project. The kids who participate will be responsible for collecting...
and analyzing some of the data; they get to have a say in how their words are portrayed.

The participatory nature of Melissa’s research topic runs parallel with the way she likes to run her classroom. She’s interested in getting students more involved in the classroom by letting them have more say in the curriculum. At the beginning of each semester, she gives her students space to come up with their own ways to be assessed on participation. It allows them to have a stake in the classroom, which encourages students to come to class prepared and willing to engage in activities.

Melissa’s favorite part about teaching is the relationships she forms with her students. She made a large effort to get to know her students, spending time each day talking to them about what was going on in their lives. It helped her create a community feeling in the classroom, which encouraged a more open atmosphere. One class of students started with her in fall semester and came back for another class in the spring. “It was really fun to see them progress and see them work,” said Melissa.

Melissa isn’t the only teaching assistant who cultivated a close relationship with her students over the past year. Michelle Walker, a Master of Fine Arts student, described her students in a drawing fundamentals class as more than just freshman. “They’re not just my students, they’re my kids, you know?” says Michelle. “We kind of grew up together.”

A first-time teaching assistant in fall 2013, Michelle said that her teaching philosophy stems from the varying academic and professional experiences she’s had throughout the years. She spent time working in industrial drafting before getting her bachelor’s degree in mechanical engineering. Michelle also received a degree in interior design and owned her own business before coming to UC. Her experiences in each of these fields, along with raising her daughters, have helped her become the student and teacher she is today. Michelle said that she wants her students to understand that learning is more than just doing the assignments for the sake of a good grade. “Don’t just do for now, do for the future,” Michelle tells her students. “Do what will help you grow.”

This nurturing mentality is part of the reason Michelle was able to connect with her students so well. It was also because of the open dialogue she created with them. Much like Melissa, Michelle knows that she isn’t the perfect teacher. She had room to grow as an educator, and the only way for her to do that was to practice.

“There was one time that I did a demo, and it was a really bad demo,” Michelle admitted. “So the next class, I said, ‘OK, guys, we’re going to do this again.’ I think they
liked that honesty.” Michelle’s ability to admit her own mistakes helped her create a classroom atmosphere that focused on acceptance and learning. She showed students that it’s OK to make a mistake or struggle as they learn. The classroom became a safe place for learning, something that is essential to encourage students to take risks and develop their skills. Michelle’s rapport with her students is even more apparent now that they’ve left her classroom. Her students still come to see her and say hello sometimes. Michelle smiled as she said, “When they see me, they just gather around me. It’s wonderful.”

Over the past year, Michelle and Melissa have spent their time in the classroom growing as teachers as they impacted the lives of their students in meaningful ways. Their dedication to making the learning process dynamic and engaging is what makes both of them such excellent teachers.
Recognizing Decades of Service

It is with great respect and appreciation that we congratulate Dr. Robert Zierolf on his retirement from the University of Cincinnati after 37 years as a faculty member. He is leaving the position of vice provost and dean of the Graduate School, which he has held since 2011. As Bob looks forward to a new future for himself, it is only appropriate that we look back at the legacy he leaves behind at UC.

Bob earned his doctorate from the University of Cincinnati (CCM, 1983), and was the head of the Division of Composition, Musicology, and Theory at the College-Conservatory of Music for 12 years (1995-2007). As a scholar, he authored and lectured extensively; titles of his papers and presentations range from "The Composer as Pacifist: Benjamin Britten's War Requiem" to "Temporal Discontinuity: the Most Radical Element in the Music of Charles Ives" to "The Number and Nature of Journal Articles by Women in Music Theory."

As both an instructor and an administrator, Bob had a lasting impact on the people he interacted with. Dean Peter Landgren—who was instructed during his undergraduate years at CCM by Bob—stated, "Dr. Zierolf infused in me, and decades of students, the understanding of how music is constructed, yet his instruction was not simply the why's and how's of music—his direction went deeper. The willing students could take that knowledge and increased level of understanding to inform musical interpretation, balance, color and nuance. Therefore, Dr. Zierolf influenced every note that I played in my 29-year career."

Bob started his work in the Graduate School as the associate dean in 2007 and led a number of initiatives that have shaped our graduate education at UC. Some of the most memorable initiatives include the following:

• Graduate Summer Undergrad Mentorship (GSUM)/ Summer Undergrad Mentored Research (SUMR-UC) program. These paired programs are a 10-week, fully supported research opportunity for rising juniors and seniors sponsored by the Graduate School. Undergraduates work one-on-one under the mentorship of UC graduate students in an intensive research or scholarly project, to the mutual benefit of both graduate and undergraduate groups.

• UC2019 Strategy for Excellence in Doctoral Education. In 2010, the Graduate School started the comprehensive evaluation of all research-based doctoral programs with the goal of enhancing areas of strength and vision while also identifying areas of concern. When Bob ascended to the position of Dean in 2011, he became the primary point person for this major initiative.

• Semester conversion. Bob was the quality control person, as well as the route through which every graduate course and every graduate program approval came through, for the conversion from quarters to semesters. He oversaw approval at the level of the University Graduate Council, the University Academic Committee and finally at the Office of the Provost for 441 graduate programs and over 4,000 graduate courses.

• Adjusting the scholarship model. Funding for graduate students has always been incredibly competitive. Recently, the university moved tuition scholarships for graduate students to a new model, where programs were given set number of scholarship "slots." This allows programs to award scholarships based purely on applicant merit, rather than varying tuition costs.

So in the end, it was Bob's character as well as his academic talents that contributed to his success. "I think what Bob will be remembered most for is how approachable, generous and helpful he was to people. He is entirely selfless, " said Associate Dean Margaret Hanson. "Because of this, Bob brought out the best in his staff, created a trusted and respected image of the Graduate School, and forged a strong, positive relationship with the university's graduate programs, their directors and the graduate faculty."

Bob, thank you for your years of service; all of us in the Graduate School wish you a fulfilling and outstanding retirement. Good luck in all of your future endeavors.
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Even after becoming vice provost and dean of the Graduate School in 2011, Bob continued his pattern of working closely with graduate students, including Christina Haan, a doctoral student in organ performance. “When Dr. Zierolf stepped in as my advisor, he was already Graduate School dean, but he generously agreed to meet with me,” said Christina. “He discussed my thesis document (which was musical, historical, and scientific) with ease, and my degree was quickly finished. I will always have great gratitude and respect for Dr. Zierolf.”

Dr. Zierolf’s work with graduate students made them feel valued as a part of UC and also as a part of the academic community. “When I was selected to join a practicum at the United Nations in 2012, I received a very enthusiastic message from Dr. Zierolf, congratulating me,” said Ayça Mazman, President of the Graduate Student Governance Association and doctoral student in philosophy. “I know several students who published papers, presented in national conferences, did groundbreaking research and created significant inventions—they too received support and praise from Dr. Zierolf. Dr. Zierolf made sure that no big victory went unnoticed.”

So in the end, it was Bob’s character as well as his academic talents that contribute to his success. “I think what Bob will be remembered most for is how approachable, generous and helpful he was to people. He is entirely selfless,” said Associate Dean Margaret Hanson. “He sought and considered ideas and solutions from everyone, he trusted and encouraged people to use their own ingenuity and skill to do their jobs, he gave credit for others’ contribution (possibly erring on the side of over-crediting others) and he was extremely professional while being warm and genuine. Because of this, Bob brought out the best in his staff, created a trusted and respected image of the Graduate School, and forged a strong, positive relationship with the university’s graduate programs, their directors and the graduate faculty.”

Bob, thank you for your years of service; all of us in the Graduate School wish you a fulfilling and outstanding retirement. Good luck in all of your future endeavors.
Dear Friends of the Graduate School,

I stepped into the role of leading graduate education at our university this past summer, upon the retirement of Bob Zierolf. I encourage you to read the farewell tribute to Bob that precedes this letter, so you can appreciate what big shoes I am attempting to fill. For me, there is no higher purpose at a university than training the professionals and experts that will shape our future. The mission of the Graduate School is therefore simple: to help students follow their passion.

