

CLAS

MAGAZINE

Fall 2014 • Volume 3 • No. 2

Alumni leap to success with CLAS degrees

POLITICS IN INTERNSHIPS

TEXTILES MEET TECHNOLOGY

WRITE YOUR NOVEL IN A YEAR

ASU COLLEGE of
LIBERAL ARTS
& SCIENCES
ARIZONA STATE UNIVERSITY

Dean's note

We always have far more compelling stories about our alumni, students and faculty than we have space for and this reflects the range of talents and skills found in the College of Liberal Arts and Sciences.

You will meet alumni using their critical thinking skills to boost their successes in their pursuits of becoming a surgeon and helicopter medic, designing the future of law on Capitol Hill or acquiring the physics training to create new sources of energy.



See how faculty and students, through their experiences and language training, are changing the way we learn. Cristóbal Martínez and Kristin Searle work with Arizona State University's Professor Bryan Brayboy and the University of Pennsylvania to incorporate the LilyPad Arduino, a microcontroller board, into fabric that provides math skills, coding and microcircuits to assist the arts in K-12 classrooms in the Salt River Pima-Maricopa Indian Community. You can also trace the steps of budding actuaries, who pursue the No. 1 career in the nation at one of the only colleges in the West to offer this training: ASU's College of Liberal Arts and Sciences.

Our college also leads the nation in support of U.S. service members, named a "military friendly school" for the fifth year in a row and "top college for vets" by the "Military

Times." The college is also home to The Chinese Flagship Language Program with a pilot program crafted specifically for ROTC students in the U.S. Navy, Army, Air Force and Marines.

Do you enjoy Sherlock Holmes on PBS? If yes, then please join graduate student and lawyer Dawn Opel as she incorporates digital learning skills and devotion of fandom into children's literacy and learning.

A key goal for the college is to prepare students for the future. We want our students to master careers and opportunities that are on the horizon—as the "Wall Street Journal" reported: ASU is No. 1 in Arizona and No. 5 in the U.S. for best-qualified graduates.

Finally, I would like to wish the managing editor and creator of "CLAS Magazine," Margaret (Peggy) Coulombe, the best of luck in her new role in support of ASU's Office of the Provost. "CLAS Magazine" is a shining light for the college and Peggy and her team have produced vital and compelling articles over several years.

Peggy also helped support 21 undergraduate students, graduate students and postdoctoral fellows seeking to improve communications with the public. One of these students, Anthony Costello, recently received an Award of Excellence in Feature Writing for his story about Teotihuacán in the spring 2014 issue of "CLAS Magazine" from APEX, a professional organization recognizing excellence in publishing. Thank you for all of your efforts, Peggy.



Patrick J. Kenney
Vice Provost and Dean
College of Liberal Arts and Sciences

On the cover:

Flagstaff Extreme co-owner and ASU alumnus Paul Kent credits his studies in liberal arts and sciences for the success of his outdoor adventure park Flagstaff Extreme. Photo: Michelle Koechle



Digital edition



This publication is available in digital formats, with in-depth video, audio and photography. For information on downloading the app: clas.asu.edu/magazine

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Contact us!

We are interested in connecting with CLAS alumni, emeriti and students. If you would like to suggest a topic or contribute an article, please contact the managing editor sarah.muench@asu.edu. Manuscripts should be less than 1,000 words, photos should be high resolution and submissions should include all pertinent contact information. You can email or snail mail the content to Sarah Muench, CLAS Magazine, P.O. Box 876505, Tempe, AZ 85287-6505.

We reserve the right to edit all submissions.

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Faculty and graduate students from Arizona State University, University of Washington, and Chicago Indian Center—building prototypes for future, collaborative projects. All Photos: Iris Krondorff

