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Students Benlina Aier and Jess Rehs, pictured with their mentor, Matt Heintz, monitored animal behavior at Lincoln Park Zoo over the summer as part of the Dean's Undergraduate Fellowship program.

Read more on page 4.
Alumna entrepreneur finds success at the intersection of chemistry and law

Katherine Kim's top four tips for recent graduates:

Keep building your resume. 
Even if you don't know what you want to do, keep adding value to your resume. Do something productive that will make you stand out, whether it's starting a blog, getting published, securing a business contact or pursuing a degree.

Network. 
If you're going to start your own business, you have to have a network. A lot of people say they hate networking. If that's the case, pair up with someone who enjoys networking so you can work as a team.

Be realistic about your weaknesses. 
I think the most successful people are the ones who understand their own weaknesses. Don't try to do it all yourself. People think they can do everything, but that's inefficient. You can do so much more if you partner with someone who complements you.

Don't take things personally. 
You're never going to be liked by everyone, so don't worry about it. Just move on from that. Statistically, you're bound to meet someone who is cool, who is helpful, who will become a mentor or a mentee or a friend.

Reflections from the Dean

As CSH in achieving our overarching goal of establishing DePaul as the premier choice for students seeking a well-guided pathway into science, mathematics and health careers.

Dean Gerry Koocher, PhD

CSH progress notes

in curriculum development, and few have direct alliances that enable students to accelerate into graduate school or professional degree programs effectively. Over the next year, we will launch a new strategic-planning effort aimed at enhancing this integration and adding new partnerships to improve career options for our students. I look forward to leading CSH in achieving our overarching goal of establishing DePaul as the premier choice for students seeking a well-guided pathway into science, mathematics and health careers.
Lions, lycops and laboratories:
CSH students thrive in summer internships

This past summer, senior Berlina Aier stood in front of the Sichuan takin exhibit at Lincoln Park Zoo. Armed with an iPad, the psychology major used the ZooMonitor app to record behavioral information about the five takins, a type of goat antelope, milling about their environs. “I never thought I’d learn how to distinguish and name them,” Aier exclaims. “It was definitely overwhelming trying to collect data on all five of them at once!” Nonetheless, by midway through Aier’s internship, she had mastered this crucial task. “We want to make sure we have a clear understanding of how the animals are spending their time so we can optimize their health and welfare, as well as replicate their wild conditions as much as possible,” explains Matt Heintz, a welfare monitoring postdoctoral fellow and Aier’s mentor.

As one of eight recipients of the inaugural Dean’s Undergraduate Fellowship program, Aier worked 30 hours per week at Lincoln Park Zoo, conducting two rounds of observations daily, training volunteers on the process, compiling and managing data, and analyzing journal articles. “Though I have some previous research experience, I wanted to work over the summer to better develop my research skills,” Aier says. While she enjoyed checking in on her assigned animals, including lions, snowy owls and polar bears, Aier also appreciated the larger scope of her internship, checking in on her assigned animals, including lions, snowy owls, and polar bears. “I never thought I’d get treated as if I am just another scientist at Argonne, which makes me want to dedicate even more time to my research project.”

The fellowship program, operated by the college’s Office of Advising and Student Services and financially supported by the Dean’s Advisory Council and other donors to the Dean’s Undergraduate Research and Internship Fund, provides students with a $3,200 stipend for the summer. “Many DePaul students work to support their academic studies and often cannot afford to take advantage of low- or unpaid internship or research opportunities,” says Sara Miller-Acosta, associate vice president of development. “At the same time, these opportunities are often critical for students seeking hands-on research experiences outside the classroom.”

During summer 2014, Lincoln Park Zoo and Argonne National Laboratory each accepted two interns through the program; another four students held positions at The Field Museum.

Staff mentors at each institution encouraged their interns to ask questions, maximize their efforts and produce high-quality work, which the students showcased in digital portfolios. They will also be sharing their research at the Annual Natural Sciences, Mathematics and Technology Showcase in November. As senior biological sciences major Vishal Patel notes, “What good is science if someone does not have the skill set to present it in a manner that the majority of people understand?” During his internship in the botany department at The Field Museum, Patel found that developing his communication skills happened naturally on the job. “The diversity among interns and staff members is nothing short of extraordinary, so it brings great conversations and different perspectives to the table,” he says.

Among other responsibilities, Patel assisted with several digitization and visualization projects funded by the National Science Foundation, including expanding a database of fern and lycopod herbarium specimens. “This project will greatly increase the accessibility of the collections, making them available online to the scientific and broader community, with far-reaching applications,” he says. Patel’s mentor, Matt Von Konrat, a collections manager and adjunct curator at the museum, says the students’ contributions made a real difference, and he valued their dedication to the project. “The museum is a great place to learn, but there’s an entire other half of physics that I had never seen,” he explains. “My personal goal is to find out as much as I can about how science is done outside of the classroom.”