The glory of our comprehensive university is the breadth of what is studied by our faculty and students and the amount of motivation and talent that they bring to this purpose every day. This Annual Report highlights some of that for you, while introducing some of our accomplished faculty members and graduate students. The people largely absent from these pages are those who dedicate an amazing amount of time to oversee our graduate education programs. Outside of the Graduate School office, these unsung heroes are the faculty members and program coordinator staff that run graduate programs, as well as the faculty members who serve as associate deans or directors of graduate studies for each college. Just as important, the dedicated staff of the Graduate School is small but mighty, and I thank my lucky stars every day that they are part of the legacy I inherited from Bob Zierolf.

Our graduate programs and student body continue to grow. Our university has seen large expansions in distance learning as a mode of teaching our students seeking master’s degrees, and in the programs that cross between the classic disciplines to give our students a more broad preparation for the modern workplace. The emphasis on interdisciplinary approaches is gaining momentum with several grass-root efforts to develop innovative programs that will attract new faculty and students. It is clear that the face of graduate education is changing and it is exciting to see the University of Cincinnati lead those changes. I am looking forward to working with students, faculty and administrators as we head towards this exciting future.

I hope that you will see both the Graduate School office and myself as a resource now and in the coming semesters. Stop by and visit our Graduate School offices in Van Wormer Hall, or follow our news on social media sites as we develop and implement opportunities for graduate students and faculty.

Like us on Facebook at http://on.fb.me/GradSchool_UC
Follow us on Twitter at http://twitter.com/GradSchool_UC

Chip Montrose
Vice-Provost
Dean of the Graduate School
2014 Dissertation Listing

The Graduate School is proud of the diverse academic endeavors completed by its master’s and doctoral students during the 2013-2014 academic year. All University of Cincinnati master’s theses and doctoral dissertations can be found online at [http://etd.ohiolink.edu](http://etd.ohiolink.edu).

The following listing of doctoral dissertations represents the quality, vitality and diversity of graduate research and scholarship at UC.

### College of Allied Health Sciences

**Farah, Rola**  
PhD, Summer 2013  
*Functional and Structural Abnormalities Underlying Left Ear vs. Right Ear Advantage in Dichotic Listening: an fMRI and DTI Study*  
Advisor: Robert Keith, PhD

**Han, JiHye**  
PhD, Spring 2014  
*Cortical Temporal Processing in Cochlear Implant Users: Amplitude Modulation and Voice Onset Time*  
Advisor: Fawen Zhang, PhD

**Hasselbeck, Emily**  
PhD, Summer 2013  
*Children’s Story Retell under Three Cuing Conditions*  
Advisor: Nancy Creaghead, PhD

**Hobek, Amy**  
PhD, Spring 2014  
*Investigating Early Writing through Two Frameworks: Quantitative Intervention Research and Qualitative Cultural-Historical Analysis*  
Advisor: Nancy Creaghead, PhD

**Lazewnik, Rochel**  
PhD, Summer 2013  
*Identifiers of Bilingual Spanish-English Speaking Children with Language Impairment*  
Advisor: Nancy Creaghead, PhD

### McMicken College of Arts & Sciences

**Abadie, Pascale**  
PhD, Spring 2014  
*Vers de Nouveaux Horizons dans la Littérature Féminine d’Afrique Subsaharienne: de Mariama Bâ à Nos Jours*  
Advisor: Therese Migraine-George, PhD

**Abell, Natalie**  
PhD, Spring 2014  
*Reconsidering a Cultural Crossroads: A Diachronic Analysis of Ceramic Production, Consumption, and Exchange Patterns at Bronze Age Ayia Irini, Kea, Greece*  
Advisor: Jack Davis, PhD

**Allen, Sheri**  
PhD, Summer 2013  
*An American Alefbeit*  
Advisor: Donald Bogen, PhD
Bell, Gregory
PhD, Spring 2014
“An Island in the South”: The Tampa Bay Area as a Cultural Borderland, 1513-1904
Advisor: Christopher Phillips, PhD

Black, Jessica
PhD, Summer 2013
Motivation for Change and Depression: An Examination of Factors Related to Weight Loss Outcomes for Overweight Adolescent Girls with Polycystic Ovary Syndrome
Advisor: Farrah Jacquez, PhD

Bosse, Walter
PhD, Spring 2014
Breaking the Iceberg: Ernest Hemingway, Black Modernism, and the Politics of Narrative Appropriation
Advisor: Beth Ash, PhD

Brinkman, Nichole
PhD, Spring 2014
Seasonal Dynamics and Relative Persistence Potential of the Enteric Species of Enterovirus in Wastewater
Advisor: Brian Kinkle, PhD

Burke, Michelle
PhD, Spring 2014
Animal Purpose
Advisor: Danielle Deulen, PhD

Campbell, Charles
PhD, Fall 2013
Poets and Poetics in Greek Literary Epigram
Advisor: Kathryn Gutzwiller, PhD

Carr, Allison
PhD, Spring 2014
Negative Space: Toward an Epistemology of Failure
Advisor: Laura Micciche, PhD

Castillo Guevara, Ramon
PhD, Spring 2014
The Emergence of Cognitive Patterns in Learning: Implementation of an Ecodynamic Approach
Advisor: Adelheid Kloos, PhD

Chaney, Lindsay
PhD, Spring 2014
Understanding the Evolutionary Potential of Weeds: Baker’s Weediness Traits, Tolerance to Competition, and the General Purpose Genotype
Advisor: Jodi Shann, PhD

Charoni, Eugenia
PhD, Summer 2013
From Motherhood and Marriage to Symbolist Theater and Revolutionary Politics: French and Spanish Women’s Theatre, 1890s to 1930s.
Advisor: Andres Perez-Simon, PhD

Chen, Xiaoping
PhD, Fall 2013
Synthesis and Characterization of Polymers Incorporating N-Alkyl Urea-Peptoid Sequences
Advisor: Neil Ayres, PhD

Collins, Sean
PhD, Spring 2014
Comparing Hypotheses Proposed by Two Conceptual Models for Stream Ecology
Advisor: Stephen Matter, PhD

Cook, Teresa
PhD, Spring 2014
Developing Green One-Step Organic Reactions in the High Speed Ball Mill
Advisor: James Mack, PhD
Counts, Ronald  
PhD, Summer 2013  
*Late Quaternary Landscape Evolution and Tectonic Geomorphology of the Lower Ohio River Valley, USA*  
Advisor: Lewis Owen, PhD

Darley, Mical  
PhD, Spring 2014  
*Engaging Paradox: Toward a Study of Human Rights in the Composition Classroom (critical portion), Hollywoodland, A Novel (creative portion)*  
Advisor: Michael Griffith, MFA

Date, Priya  
PhD, Summer 2013  
*Evolution of Host Specialization in a Cactophilic Fly, Drosophila mojavensis*  
Advisor: Stephanie Rollmann, PhD

Dator, Romel  
PhD, Fall 2013  
*Characterization of Ribosomes and Ribosome Assembly Complexes by Mass Spectrometry*  
Advisor: Patrick Limbach, PhD

Davis, Michael  
PhD, Summer 2013  
*Jacksonian Volcano: Anti-Secretism and Secretism in 19th Century American Culture*  
Advisor: Mark Lause, PhD

Delaney, Michael  
PhD, Fall 2013  
*Selection Method and Judicial Background Characteristics*  
Advisor: Steven Carlton-Ford, PhD

Dongol, Amit  
PhD, Spring 2014  
*Carrier Dynamics and Application of the Phase Coherent Photorefractive Effect in ZnSe Quantum Wells*  
Advisor: Hans Peter Wagner, PhD

Emmerson, Allison  
PhD, Fall 2013  
*Memoria et Monumenta: Local Identities and the Tombs of Roman Campania*  
Advisor: Steven Ellis, PhD

Ennis, Michael  
PhD, Spring 2014  
*The M.S. Wilhelm Gustloff in German Memory Culture: A Case Study on Competing Discourses*  
Advisor: Richard Schade, PhD