intertwined

**weaving textiles, electronics
and culture with opportunities**

By Anthony Costello

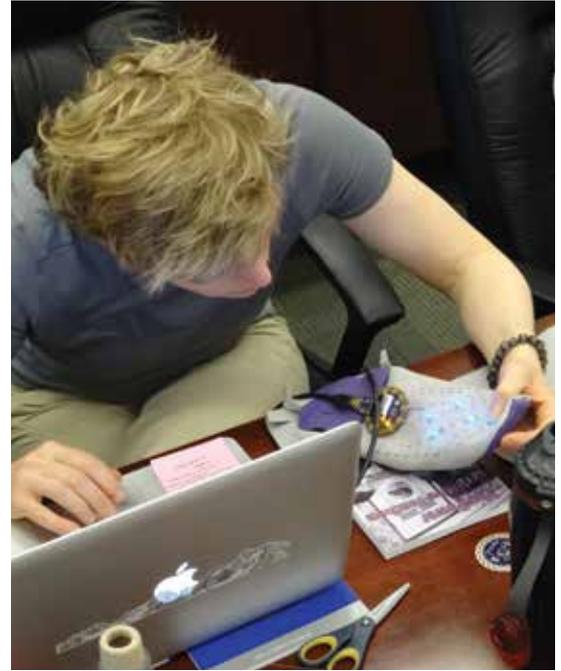
The misconception that technology includes anything with a microchip is prevalent today, but technology goes beyond just mere circuits and wires. Arizona State University's E2 (ethno-electronic) Textiles Project combines hundreds of years of indigenous culture and melds it with electronics to create educational, innovative art; a perfect balance that simultaneously honors the past as it steps toward the future.

Professor Bryan Brayboy of ASU's School of Social Transformation explains that e-textiles introduces lights, namely LED lights, in apparel such as boots, jackets and shirts, much like the clothing worn by the band Black Eyed Peas during their 2011 halftime show at the Super Bowl.

"E2-textiles allow us to connect computer science programming and what people already know," Brayboy said.

An example of "what's known" is the numerous canal systems seen throughout the valley created by the Hohokam; Brayboy calls this type of native knowledge Indigenous Knowledge Systems (IKS). "Combining ways of knowing indigenous ways of knowledge with computer programming helps young people understand technology is not just electronics," Brayboy said.

Brayboy hopes the program resonates with students and their culture. "I want to help



young people see the connection between IKS and programming and get people to understand that technology is also about utilizing the environment around you to survive," Brayboy said, "Your iPad is not the only form of technology."

Brayboy credits Kristin Searle, a doctoral candidate from University of Pennsylvania and affiliate faculty with ASU, for bringing the project to ASU. "I decided to bring e-textiles to ASU because I had a long-standing relationship with Dr. Brayboy. He was a member of my master's thesis committee at the University of Utah," Searle said. "I knew we needed a grant partner who could facilitate a strong partnership with a native community and Dr. Brayboy was able to do that through ASU's Center for Indian Education."

"The idea with e-textiles is to not only to make art that is pleasing to look at, but develop that art with technology in the form of computer programming through student creation," Brayboy said. "Students use a computer to program a microcontroller, a LilyPad Arduino, the size of a quarter. This small computer is sewn into the clothing with conductive thread and what the student has programmed determines whether the LEDs light up to the beat of music or other things," Brayboy said.





Bryan Brayboy working on lighted apparel. Photo: Iris Krondorff

Searle is collaborating with Cristobal Martinez, an ASU graduate student whose abilities have proven invaluable to the project. “He’s a master artist and an energetic teacher,” Searle said, “his scholarship constantly brings new perspectives to bear on our collective research.”

"Working with students in the classroom can be crazy, but it's so much fun."

— Kristin Searle

“Martinez and Searle spend around 40 minutes a day with young people teaching them what it is to be a native person,” Brayboy said. “What does it mean for these students to learn about their culture and native language? You get to do this and still be an O’odham or Piipaash.”

“Working with students in the classroom can be crazy, but it’s so much fun,” Searle said. “Our work space always seemed a little out of control and perhaps even messy and loud, but when I would pause in the midst of the chaos and look around, something amazing was happening.”

“Students were deeply engaged in solving complex problems and helping one another along the way,” Searle said. However, the program wasn’t easy for all of the students. “Students come into our workshops with very real challenges in their lives — both personal and academic — and frequently do not enjoy time spent in school.”

“Often, when we begin working with a new class, the room is very quiet,” Searle said. “But our workshops provide spaces where students can explore other ways of doing school and soon the classroom is loud as students chat with one another about the best way to avoid a short circuit or discuss a particular blinking pattern for their finished creation.”

The ability of the program to travel from classroom-to-classroom is key to the program’s success and something that Searle finds rewarding. “Nothing is more rewarding than when a student seeks out a computer to program an e-textile birthday present for her mother outside of class time or when a teacher reports that a student wore his light-up jacket throughout English class,” Searle said. “Students’ curiosity and the ways in which they have experimented with and pushed back against our curriculum have fundamentally altered how we think about teaching and learning with e-textiles materials.”

Not only does the project provide illuminating, intrinsic value, but it’s potentially a lifesaving tool. Lighted apparel can alert drivers to the presence of children on the street or road, and it is especially useful in places like Alaska where children walk to school during Alaska’s 24-hour cycle of darkness. “It’s a big issue in Alaska when it gets dark in the winter,” Brayboy said, “you can do this with reflective tape too, but it’s the process of creating art and design that is compelling.”