For senior Matthew Kwiecien, a double major in physics and computational math, the fellowship presented an opportunity to learn more about possible career paths. “The university is a great place to learn, but there’s an entire other half of physics that I had never seen,” he explains. “My personal goal is to find out as much as I can about how science is done outside of the classroom.”

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As a member of the Advanced Photon Source team, Kwiecien wrote code to generate images from X-rays. The project entailed correcting a set of 500,000 raw, recorded data files and then adjusting the image parameters to produce high-quality images of the sample. While the scope of this work was daunting, Kwiecien was ready for the challenge. “I don’t think I could have been more prepared for this fellowship, and for that, I have to thank DePaul’s physics department,” he affirms. “Having a solid foundation in physics, both theoretical and experimental, has made it much easier for me to jump into my project and adapt to a new setting.”

While some students view summer as a time to relax, Kwiecien couldn’t wait to head to his internship each day, calling it the professional experience of a lifetime. “It’s an investment in our future,” Patel says. “We have been given the opportunity to create connections, develop time management and communication skills, and build a resume that’s suitable for our career.” While Aier says she still has a long way to go, she’s certain that these experiences will serve all of the fellows well in the next chapter of their journeys. “With the skills and knowledge we have gained in our positions, I know that we will be more prepared for the real world, graduate study and research,” she says. “Personally, I can’t wait!”

Clockwise from left: Vishal Patel, Edward Gluzman and Simk Franz at The Field Museum; Gluzman displays a fern sample; a map shows the origins of the fern specimens.

For more information or to support the Dean’s Undergraduate Research and Internship Fund, contact Paula Starkey, director of development for the College of Science and Health, at (312) 362-6341 or pstarkey@depaul.edu.
Fielding a team for a mission to Mars

Imagine being confined to a small room with a handful of co-workers for years on end. This situation may sound extreme, but for astronauts deployed on space missions to destinations such as Mars, it will be their daily reality. “It will probably be difficult or impossible to swap out crew members once they are on their way, and the crew will likely encounter challenges that we have no way of predicting,” says Associate Professor Suzanne Bell, who has been studying the composition of effective teams for more than 10 years. “So it seems particularly important to make sure we’ve got the right astronauts and the right mix of astronauts in the vehicle at launch.”

With plans underway to land the first people on Mars in the not-so-distant future, NASA is funding research projects related to that ambitious endeavor. Last year, Bell won a competitive contract from NASA to research and identify team composition issues for long-distance and long-duration space expeditions. Bell’s findings will help NASA understand the potential implications of different team compositions and inform the trajectory of future studies.

The lack of any prior trips of similar length on which to base the study did not deter Bell. On the contrary, she embraced the challenge. “Our first step was to do a literature review on team composition research that has been conducted in environments analogous to long-duration space flight,” she says. “For example, we looked at scientist teams wintering at stations in the Antarctic.” Bell notes that it was critical to compile data from situations that mimicked the isolation, confinement, duration and small-group dynamics of the proposed Mars exploration. Junior Christina Teach, one of Bell’s three undergraduate research assistants, helped with this aspect of the project. “We sought out specific composition variables, such as demographics, personality variables, values, and general mental ability and intelligence,” she explains.

Next, Bell interviewed astronauts, mission directors, capsule communicators who talk to the astronauts during their flights and other individuals involved in astronaut and mission control selection and training. This operational assessment provided insight into NASA’s current methods for creating mission crews and revealed certain potential problem areas. “Generally speaking, the most memorable responses were when interviewees agreed that it is important to consider the individual differences of crew members when selecting teams for long-duration missions,” says graduate research assistant Shanique Brown. “This response, coming directly from those who have experienced living in isolation, really speaks to the value of the work done by industrial/organizational psychologists.”

While Bell cannot discuss the comprehensive results of her research until NASA approves the final tech report, the team presented select preliminary findings at the Annual Convention for the Association for Psychological Science in May. Specifically, Bell shared intriguing results regarding extraversion. “In more traditional work teams, the qualities of extraverted individuals—sociable, fun-loving, friendly and talkative—can be an asset,” she explains. “However, [these qualities] may not be desirable to staff crews who live and work in isolated and confined environments.” Furthermore, while research on traditional teams suggests that blended teams of introverts and extraverts appreciate each other’s differences, this may not be the case for long-duration space travel.