Grau, Amy  
PhD, Fall 2013  
*The Epitome of Bad Parents: Construction of Good and Bad Parenting, Mothering, and Fathering in Cases of Maternal and Paternal Filicide*  
Advisor: Annula Linders, PhD

Guo, Wei  
PhD, Spring 2014  
*A Unified Approach to Data Transformation and Outlier Detection Using Penalized Assessment*  
Advisor: Seongho Song, PhD

Hales, Scott  
PhD, Spring 2014  
*Of Many Hearts and Many Minds: The Mormon Novel and the Post-Utopian Challenge of Assimilation*  
Advisor: Jay Twomey, PhD

Iris, Manuel  
PhD, Summer 2013  
"Channel of Channels": A Comparative Study of the Poetic Works of Gonzalo Rojas, Ali Chumacero, Fernando Charry Lara, and Juan Sánchez Pelaez, and Their Interactions with the Literary Field  
Advisor: Armando Romero, PhD

Jakubowski, Susan  
PhD, Spring 2014  
*Public Participation in Urban Development: Case Studies from Cincinnati, Ohio*  
Advisor: Colleen McTague, PhD

Kay, Lesley  
PhD, Spring 2014  
*Foxes Spoil the Vines*  
Advisor: John Drury, MFA

Killian, Mark  
PhD, Summer 2013  
*Everything in Common: The Strength and Vitality of Two Christian Intentional Communities*  
Advisor: Steven Carlton-Ford, PhD

Kim, Woosuk  
PhD, Spring 2014  
*Statistical Inference on Dual Generalized Order Statistics for Burr Type III Distribution*  
Advisor: Seongho Song, PhD

Kostko, Aaron  
PhD, Spring 2014  
*Epistemic and Nonepistemic Values in Psychiatric Explanation and Classification*  
Advisor: Valerie Hardcastle, PhD

Kravats, Andrea  
PhD, Fall 2013  
*Coarse Grained Molecular Dynamics Simulations of the Coupling Between the Allosteric Mechanism of the ClpY Nanomachine and Threading of a Substrate Protein*  
Advisor: George Stan, PhD

Kumar, Parveen  
PhD, Summer 2013  
*Optoelectronic Investigation of Single CdS Nanosheets and Single GaP/GaAs Nanowire Heterostructures*  
Advisor: Leigh Smith, PhD

Kuznetsov, Nikita  
PhD, Summer 2013  
*Postural Sway Complexity in Healthy Older Adults and Individuals with Asthma*  
Advisor: Michael Riley, PhD

Li, Dandan  
PhD, Spring 2014  
*On Multiplicity Adjustment in Bayesian Variable Selection and an Objective Bayesian Analysis of a Crossover Design*  
Advisor: Siva Sivaganesan, PhD

Li, Qian  
PhD, Summer 2013  
*Approaches to Find the Functionally Related Experiments Based on Enrichment Scores: Infinite Mixture Model Based Cluster Analysis for Gene Expression Data*  
Advisor: Siva Sivaganesan, PhD

Li, Siwei  
PhD, Spring 2014  
*High Throughput Automated Comparative Analysis of RNAs Using Isotope Labeling and LC-MS/MS*  
Advisor: Patrick Limbach, PhD
Lynch, John  
PhD, Fall 2013  
Encapsulation of Bacterial Endospores in Silica  
Aerogel Monoliths  
Advisor: William Heineman, PhD

Ma, Tao  
PhD, Summer 2013  
Statistics of Quantum Energy Levels of Integrable Systems and a Stochastic Network Model with Applications to Natural and Social Sciences  
Advisor: Rostislav Serota, PhD

Madhavan, Kiely  
PhD, Summer 2013  
White Matter Microstructure and Language Functioning in Healthy Aging  
Advisor: Paula Shear, PhD

McDonald, Katharine  
PhD, Summer 2013  
Gutter Love: Historio-Metagraphics, Point-of-View, and the Ethics of Empathy  
Advisor: Jennifer Glaser, PhD

Meyers, Lisa  
PhD, Fall 2013  
Investigations of Nuclear Forensic Signatures in Uranium Bearing Materials  
Advisor: Thomas Beck, PhD

Mudivirimi, Ronnie  
PhD, Summer 2013  
Evaluation of Axial Pt…N Interactions and their Influence on the Reactivity and Redox Properties of Platinum(II) Complexes with Pincer Ligands  
Advisor: William Connick, PhD

Neubauer, Catherine  
PhD, Spring 2014  
Alertness Maintaining Tasks: A Fatigue Countermeasure during Vehicle Automation?  
Advisor: Chung-Yiu Chiu, PhD

Nielsen, David  
PhD, Spring 2014  
Riddle at the Beginning of Time  
Advisor: James Cummins, MFA

Olsen, Brian  
PhD, Summer 2013  
Factors Influencing Children’s Attitudes Toward a Peer Who is Overweight  
Advisor: Farrah Jacquez, PhD

Padula, Claudia  
PhD, Summer 2013  
The Functional and Structural Neural Connectivity of Affective Processing in Alcohol Dependence: A Multimodal Imaging Study  
Advisor: Paula Shear, PhD

Panganiban, April Rose  
PhD, Summer 2013  
Task Load and Evaluative Stress in a Multiple UAV Control Simulation: The Protective Effect of Executive Functioning Ability  
Advisor: Gerald Matthews, PhD

Pemasiri, Karunananda  
PhD, Summer 2013  
Investigation of Zincblende, Wurtzite, and Mixed Phase InP Nanowires by Photocurrent, Photoluminescence and Time-Resolved Photoluminescence Spectroscopies  
Advisor: Leigh Smith, PhD

Pihakis, James  
PhD, Summer 2013  
Weems: A Novel  
Advisor: Michael Griffith, MFA

Price, Jenessa  
PhD, Spring 2014  
Effects of Marijuana Use on Prefrontal and Parietal Volumes and Cognition in Emerging Adults  
Advisor: Paula Shear, PhD

Ramaruban, Nadesan  
PhD, Spring 2014  
Commutative Hyperalgebra  
Advisor: Tara Smith, PhD

Rodrigo, Sanjiewa  
PhD, Spring 2014  
Nickel Catalyzed Regioselective Reductive Coupling Reactions  
Advisor: Hairong Guan, PhD

Rule, Hannah  
PhD, Summer 2013  
Composing Assemblages: Toward a Theory of Material Embodied Process  
Advisor: Laura Micciche, PhD

Santel, Daniel  
PhD, Summer 2013  
Measurement of the Cross-Section s(e+e- &gt;YnSipi+pi-) vs. sqrt(s) in the Region of 10.6 GeV to 11.02 GeV  
Advisor: Kay Kinoshita, PhD

Shrestha, Pooja  
PhD, Summer 2013  
Mechanism of Substrate Protein Remodeling by Molecular Chaperones  
Advisor: George Stan, PhD and Frank Pinski, PhD

Smith, Bryan  
PhD, Spring 2014  
Black One: A Novella and Stories  
Advisor: Michael Griffith, MFA

Smith, Stephanie  
PhD, Spring 2014  
Examining the Influence of Peritraumatic Dissociation on Treatment Outcomes and Symptom Severity among Women Substance Users  
Advisor: Ann Kathleen Hoard Burlew, PhD

Solivio, Morwena Jane  
PhD, Spring 2014  
Investigation of DNA-Protein Cross-Links Generated in the Presence of Biologically Relevant Oxidant Systems  
Advisor: Edward Merino, PhD

Stanley, Matthew  
PhD, Summer 2013  
“Between Two Fires”: War and Reunion in Middle America, 1860-1899  
Advisor: Christopher Phillips, PhD

Stewart, Julie  
PhD, Summer 2013  
Colorblind Commercials: Depictions of Interracial Relationships in Television Advertising  
Advisor: Jeffrey Timberlake, PhD

Stowasser, Annette  
PhD, Fall 2013  
Toward Unraveling the Mystery of How the Unusual Principal Eyes of Thermonectus marmoratus Larvae Work—Constructing a First Functional Model  
Advisor: Elke Buschbeck, PhD
Theisen, Kelly  
PhD, Fall 2013  
Exploring the Mechanical Properties of Filamentous Proteins and their Homologs by Multiscale Simulations  
Advisor: Ruxandra Dima, PhD