As the project grows and continues to evolve, Brayboy is already thinking about what’s next for the project. “The next iteration for us is how to potentially introduce programming courses out at Salt River Pima-Maricopa Indian Community taught by faculty at ASU,” Brayboy said. “What we’re talking about here is an opportunity for people to be involved with their community and to be computer scientists.”

“That is what we should be doing as an institution. Giving students who are invested in the state the power to accomplish their goals,” Brayboy said. ■

Chinese Language Flagship program at ASU advances military service

By Margaret Coulombe

Though an Arizona native, growing up overseas in Japan, Guam and other regions of the Pacific, Midshipman John Paul Mulligan was captivated by Asian language and culture from an early age. It was a passion he pursued first at Brophy High School, where he studied Chinese, then at Fordham University in New York, where he also joined Navy ROTC.

However, less than a year later, he was back in Arizona; a decision that has changed his life.

“I came back to Arizona to attend the Critical Languages Institute’s summer program offered by the Melikian Center,” said Mulligan. “I had no intention of transferring to Arizona State University. Then, I met the director of the Chinese Language Flagship program Madeline Spring. I quickly realized that joining ASU’s Flagship ROTC program meant I could more quickly achieve a professional-level proficiency in Chinese and bolster my naval career.”

According to the Foreign Service Institute, to achieve an advanced level of proficiency in Chinese, Arabic, Japanese or Korean requires between 1,320 and 2,760 hours and up to 92 weeks to attain. That is nearly twice the hours that students typically commit to in more traditional language study. To achieve that level of proficiency, students entering Flagship programs undergo significant testing and targeted training.

One of 80 Flagship students studying Mandarin, which is the primary language in China, Mulligan discovered he was weak in grammar, fluency and language comprehension but strong in reading and writing.

Midshipman John Paul Mulligan
Photo: Jacob Sahertian

So in addition to taking Chinese language classes, Mulligan received intensive tutoring tailored to address these deficits. Flagship students also take courses in history, literature, politics and religion taught entirely in Chinese. Summer immersion accelerates learning and cultural proficiency as well. In just two years, Flagship students can attain four years of language and cultural training.

“Programs like Chinese Flagship are critical in providing the level of expertise needed to understand the peoples and cultures in areas we operate in,” said Captain David Price, commanding officer of ASU’s Naval ROTC program. “Graduates of such programs become force multipliers for us and have true strategic impact, helping us to build friendships while also ensuring that potential enemies and we understand each other. In short, graduates from programs like Chinese Flagship can help us achieve our national security strategy while also helping us avoid potentially costly mistakes.”

The ASU ROTC program is one of only three pilot programs in the U.S. funded by the Department of Defense. “Military leaders realized the importance of having speakers in critical languages in the services,

post- 9/11,” said Madeline Spring, founder and director of ASU’s Flagship program and a professor in the School of International Letters and Cultures. “ASU was chosen because we offered a strong foundation in both our Chinese language and ROTC programs.”

Spring’s staff worked closely with ASU’s ROTC leadership to integrate the two programs over the past three years. One of the early challenges was aligning programmatic schedules, which were significantly different.

As Anthony Tam, the Flagship’s program manager, noted: “We learned from each other. We developed online programs and other tools

so that our ROTC students could maintain their training even if they are away for ROTC commitments. We wanted no breaks in the language training.”

For nine weeks last summer, Mulligan studied in Xiamen, a city in the Fujian Province in southeast China. This summer, he travels to Beijing to study. One of the capstone requirements for his senior year is a full year overseas. Flagship Chinese students either complete one semester

“Programs like Chinese Flagship are critical in providing the level of expertise needed to understand the peoples and cultures in areas we operate in.”

— Captain David Price



at Nanjing University and then another semester working at an internship in China or spend a full year at a university in Tianjin, the fourth largest city in China. The second option gives students a more structured environment and more classroom time, Mulligan said. “You cannot study the language without understanding the culture.”

Delving deeply into a language and culture also attracted the attention of Midshipman Meghan Treece. “I had been in the student ambassador program in 8th grade and gone to Malta, Italy and France. Our tour guide spoke five languages and I thought it was the coolest thing you could ever do,” said Treece, a junior in Chinese language who is also pursuing a minor in Spanish. “I want to be a pilot and perhaps go into military intelligence where there are lots of opportunities to use language.”