Bell stresses that more research is necessary to fully understand these initial results. “My guess is that you wouldn’t want to send a crew that is too extreme toward either end of the pole,” she says. “Introverted astronauts might do better in terms of being able to cope with the social monotony and living in an isolated and confined space, but all-introvert crews may have their own challenges with leadership and engaging in effective team processes.” Personality type is only one factor of many that NASA will need to consider in forming expedition teams. By way of example, Bell adds, “There may be circumstances in which NASA will have to choose certain rare expertise over a specific personality mix.”

The project’s unique context was never far from the research team’s minds. In February, Bell and Brown attended the NASA Investigators Workshop in Galveston, Texas, where fellow academics presented their own behavioral health research. The itinerary also featured a behind-the-scenes tour of Houston’s Johnson Space Center, which Brown calls surreal. “We observed mission control crew members monitoring the International Space Station,” she says. “The highlight for me was looking at and touching the technology used during the Apollo missions.” Teach, the undergraduate research assistant, felt a similar connection to the history behind the project. “I read interview after interview of famous astronauts such as Sally Ride and Owen Garriott,” she says. “It was very interesting and sometimes comical learning about their experiences!”

With the initial contracted project completed, Bell is already submitting follow-up grant proposals to NASA. In fact, NASA used some of her recommendations from the interim tech report to shape a recent research call. “NASA has their work cut out for them over the next few years,” Bell asserts. “But it’s definitely been exciting to apply team composition theory to such an extreme context.”
Professor Craig Klugman on the medical humanities

While medical science may evoke certain images in the popular imagination—jumbles of test tubes, high-tech microscopes, serious doctors in lab coats—the breadth and depth of the field far exceed these symbolic markers of scientific inquiry. In truth, the field has always overlapped with many other disciplines in diverse and fruitful ways. From Leonardo da Vinci’s anatomical drawings to political debates over genetic testing, cross-disciplinary approaches routinely inform the medical field’s understanding of the patient and practitioner experience. The medical humanities focuses exclusively on this arena by drawing on the humanities, social sciences and the arts to explore human health and illness.

Professor Craig Klugman, chair of the Department of Health Sciences, holds a PhD in medical humanities and teaches regularly on the subject. He recently shared his thoughts on this interdisciplinary field.

What are the origins of the medical humanities? How did you personally become interested in this area of study? The medical humanities traces its origins to the studia humanitatis in the early Renaissance era. As scholars coming out of the Dark Ages began reading the texts of ancient thinkers, they started asking questions about their own world and the meaning of existence. In modern times, this field finds its origins in the 1970s, when scholars in the humanities and social sciences realized that they were interested in the same questions about the human experience of health, illness and emerging biotechnology.

I became interested in this area of study when I was completing a master’s degree in medical anthropology and a second master’s degree in bioethics. I also had a background in biology and theatre. It seemed to me that there were natural connections between all of these areas, and I found that confluence in the medical humanities.

You recently taught an undergraduate course on this topic. What did you want your students to take away from the course, and how did you achieve those objectives? For the past five years, I had been teaching the medical humanities in medical and nursing schools. Students at that stage of their learning have preconceived notions about what is needed in that work—pure science—and they sometimes lose touch with the meaning of their work and the patient’s experience of illness. I realized that professional school is too late to begin this instruction—pure science—and they sometimes lose touch with the meaning of their work and the patient’s experience of illness. I hope that my students learn that they must always remember the patient’s experience in illness, that their role is to help the patient to further their narrative, that human experience is created through shared storytelling and that professional satisfaction does not come from a paycheck but from finding deep meaning in your work.

What are some of the current issues in the medical humanities? Why is this field important? Contemporary issues in the field include pain and suffering, the experience of aging, the experience of being a person with a disability and moral distress in the health care practitioner. The medical humanities provide understanding and context for the lived reality in which people experience sickness and offer an opportunity for us to explore the creation of meaning in medicine, health and biotechnology. The goals are to help patients make sense of their illness, assist practitioners in finding meaning in their work and encourage students in examining the human condition. The medical humanities allow us to keep a pulse on our humanity—to remember at all times that ill people are subjects and not objects.

In this course, we run the gamut of the human experience. First, students learn how to read literature critically, interpret the language of film, observe art and music, and produce reflective writing. Then we use the humanities to discuss human suffering, practitioner burnout, euthanasia, genetic engineering, health disparities, professionalism and the importance of self-reflection and creating meaning in your work.

Kirby McKinnon (CSH ’14) grew up in an affluent suburb of Chicago, but she didn’t share the privileged experiences of the majority of her classmates. She was enrolled in the free lunch program in high school, and as soon as she was old enough, McKinnon found a job in retail. “I needed to start preparing to support myself financially,” she says. “I’ve spent nearly half my life stressing about making ends meet.”