Thompson, Kim  
PhD, Fall 2013  
Biodiversity in Forests of the Ancient Maya Lowlands and Genetic Variation in a Dominant Tree, Manilkara zapota (Sapotaceae): Ecological and Anthropogenic Implications  
Advisor: David Lentz, PhD

TonndastNavaei, Sam  
PhD, Fall 2013  
Mechanism of Substrate Protein Remodeling by Allosteric Motions of AAA+ Nanomachines  
Advisor: George Stan, PhD

Topmiller, Michael  
PhD, Fall 2013  
Access, Neighborhood Walkability, and an Urban Greenway: A Qualitative GIS Approach  
Advisor: Wendy Eisner, PhD

van Rooij, Marieke  
PhD, Fall 2013  
What Changes When We Change Our Decision Strategy? A Dynamical Account of Transitions between Risk-Averse and Risk-Seeking Choice Behavior  
Advisor: John Holden, PhD

Weast, Julie  
PhD, Summer 2013  
Informational Constraints on Perception of Maximum Reach-with-Jump for Others  
Advisor: Wendy Eisner, PhD

Weekes, Jerren  
PhD, Summer 2013  
General and Acculturative Stress as Predictors of Substance Use Among Black Caribbean Americans  
Advisor: Ann Kathleen Hoard Burlew, PhD

Xiao, Yang  
PhD, Fall 2013  
A Bayesian Subgroup Analysis Using an Additive Model  
Advisor: Siva Sivaganesan, PhD

Yllana, Grace  
PhD, Spring 2014  
Watchdogs That Do Not Bite, Nets That Do Not Catch, and “Perps” Policing Themselves: Why Anti-Corruption Multi-Level Governance Efforts Fail in the Philippines  
Advisor: Laura Jenkins, PhD

Carl H. Lindner College of Business

Chang, Qingqing  
PhD, Summer 2013  
Essays on Liquidity in Finance and Real Estate Markets  
Advisor: Shaun Bond, PhD

Changarath, Vinod  
PhD, Summer 2013  
Essays in Banking: (1) Do Capital Standards Promote Bank Safety? Evidence from Involuntary Recapitalizations, (2) Does Bank Liquidity Creation Translate into a Wealth Effect for Borrowers?  
Advisor: Michael Ferguson, PhD

Devine, Avis  
PhD, Summer 2013  
Three Essays in Residential Real Estate Topics: An Examination of Rental Tenure, Green Residential Construction Policy, and Green Residential Rental Rates  
Advisor: Shaun Bond, PhD

Hechavarria, Diana  
PhD, Summer 2013  
Nascent Entrepreneur’s Prospecting Profile and Start-up Capital Sources: An Investigation of Start-up Outcomes over Time  
Advisor: Charles Matthews, PhD

Kasaie Sharifi, Parasto Alsadat  
PhD, Spring 2014  
Agent-Based Simulation Modeling and Analysis of Infectious Disease Epidemics and Implications for Policy  
Advisor: W. David Kelton, PhD

Urick, Michael  
PhD, Summer 2013  
Intergenerational Interactions in Organizations: A Grounded Theory Examination  
Advisor: Elaine Hollensbe, PhD

Wu, Chaojiang  
PhD, Summer 2013  
Essays on High-Dimensional Nonparametric Smoothing and Its Applications to Asset Pricing  
Advisor: Yan Yu, PhD
Bucoy-Calavan, Maria  
DMA, Spring 2014  
The Incomplete Conductor: A Comparative Evaluation of the Separated Subspecialties in Graduate-Level Conducting Pedagogy  
Advisor: L. Scott, DMA

Buterbaugh Walz, Ivy  
DMA, Spring 2014  
Training the 21st Century Voice Teacher: An Overview and Curriculum Survey of the Undergraduate Experience  
Advisor: Mary Stucky, MM

Carpinteyro-Lara, Gustavo  
DMA, Spring 2014  
The Application of the Kinesthetic Sense: An Introduction of Body Awareness in Cello Pedagogy and Performance  
Advisor: Lee Fiser, Michael

Fuchs, Michael  
DMA, Spring 2014  
A Conductor's Guide to the Incorporation of Bel Canto Methodology in the Choral Rehearsal  
Advisor: Mary Stucky, MM

Gasim-Zada, Turkar  
DMA, Spring 2014  
Qurama  
Advisor: Mara Helmuth, DMA

Goldman, Joshua  
DMA, Fall 2013  
Biomes  
Advisor: Mara Helmuth, DMA

Graner, Loretta  
DMA, Spring 2014  
Virtuosity and Technique in the Organ Works of Rolande Falcinelli  
Advisor: Michael Unger, DMA

Han, Yungkyung  
DMA, Spring 2014  
Middle Eastern Style Influences in Shulamit Ran's Flute Compositions  
Advisor: Bradley Garner, DMA

Hutchings, Sarah  
DMA, Fall 2013  
Styria  
Advisor: Mike Fiday, PhD

Kim, Eun Hye  
DMA, Summer 2013  
Selected Organ Works of Joseph Ahrens: A Stylistic Analysis of Freely Composed Works and Serial Compositions  
Advisor: Roberta Gary, DMA

Kim, Jun  
DMA, Summer 2013  
A Performer's Guide to Violin Orchestral Excerpts from Baroque to the Twentieth Century Compositions  
Advisor: Won-Bin Yim, DMA

Kim, Woo Ri  
DMA, Spring 2014  
A Comparative Study of the Etude Genre in Chopin and Debussy: Technical Application and Pedagogical Approach  
Advisor: Jonathan Kregor, PhD

Lee, Bora  
DMA, Summer 2013  
Franz Liszt's Vallée d'Obermann from the Années de Pèlerinage, Première Année, Suisse: A Poetic Performance Guide  
Advisor: Jonathan Kregor, PhD

Leeung, Cleo  
DMA, Spring 2014  
Overtone Characterization of Garner Headjoints Using Spectrographic Analysis and Fast Fourier Transforms  
Advisor: Bradley Garner, DMA

Magin, Carrie  
DMA, Summer 2013  
Catulli Carmina Quinque for Mixed Chorus (SATB), A Cappella  
Advisor: Douglas Knehans, DMA

Murphy, Eliana  
DMA, Summer 2013  
An Analytical Comparison of the Variation Movement from Ludwig van Beethoven's Piano Sonata in E Major, Op. 109 to Johann Sebastian Bach's Aria Mit Verschiedenen Veränderungen, BWV 988 (“Goldberg Variations”)  
Advisor: Bruce Mcclung, PhD

Nam, Sangbong  
DMA, Summer 2013  
Unbearable Heaviness of Being  
Advisor: Mara Helmuth, DMA

Park, Shi Ae  
DMA, Summer 2013  
The Messe de la Pentecôte of Olivier Messiaen  
Advisor: Roberta Gary, DMA

Phelps, Matthew  
DMA, Spring 2014  
A Critical Edition of Amy Beach's Mass in E-Flat Major for Chorus, Solo Quartet, and Orchestra  
Advisor: L. Scott, DMA

Powell, Brian  
DMA, Summer 2013  
Stravinsky's Suite Italienne for Double Bass and Piano: A Collaboration with the Past  
Advisor: Terence Milligan, DMA

Richmond, Jason  
DMA, Spring 2014  
Nefelibata  
Advisor: Joel Hoffman, DMA

Tice, Kenneth  
DMA, Summer 2013  
An Analytical, Rehearsal, and Performance Guide to Ad majorem Dei gloriam by Benjamin Britten  
Advisor: L. Scott, DMA

Vanpelt, Michael  
DMA, Fall 2013  
A Performers Guide to the Music of Edison Denisov: Understanding the Interpretive Implications of his Musical Language in Sonata for Alto Saxophone and Piano, Deux Pièces, and Sonata for Alto Saxophone and Cello  
Advisor: James Bunte, DMA

Wallace, Joy  
DMA, Summer 2013  
Thomas Pasatieri's Letter to Warsaw: An Examination of Style for Performance Preparation  
Advisor: Mary Stucky, MM