While modest and still growing, the Flagship ROTC program can really change misconceptions of what ROTC is about and what language in the services is really about. “We need language for national security but also for diplomacy, disaster relief and other civilian needs supported by our military members,” said Spring.

"We need language for national security but also for diplomacy, disaster relief and other civilian needs supported by our military members."

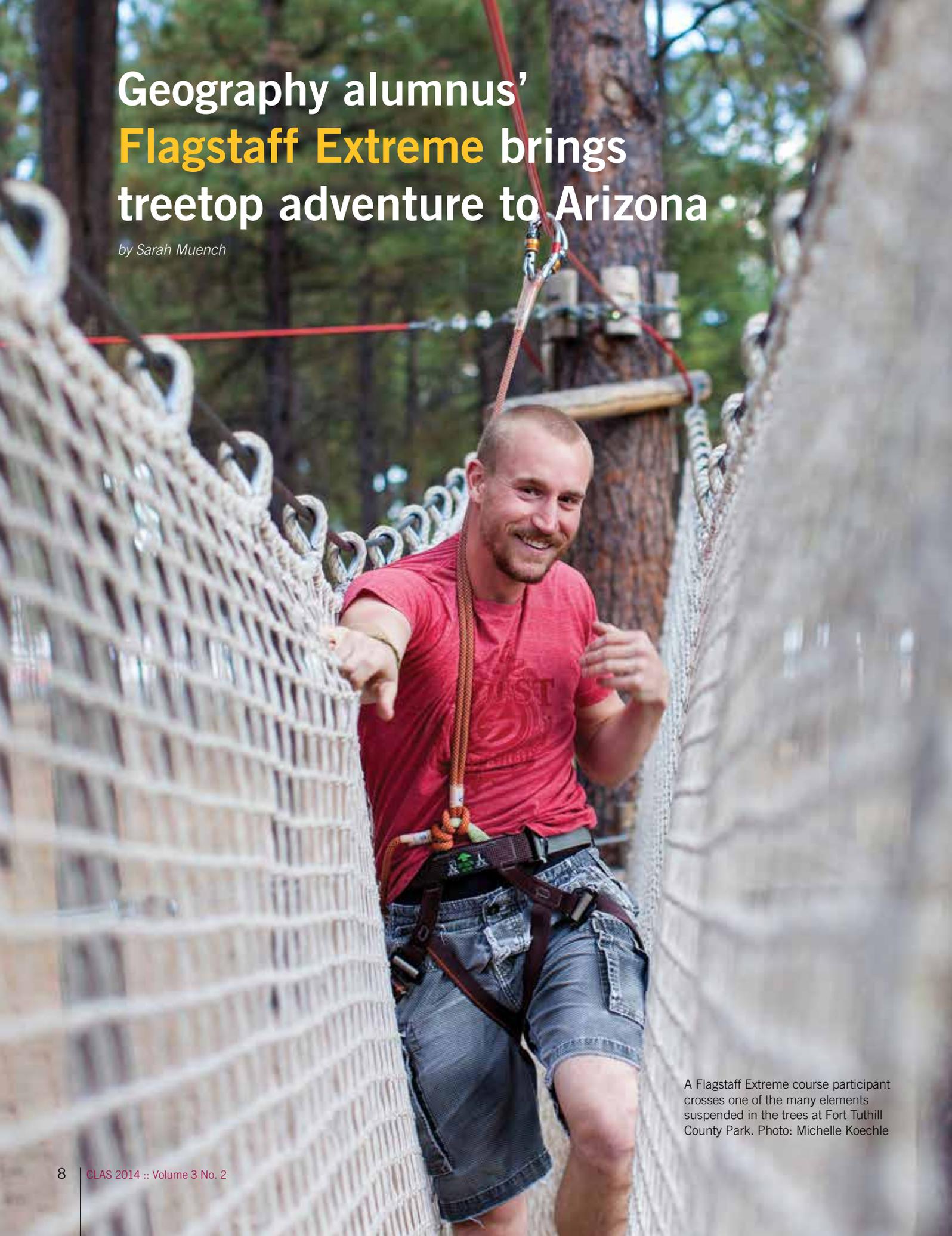
— Madeline Spring

Nationally, the U.S. Army and Air Force will establish scholarship programs for Flagship programs in more than 26 critical languages, a result of the successes seen from the Flagship Chinese ROTC pilot programs. “This program builds stronger candidates, individuals who excel as they advance in the services,” said Spring.