Financially, DePaul was a stretch for McKinnon, a health sciences major and French minor. “I had serious doubts I’d ever be able to fund four years of college,” she says. Despite qualifying for Pell grants—a need-based federal grant program for low-income undergraduate students—and a variety of subsidized and unsubsidized loans, as well as holding down a job, McKinnon struggled to cover all her expenses. Then, in 2011, her family lost their house. “I was panicking,” McKinnon recalls. “My world had come crashing down.” Unsure where to turn, she reached out to Carolyn Luna (LAS ’13), her mentor in the Students Together Are Reaching Success program in the Office of Multicultural Student Success. Not long after their conversation, McKinnon received the Cuneo Foundation Scholarship and a Girsch Foundation Scholarship. “I was in disbelief,” McKinnon says. “I look back on that moment and feel nothing but gratitude for all the work that went into keeping me enrolled as a student at DePaul.”

McKinnon made the most of her DePaul experience, including serving as a peer mentor and securing a grant that enabled her to study abroad. When she crossed the stage at commencement, she became the first person in her family to graduate from college. Success stories like McKinnon’s happen every year at DePaul, but they wouldn’t be possible without the generosity of alumni donors. “There are so many people fighting for a chance to unlock their potential,” McKinnon notes. “My scholarship donors gave me the opportunity to do that.”
Starting this winter quarter, students will enjoy an upgrade to the fourth floor facilities in the Monsignor Andrew J. McGowan Environmental Science and Chemistry Building (McGowan South), which will include new teaching labs for anatomy, physiology and physical chemistry, as well as an open lab. Further renovations took place on the third floor, where a second organic chemistry lab welcomed students this fall, and modifications include new teaching labs for environmental science, and a second lab for organic chemistry, as well as an open lab.

On June 15, the college awarded its first Doctor of Nursing Practice (DNP) degree to Marcia Stout (CSH DNP ‘14), visiting assistant professor and interprofessional lab coordinator. Stout, who is also a family nurse practitioner in a community clinic, entered the program in 2012. “The program is exciting because it educates advanced practice nurses to become transformers of the health care system on multiple levels,” she says. “This degree has advanced my career perspectives at a clinical educator, scholar and leader in health care.” Pictured: Clinical Associate Professor Ronald Graf, Stout and Assistant Professor Joseph Tariman.

Professor Liam Heneghan (LAS DNP ‘13) of the Department of Environmental Science and Studies won the 2014 CSH Excellence in Research Award. This annual award recognizes faculty who have made significant scientific contributions in their area of research and who promote outstanding research at the college. In a nomination letter, Professor David H. Wise, associate director of the Institute for Environmental Science and Policy at the University of Illinois at Chicago, called Heneghan an “exceptional, multi-faceted researcher” and a “selfless and invigorating collaborator.” Heneghan’s areas of research include urban ecology and restoration management. Follow him on Twitter @DublinSoil. Pictured: Dean Koocher and Heneghan.

Dorothy Kozlowski, professor of neuroscience, was elected as the next president of the Society for Neuroscience Chicago Chapter. Her term will begin in 2015 and last two years. In addition to organizing a yearly scientific meeting, the society works on outreach and education programs in the community, connects neuroscientists in the Chicago region and mentors young scientists. Kozlowski was also appointed as a St. Vincent de Paul Professor for the 2014–15 academic year. St. Vincent de Paul Professors are a cohort of faculty who promote the university’s educational mission in ways consistent with Vincentian personalism, social justice and service. Photo credit: DePaul University/Jeff Carrion.

On May 5, Leonard Jason, professor of psychology and director of the Center for Community Research, gave an invited talk entitled “Diagnostic Criteria for Myalgic Encephalomyelitis/Chronic Fatigue Syndrome” to a panel of scientists at the Institute of Medicine in Washington, D.C. The panelists are part of a commission that is considering new names for chronic fatigue syndrome, as well as new criteria for a case definition. Watch a recording of Jason’s talk at bit.ly/JasonIOM.

In honor of Earth Week 2014, the college hosted a screening and discussion of “Green Fire: Aldo Leopold and a Land Ethic for Our Time.” Approximately 75 students, faculty and staff gathered to watch the documentary, which offers insight into the writings and philosophy of the early-20th century environmentalist Aldo Leopold. Curt Meine (LAS ’80), a conservation biologist and the film’s narrator, headed a panel discussion following the screening. The event also gave students an opportunity to network with panelists, who included The Field Museum’s Urban Conservation Director Laurel Ross and the Center for Humans & Nature’s Director of Cultures of Conservation Gavin Van Horn.
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