Wang, Yuchi  
DMA, Spring 2014  
Edward MacDowell: A Poetic Voice as Seen in the "Eroica" and "Keltic" Sonatas  
Advisor: Jonathan Kregor, PhD
Weimer, Steven  
DMA, Spring 2014  
*Monoliths, an Orchestral Work*  
Advisor: Joel Hoffman, DMA

Wright, John  
DMA, Spring 2014  
*Confronting the Celebrant of Bernstein’s Mass: A Study of Musical Borrowing*  
Advisor: David Adams, MM

Yang, Minsuk  
DMA, Spring 2014  
*Concerto for Saxophone and Orchestra*  
Advisor: Mara Helmuth, DMA

Zinninger, Thomas  
DMA, Fall 2013  
*An Analysis of Concert Saxophone Vibrato through the Examination of Recordings by Eight Prominent Soloists*  
Advisor: James Bunte, DMA

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**College of Design, Architecture, Art, and Planning**

Ghosh, Sudeshna  
PhD, Summer 2013  
*Major Employers in Small Towns: Modeling the Spatio-Temporal Impacts on Land Use and Land Cover Changes at a Regional Scale*  
Advisor: Carla Chifos, PhD

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**College of Education, Criminal Justice, and Human Services**

Benzigar, Sasi  
EdD, Spring 2014  
*A Survey Study of the Association between Perceptions of Interactions, Learning and Satisfaction among Undergraduate Online Students*  
Advisor: Carla Johnson, EdD

Bolger, Philip  
PhD, Spring 2014  
*Consistency or Discord: A Meta-Analysis of Police Officer Decisions to Search and Use Force*  
Advisor: Lawrence Travis, PhD

Bridges, Corinne  
EdD, Summer 2013  
*The Impact of Gender, Employment and Class on Perceptions of Chronic Pain: An Ecological Perspective*  
Advisor: Ellen Piel Cook, PhD

Cosmah, Michelle  
EdD, Summer 2013  
*Ohio’s Urban Eight: An Analysis of Administrative Staffing Options and their Implications on Reading Achievement*  
Advisor: Carlee Escue, PhD

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Cunningham, Joseph  
PhD, Spring 2014  
*Genres of Underemployment: A Marxian and Qualitative Analysis of College Graduate Underemployment*  
Advisor: Mary Brydon-Miller, PhD

DeGreg, Julia  
PhD, Spring 2014  
*Video Modeling as a Classwide Intervention for Promoting Positive Behavior in Art Class*  
Advisor: Julie Morrison, PhD

Diao, Xuejiao  
EdD, Spring 2014  
*Cross Language Transfer of Metalinguistic Awareness: A Meta-Analytic Structural Equation Model for Chinese-English Bilingual Children*  
Advisor: Mary Benedetti, EdD

Flores, Anthony  
PhD, Summer 2013  
*Examining the Youth Level of Service/Case Management Inventory in the Context of Reliability, Validity, Equity, and Utility: A Six-Year Evaluation*  
Advisor: Edward Latessa, PhD
Goulette, Natalie
PhD, Summer 2013
Are Female Defendants Treated More Leniently by Judges? A Multilevel Analysis of Sex-Based Disparities at the Phases of Pretrial Release, Charge Reductions, and Sentencing
Advisor: John Wooldredge, PhD

Hollingshead, Aleksandra
EdD, Summer 2013
Broading the Definition of Engagement for Students with Severe Disabilities: A Phenomenological Study of the Experts in the Field
Advisor: Christina Carnahan, EdD

Huesman, Elizabeth
PhD, Fall 2013
The Effects of First-Grade Peer Tutoring on Phonemic Awareness Skills
Advisor: Renee Oliver Hawkins, PhD

Inniss-Richter, Zipporah
PhD, Summer 2013
Type 2 Diabetes Mellitus Self-Care Behaviors, Knowledge, Attitudes and Barriers among Male Military Veterans Who Are Experiencing Homelessness
Advisor: Liliana Guyler, PhD

Johnson, Talia
PhD, Spring 2014
Examining the Effectiveness of Cover Copy and Compare with Student Goal Setting to Increase Mathematics Fluency
Advisor: Renee Oliver Hawkins, PhD

Jones, Lashanta
PhD, Fall 2013
The Spiritual Journey: Black Female Adult Learners in Higher Education
Advisor: Vanessa Allen-Brown, PhD

Jorgenson, Simon
PhD, Spring 2014
Green Pedagogy: How STEM Teachers Understand and Enact Environmental Projects
Advisor: Miriam Raider-Roth, EdD

Kinney, Angela
EdD, Fall 2013
An Investigation into the Funds of Knowledge of Culturally and Linguistically Diverse U.S. Elementary Students’ Households
Advisor: Susan Watts Taffe, PhD

Knowiden, Adam
PhD, Summer 2013
Feasibility and Efficacy of the Enabling Mothers to Prevent Pediatric Obesity through Web-Based Education and Reciprocal Determinism (EMPOWER) Randomized Control Trial
Advisor: Manoj Sharma, PhD

Kohan, Mark
PhD, Fall 2013
Story as an Organizing and Inquiry Tool for Educational Partnerships Committed to Social Justice, School, and Community Change
Advisor: Miriam Raider-Roth, EdD

Ling, Stacy
PhD, Fall 2013
Individulizing an Interdependent Group Contingency Intervention to Improve Classwide and At-Risk Student Behavior
Advisor: Renee Oliver Hawkins, PhD

Maherally, Mohammad Iqbal
EdD, Spring 2014
The Development and Validation of the Algebra Curriculum Based Measure: A Measure of Preschool Children’s Sorting and Classifying Skills
Advisor: Sally Moomaw, EdD

Maherally, Uzma Nooreen
EdD, Spring 2014
Development and Validation of the Life Sciences Assessment: A Measure of Preschool Children’s Conceptions of Basic Life Sciences
Advisor: Sally Moomaw, EdD

Marsicano, Richard
PhD, Spring 2014
Increasing Math Milieu Teaching During Non-Instructional Time via a Graphical Feedback Support Continuum
Advisor: Julie Morrison, PhD

Mayer, Greta
EdD, Spring 2014
Content Analysis of Gatekeeper Training Models
Advisor: Mei Tang, PhD

Maynard, Kathie
EdD, Fall 2013
From Rhetoric to Reality: Case Studies of Two Fifth Grade Science Teachers to Inform Reform
Advisor: Helen Meyer, PhD

McCafferty, James
PhD, Fall 2013
The Predictive Validity of the Ohio Youth Assessment System-Disposition Instrument: A Revalidation Study
Advisor: Christopher Sullivan, PhD

McNeeley, Susan
PhD, Fall 2013
Street Codes, Routine Activities, Neighborhood Context, and Victimization: An Examination of Alternative Models
Advisor: Pamela Wilcox, PhD

Merianos, Ashley
PhD, Spring 2014
Parent Factors and School Factors Associated with Alcohol Use Among Hispanic Youth
Advisor: Keith King, PhD

Moncree-Moffett, Kareem
PhD, Summer 2013
Educating our African American Students
Advisor: Vanessa Allen-Brown, PhD

Moyer, Michael
PhD, Fall 2013
How Prospective Memory Affects Outcomes in a Simulated Medical Environment
Advisor: Rhonda Douglas Brown, PhD

Rahschulte, Rebecca
PhD, Spring 2014
An Examination of the Effectiveness and Efficiency of Detect, Practice, and Repair versus Traditional Cover, Copy, and Compare Procedures: A Component Analysis
Advisor: Julie Morrison, PhD

Reitler, Angela
PhD, Summer 2013
A Mixed-Metholodical Exploration of Potential Confounders in the Study of the Causal Effect of Detention Status on Sentence Severity in One Federal Court
Advisor: James Frank, PhD

Saylor, Laura
PhD, Spring 2014
The Relationship between Teacher Quality and Reflective Practice
Advisor: Carla Johnson, EdD
Schaefer, Lacey  
PhD, Summer 2013  
*Environmental Corrections: Making Offender Supervision Work*  
Advisor: Francis Cullen, PhD

Snyder, Kathleen  
EdD, Summer 2013  
*Examining the Nature of Critical Incidents during Interactions between Special Education Teachers and Virtual Coaches*  
Advisor: Christina Carnahan, EdD

Stehn, Molly  
EdD, Spring 2014  
*Dialectical Behavior Therapy Skills Group as Facilitator of Relational Growth*  
Advisor: Mei Tang, PhD

Todd, Anita  
EdD, Summer 2013  
*Measuring the Effect of an Online Learning Community on Engineering Cooperative Education Students’ Perceived and Measured Learning*  
Advisor: Janet Zydney, PhD

Veraldo, Cynthia  
EdD, Fall 2013  
*Career Experiences and Intentions of Women in Senior Level Intercollegiate Athletic Administration*  
Advisor: James Koschoreck, PhD

Wahl, Elaine  
PhD, Spring 2014  
*Comparing Versions of the Good Behavior Game: Can a Positive Spin Enhance Effectiveness?*  
Advisor: Renee Oliver Hawkins, PhD

Wang, Yinying  
EdD, Spring 2014  
*Addressing the Dearth of Scholarship: A Social Network Analysis of Research Collaboration in Educational Technology Leadership*  
Advisor: Samuel Stringfield, PhD

Weber, Amy  
PhD, Fall 2013  
*Examining the Relationship between Female Breast Cancer Survivor’s Diagnosis Factors, Perceived Social Support, Internal Control, and Quality of Life*  
Advisor: Liliana Guyler, PhD

Williams, Anita  
EdD, Spring 2014  
*From Pre-Service to Practice: Exploring Self-Efficacy Development among Teachers during Their First-Year Teaching Experience*  
Advisor: Holly Johnson, PhD

Wuebker, Megan  
PhD, Spring 2014  
*Preparing Leaders in Online Learning: Determining the Impact of a Graduate Certificate Program*  
Advisor: Carla Johnson, EdD

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**College of Engineering & Applied Science**

Ai, Qingyi  
PhD, Fall 2013  
*Length-Based Vehicle Classification Using Dual-Loop Data under Congested Traffic Conditions*  
Advisor: Heng Wei, PhD

Alpert, David  
PhD, Summer 2013  
*Enriched Space-Time Finite Element Methods for Structural Dynamics Applications*  
Advisor: Dong Qian, PhD

Arandia Perez, Agustin Mario Ernesto  
PhD, Summer 2013  
*Spatial-Temporal Statistical Modeling of Treated Drinking Water Usage*  
Advisor: James Uber, PhD

Argekar, Sandip  
PhD, Fall 2013  
*Influence of Biologically Relevant Thin-Film Morphology on Protein Immobilization and Cell-Adhesion*  
Advisor: Dale Schaefer, PhD

Aure, Temesgen  
PhD, Fall 2013  
*Numerical Analysis of Cracking in Concrete Pavements Subjected to Wheel Load and Thermal Curling*  
Advisor: Anastasios Ioannides, PhD

Bandaranayake, Asitha  
PhD, Summer 2013  
*Energy-Efficient Throughput Enhancement in Wireless Mesh Networks via Intelligent Channel Selection*  
Advisor: Dharma Agrawal, DSc

Banerjee, Ananda  
PhD, Fall 2013  
*Towards Reconfigurable Lab-on-Chip Using Virtual Electrowetting Channels*  
Advisor: Ian Papautsky, PhD

Bhandari, Nikhil  
PhD, Spring 2014  
*Tunable All Electric Spin Polarizer*  
Advisor: Marc Cahay, PhD

Borowczak, Mike  
PhD, Summer 2013  
*Side Channel Attack Resistance: Migrating Towards High Level Methods*  
Advisor: Ranganadha Vemuri, PhD

Bowen, James  
PhD, Fall 2013  
*Physicochemical Characterization of Discrete Weapons Grade Plutonium Metal Particles Originating from the 1960 BOMARC Incident*  
Advisor: Henry Spitz, PhD

Burkhardt, Jonathan  
PhD, Summer 2013  
*Computational Modeling of SCMTR: A Synthetic Anion Channel*  
Advisor: Joel Fried, PhD

Byadarhaly, Kiran  
PhD, Fall 2013  
*A Neuro-Dynamical Model of Synergistic Motor Control*  
Advisor: Ali Minai, PhD
Chakraborty, Shibalik
PhD, Spring 2014
Topological Origin of Glass Formation, Rigidity and Stress Transitions, Conductivity and Fragility in Specially Homogeneous Heavy Metal Oxide and Chalcogenide Systems
Advisor: Punit Boolchand, PhD

Cheerkapally Potulapally, Raghavender
PhD, Fall 2013
Surface-Induced Structural Transformations in Titanium Nanowires
Advisor: Dong Qian, PhD

Chen, Linxi
PhD, Spring 2014
Chlorine Cycling in Electrochemical Water and Wastewater Treatment Systems
Advisor: Margaret Kupferle, PhD, PE

Cheng, Lei
PhD, Summer 2013
CO2 Separation from Coal-Fired Power Plants by Regenerable Mg(OH)2, Solutions
Advisor: Timothy Keener, PhD

Chi, Yang
PhD, Fall 2013
Effective Use of Network Coding in Multi-Hop Wireless Networks
Advisor: Dharma Agrawal, DSc

Cuppoletti, Daniel
PhD, Fall 2013
Supersonic Jet Noise Reduction with Novel Fluidic Injection Techniques
Advisor: Ephraim Gutmark, PhD, DSc

Das, Ashish
PhD, Fall 2013
Development of Energy-Based Endpoints for Diagnosis of Pulmonary Valve Insufficiency
Advisor: Rupak Banerjee, PhD

Desch, Rebecca
PhD, Fall 2013
Thermodynamics and Mass Transport of Biomolecule Adsorption onto Chromatographic Media
Advisor: Stephen Thiel, PhD

Elwali, Wael
PhD, Fall 2013
Vehicle Vibro-Acoustic Response Computation and Control
Advisor: Teik Lim, PhD

Galbraith, Marshall
PhD, Fall 2013
A Discontinuous Galerkin Chimera Overset Solver
Advisor: Paul Orkwis, PhD

Gaskins, Whitney
PhD, Spring 2014
Changing the Learning Environment in the College of Engineering and Applied Science: The Impact of Educational Training on Future Faculty and Student-Centered Pedagogy on Undergraduate Students
Advisor: Anant Kukreti, PhD

Gerlach, Adam
PhD, Spring 2014
Autonomous Path-Following by Approximate Inverse Dynamics and Vector Field Prediction
Advisor: Bruce Walker, ScD

Gunasekera, Kapila
PhD, Fall 2013
Fragility, Melt/Glass Homogenization, Self-Organization in Chalcogenide Alloy Systems
Advisor: Anant Kukreti, PhD

Hagedon, Matthew
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Electrofluidic Imaging Films for Simultaneous Advancements in Performance and Simplicity for Electronic Paper
Advisor: Jason Heikenfeld, PhD

Haldar, Kuheli
PhD, Spring 2014
Efficient Quality of Service Provision Techniques in Next Generation Wireless Networks
Advisor: Dharma Agrawal, DSc

Han, Changseok
PhD, Spring 2014
Monitoring and Removal of Water Contaminants of Emerging Concern: Development of A Multi-Walled Carbon Nanotube Based Biosensor and Highly Tailor-Designed Titanium Dioxide Photocatalysts
Advisor: Dionysios Dionysiou, PhD

He, Juan
PhD, Summer 2013
Advanced Adsorbents for Capture of Vapor-Phase Mercury and Other Toxic Components from Flue Gas
Advisor: Stephen Thiel, PhD

Hemasilpin, Nat
PhD, Summer 2013
Toward Optimal Adaptive Control of Hemodialysis
Advisor: Arthur Helmicki, PhD and John Bissler, MD

HomChaudhuri, Baisravan
PhD, Summer 2013
Price-Based Distributed Optimization in Large-Scale Networked Systems
Advisor: Manish Kumar, PhD

Howell, Thomas
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Perovskites for Use as Sulfur Tolerant Anodes
Advisor: Raj Singh, ScD

Janga, Prudhvi
PhD, Spring 2014
Integration of Heterogeneous Web-Based Information into a Uniform Web-Based Presentation
Advisor: Karen Davis, PhD

Jung, WooSeok
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Polymer Lab-on-a-Chips from Micro Blood Sampling to Immunoassay for Point-of-Care Testing of Neonates and Pediatrics in Intensive Care Unit
Advisor: Chong Ahn, PhD

Kim, Jinsoo
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Effects of Dissolved Inorganic Carbon, pH, and Light on Growth and Lipid Accumulation in Microalgae
Advisor: Joo Youp Lee, PhD

Kishore, Aravind
PhD, Spring 2014
Laminar Plunging Jets—Interfacial Rupture and Inception of Entrainment
Advisor: Urmila Ghia, PhD

Lee, Kang Kug
PhD, Fall 2013
A Sample-to-Answer Polymer Lab-on-a-Chip with Superhydrophilic Surfaces using a Spray Layer-by-Layer Nano-Assembly Method
Advisor: Chong Ahn, PhD
Lee, Namheon  
PhD, Fall 2013  
Assessment of Pulmonary Insufficiency using Energy-Based Endpoints and 4D Phase Contrast MR Imaging  
Advisor: Rupak Banerjee, PhD, PE

List, Michael  
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Numerical Quantification of Interaction Effects in a Closely-Coupled Diffuser-Fan System  
Advisor: Mark Turner, ScD

Maudgalya, Tushyati  
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Occupational Health and Safety in Emerging Economies: An India Based Study  
Advisor: Henry Spitz, PhD

Mylavarapu, Goutham Sarma  
PhD, Summer 2013  
Computational Flow Modeling of Human Upper Airway Breathing  
Advisor: Ephraim Gutmark, PhD, DSc

Paez, Omar  
PhD, Fall 2013  
Financial Assessment of Health and Safety Programs in the Workplace  
Advisor: Henry Spitz, PhD

Pandit, Vaibhav  
PhD, Spring 2014  
Performance and Security Mechanisms in Massive Scale Wireless Multi-Hop Networks  
Advisor: Dharma Agrawal, DSc

Parrilla, Javier  
PhD, Spring 2014  
Hybrid Environmental Control System Integrated Modeling Trade Study Analysis for Commercial Aviation  
Advisor: Awatif Hamed, PhD

Paul, Ratnadeep  
PhD, Summer 2013  
Modeling and Optimization of Powder Based Additive Manufacturing (AM) Processes  
Advisor: Sundararaman Anand, PhD

Perughi, Harikishan  
PhD, Summer 2013  
Integrating Advanced Truck Models into Mobile Source PM2.5 Air Quality Modeling  
Advisor: Heng Wei, PhD

Radhakrishnan, Kirthi  
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Relationship between Loss of Echogenicity and Cavitation Emissions from Echogenic Liposomes Insonified by Spectral Doppler Ultrasound  
Advisor: Christy Holland, PhD

Rai, Durgesh  
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Quantification of Fractal Systems using Small Angle Scattering  
Advisor: Gregory Beaucage, PhD

Rawashdeh, Mohammad  
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A Relational Framework for Clustering and Cluster Validity and the Generalization of the Silhouette Measure  
Advisor: Anca Ralescu, PhD

Sandwall, Peter  
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Spatial Dosimetry with Violet Diode Laser-Induced Fluorescence of Water-Equivalent Radio-Fluorogenic Gels  
Advisor: Henry Spitz, PhD

Sarkar, Saurabh  
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Feature Selection with Missing Data  
Advisor: Hongdao Huang, PhD

Sharma, Balaji  
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Real-time Monitoring and Estimation of Spatio-Temporal Processes Using Co-operative Multi-Agent Systems for Improved Situational Awareness  
Advisor: Manish Kumar, PhD

Siegell, David  
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Prognostics and Health Assessment of a Multi-Regime System using a Residual Clustering Health Monitoring Approach  
Advisor: Jay Lee, PhD

Srinivasan, Raghuram  
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Monte Carlo Alternate Approaches to Statistical Performance Estimation in VLSI Circuits  
Advisor: Fred Beyette, PhD

St. John, Samuel  
PhD, Fall 2013  
Hierarchical Electrocatalyst Structure Control to Study Cathodic and Anodic Overpotential in Proton Exchange Membrane Fuel Cells  
Advisor: Anastasios Angelopoulos, PhD

Suleiman, Mohamed  
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Non-Linear Finite Element Analysis of Extended Shear Tab Connections  
Advisor: Bahram Shahrooz, PhD

Sun, Guohua  
PhD, Fall 2013  
Active Control of Impact Acoustic Noise  
Advisor: Teik Lim, PhD

Sutton, Jonathan T  
PhD, Spring 2014  
Tissue Bioeffects during Ultrasound-Mediated Drug Delivery  
Advisor: Christy Holland, PhD

Turek, Steven  
PhD, Spring 2014  
A Graph-Based Early Design Environment for Generating Cost Effective Mechanical Designs  
Advisor: Sundararaman Anand, PhD

Villalva Gomez, Rodrigo  
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Structure, Stability and Emissions of Lean Direct Injection Combustion, Including a Novel Multi-Point LDI System for NOx Reduction  
Advisor: Ephraim Gutmark, PhD, DSc
Wang, Feng  
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*Development of Janus Nanocomposites as a Multifunctional Nanocarrier for Cancer Therapy*  
Advisor: Donglu Shi, PhD

Wang, Yingying  
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*Integration of fMRI and MEG towards Modeling Language Networks in the Brain*  
Advisor: Scott Holland, PhD

Wen, Xingshuo  
PhD, Spring 2014  
*Creep Behavior of High Temperature Alloys for Generation IV Nuclear Energy Systems*  
Advisor: Vijay Vasudevan, PhD

Weragama, Nishan  
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*Creating Additional Internet Gateways for Wireless Mesh Networks and Virtual Cell Implementation Using Dynamic Multiple Multicast Trees*  
Advisor: Dharma Agrawal, DSc

Xie, Qing Yan  
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*K-Centers Dynamic Clustering Algorithms and Applications*  
Advisor: Yizong Cheng, PhD

Yan, Liang  
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*Tailoring of the Activation Process of Carbonaceous Adsorbents for Improving their Adsorption Effectiveness*  
Advisor: George Sorial, PhD

Yang, Xueyao  
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*Real-time Probabilistic Contaminant Source Identification and Model-Based Event Detection Algorithms*  
Advisor: Dominic Boccelli, PhD

Zehraoui, Abderrahman  
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*Enhanced Biological Oxidation of Hydrophobic Compounds Under Dynamic Load in a Trickle Bed Air Biofilter*  
Advisor: George Sorial, PhD

Zhong, Mingyu  
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*Doped GaN Grown by Phase Shift Epitaxy, Fabrication and Characterization of GaN:Eu LED*  
Advisor: Andrew Steckl, PhD

Zhu, Cheng  
PhD, Summer 2013  
*Efficient Network Based Approaches for Pattern Recognition and Knowledge Discovery from Large and Heterogeneous Datasets*  
Advisor: Kenneth Berman, PhD

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**College of Medicine**

Balli, David  
PhD, Summer 2013  
*Foxm1 Is a Novel Regulator of EMT in Fibrosis and Cancer*  
Advisor: Tanya Kalinichenko, PhD

Bittencourt, Fabiola  
PhD, Spring 2014  
*Examination of the Function of the Murine Cytomegalovirus Encoded G Protein-Coupled Receptor M33 in vivo*  
Advisor: William Miller, PhD

Boespflug, Nicholas  
PhD, Fall 2013  
*ATF3 Regulates Neutrophil Migration in Mice*  
Advisor: Christopher Karp, MD

Brundage, Meghan  
PhD, Fall 2013  
*MAF Mediates Crosstalk between Ras-MAPK and mTOR Signaling in NF1*  
Advisor: Nancy Ratner, PhD

Buccini, Stephanie  
PhD, Fall 2013  
*Cardiogenic Differentiation of Induced Pluripotent Stem Cells for Regeneration of the Ischemic Heart*  
Advisor: John Lorenz, PhD

Cha, Jee yeon  
PhD, Summer 2013  
*The Role of Muscle Segment Homebox Genes in Early Pregnancy Events*  
Advisor: Sudhansu K. Dey, PhD

Chapman, Heather  
PhD, Spring 2014  
*Gsx Genes Control the Neuronal to Glial Fate Switch in Telencephalic Progenitors*  
Advisor: Kenneth Campbell, PhD

Desai, Sharina  
PhD, Summer 2013  
*Transcriptional Regulation of Early Endocardial Development*  
Advisor: Saulius Sumanas, PhD

Donnelly, Jessica  
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*Inflammation-Induced Activation of Bone Marrow-Derived Mesenchymal Stem Cells during Gastric Disease*  
Advisor: Yana Zavros, PhD

Engevik, Melinda  
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*Ion Transport and the Gut Microbiota*  
Advisor: Roger Worrell, PhD

Eppert, Bryan  
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Advisor: Michael Borchers, PhD

Fan, Jieqing  
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*Crim1 Maintains Retinal Vascular Stability During Development by Regulating Endothelial Cell Vegfa Autocrine Signaling*  
Advisor: Richard Lang, PhD
Gardner, Jason  
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Advisor: Francis McCormack, MD

Kay, Benjamin  
PhD, Summer 2013  
Resting-State Functional Connectivity in Treatment-Resistant Idiopathic Generalized Epilepsy  
Advisor: James Eliassen, PhD

Stroop, Davis  
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The Epidemiology of Early Type 2 Diabetes Mellitus in Black and White Females: Genetic and Environmental Factors  
Advisor: Ranjan Deka, PhD

Gow, Chien-Hung  
PhD, Spring 2014  
Novel Mechanisms of Transcriptional Regulation by Leukemia Fusion Proteins  
Advisor: Sohaib Khan, PhD

Subramanian, Kavitha  
PhD, Fall 2013  
Zinc: An Immunomodulator of Innate Defense against Pathogenic Infection  
Advisor: George Deepe, MD

Hahn, David  
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Autophagy: Catabolism at the Crossroads of Lung Epithelial Homeostasis and Influenza Pathogenesis  
Advisor: Timothy Weaver, PhD

Sutherland, Mardi  
PhD, Fall 2013  
Zic3 and the Embryonic Mouse Node: Defining Early Processes Involved in Left-Right Patterning and Heart Development  
Advisor: Stephanie Ware, MD, PhD

He, Chunhui  
PhD, Summer 2013  
Physical and Psychosocial Demands on Shift Work in Nursing Homes  
Advisor: Kermit Davis, PhD

Teng, Teng  
PhD, Fall 2013  
Loss of Tumor Suppressor RPLS/RPL11 Does Not Induce Cell-Cycle Arrest, but Impedes Proliferation Due to Reduced Ribosome Content and Translation Capacity: Implications in Diamond Blackfan Anemia  
Advisor: Chunying Du, PhD

He, Xinjian  
PhD, Summer 2013  
Effects of Faceseal Leakage, Combustion Material, Particle Size, Breathing Frequency and Flow Rate on the Performance of Respiratory Protection Devices  
Advisor: Sergey Grinshpun, PhD

Terrell, David  
PhD, Fall 2013  
A Comparative Analysis of Otd/OTX Function in the Drosophila Eye: Examining Mechanisms of Evolutionarily Conserved Function  
Advisor: Tiffany Cook, PhD

Hollie, Norris  
PhD, Summer 2013  
Role of Group 18 Phospholipase A2 in Diet-Induced Hyperlipidemia and Selected Disorders of Lipid Metabolism  
Advisor: David Hui, PhD

Tuttle, Traci  
PhD, Summer 2013  
Placental Lactogen in Breast Cancer  
Advisor: Nira Ben-Jonathan, PhD

He, Chunhui  
PhD, Summer 2013  
Physical and Psychosocial Demands on Shift Work in Nursing Homes  
Advisor: Kermit Davis, PhD

Uhl, Juli  
PhD, Spring 2014  
Hox Specificity: Constrained vs. Flexible Requirements for the PBC and MEIS Cofactors  
Advisor: Brian Gebelein, PhD

Kasberg, Abigail  
PhD, Spring 2014  
Sp8 Function during Craniofacial Development  
Advisor: Steven Potter, PhD

VanderWielen, Bradley  
PhD, Summer 2013  
Thermodynamic, Structural, and Functional Characterization of MINT: A Notch Signaling Corepressor  
Advisor: Rhett Kovall, PhD
Vollmer, Lauren  
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Microglial Acid-Sensing T Cell Death Associated Gene-8 (TDAG8) Receptor in CO2-Evoked Behavior and Physiology: Relevance to Panic  
Advisor: Stephen Benoit, PhD

Waltmann, Meaghan  
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Apolipoprotein E Receptor 2 Deficiency Alters Smooth Muscle Cell and Macrophage Characteristics to Promote Atherosclerotic Lesion Necrosis  
Advisor: David Hui, PhD

Wang, Sha  
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The Apicobasal Polarity Protein Network during Stratified Xenopus Epidermis Development  
Advisor: Aaron Zorn, PhD

Webb, Mark  
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Allergen-Induced Chemokine Release from the Bronchial Epithelium: A Novel Lysosomal Release Mechanism  
Advisor: Marsha Wills-Karp, PhD

Wissling, Erin  
PhD, Spring 2014  
Uncovering the Complexity of Muscular Dystrophy Pathology through Disease Signaling  
Advisor: Jeff Molkentin, PhD

Yeramaneni, Samrat  
PhD, Summer 2013  
Exposure to Secondhand Smoke and Neuromotor Performance in Appalachian Children  
Advisor: Erin Nicole Haynes, PhD

You, Jia  
PhD, Fall 2013  
Functions of Heparan Sulfate Proteoglycans in Cell Signaling and Stem Cell Regulation during Drosophila Development  
Advisor: Xinhua Lin, PhD

Zhou, Xuan  
PhD, Summer 2013  
RhoA GTPase Controls Cytokinesis and Programmed Necrosis of Hematopoietic Progenitors  
Advisor: Yi Zheng, PhD

Zipkin, Frida  
PhD, Spring 2014  
Assessment of Manganese Dietary Intake for a Rural Pediatric Population  
Advisor: Erin Nicole Haynes, PhD

Allen, Susan  
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Advisor: Edith Morris, PhD

Konicki, Tara  
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The Effect of Simulation on Hand Hygiene Knowledge, Beliefs, and Behaviors of Nursing Students  
Advisor: Elaine Miller, RN DNS

Miller, Julie  
PhD, Summer 2013  
Factors Influencing Influenza Vaccination of Children  
Advisor: Gordon Gillespie, PhD

Nypaver, Cynthia  
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Picturing Healthy Moms, Babies and Communities  
Advisor: Donna Shambley-Ebron, PhD

Bian, Boyang  
PhD, Spring 2014  
Exploring and Developing Algorithm of Predicting Advanced Cancer Stage of Colorectal Cancer Based on Medical Claim Database  
Advisor: Jianfei Guo, PhD

Burkes, Shona  
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Quantitative Multimodal Skin Imaging in Pediatric Health Care: Infantile Hemangiomas and Hypertrophic Burn Scars  
Advisor: Marty Visscher, PhD

Chiu, Shih-Feng  
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Advisor: Alex Lin, PhD

La Count, Terri  
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Skin Absorption Modeling of Metal Allergens via the Polar Pathway  
Advisor: Gerald Kasting, PhD

Tundia, Namita  
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Advisor: Pamela Heaton, PhD

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Advisor: Kevin Li, PhD

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Photography and Layout: Saeide Karimi
Additional Photography: Zachary Gerberick, Sharareh Khosravani, Emily Schmidt
Additional Layout: Emily Schmidt
Contributing Writers: Hillary Oberpeul, Megan Tischner, Kara Sorrell, Caroline Alikonis
Statistical Data: Caroline Alikonis

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