Mulligan agrees. His hope is to commission directly from the ROTC program into cryptology (the technology of making and breaking of codes and ciphers), linguistics or intelligence work. While the Air Force and Army have already commissioned people through the Flagship ROTC program, he would be the first naval Flagship graduate from ASU. If successful, he looks to become a foreign area officer, be posted to an embassy or become a military attaché.

His advice to incoming freshman ROTC Flagship Chinese students: “There are more foreign Chinese speakers studying at ASU than in colleges in New York City or D.C. So don’t get overwhelmed in your freshman year adjusting to the military culture and college lifestyle. Put as much time as you can in the language and get a solid foundation. It will change your future.” ■



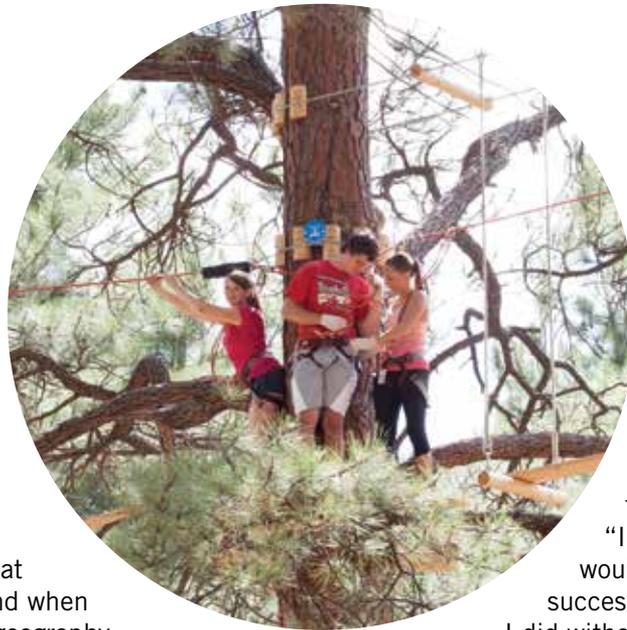


Geography alumnus' **Flagstaff Extreme** brings treetop adventure to Arizona

by Sarah Muench

A Flagstaff Extreme course participant crosses one of the many elements suspended in the trees at Fort Tuthill County Park. Photo: Michelle Koechle

Flagstaff Extreme participants
hook in and prepare to move
across their next course element.
Photo: Michelle Koechle



Swinging from tree to tree like Tarzan on a daily basis wasn't what Paul Kent had in mind when he decided to study geography at Arizona State University. Nor was he planning on opening one of most successful and fun adventure attractions in Arizona.

"He has a dream job," Alicia Clark said, Kent's employee and an ASU journalism junior.

As the co-owner of Flagstaff Extreme, a treetop adventure course that presents physical challenges suspended in the trees at various heights, Kent, 48, never tires of flying down a zip line or running across a precarious wooden bridge. He also loves watching others attempt to do the same.

"It's really wonderful to see the smiling and intense faces," Kent said.

Originally from New Jersey, where his father was an airline pilot, Kent said he was always interested in planes, navigation, maps and "far-away places."

Now, Kent said he is using his geography degree from ASU's College of Liberal Arts and Sciences up in the trees and on the ground.

"It helped me in a lot of ways, such as in my analysis in where to locate the course and

demographics and things like that," Kent said. "I don't think I would have had the success in business that I did without my basis in the liberal arts and sciences."

Forest through the trees

After he graduated from ASU in 1988, Kent began working as a customer service representative at Tempe-based, then-startup Insight, a technology solutions company, as he continued to apply for geography-related jobs.

But as the company grew, so did Kent, by learning from Insight founders Tim and Eric Crown, Kent said. Kent became senior vice president of operations and with Insight's executive management team played a pivotal role in the company's current success as a worldwide Fortune 500 company with revenue streams of \$5.3 billion and nearly 5,500 employees. Kent said his geography degree from ASU helped propel him there.

"Geography helped me stand out in the business environment," Kent said. "I remember working on a number of projects, and we needed to look at geographic data and I understood what it was telling me; the others could not."

Geographic potential

Drawing on his business knowledge, experience with communities and geography, Kent started Flagstaff Extreme because he said he saw the geographic potential of northern Arizona as not only beautiful but also easy to access with cooler temperatures and close enough to the Grand Canyon to make it viable.

“I wanted to create something that people could show up and do, and also not have any requirements for gear and be active,” Kent said.

Flagstaff Extreme’s five adult courses and one children’s course combine for a total of 86 elements, all suspended among the ponderosa pine trees. The obstacles vary from rope swings, zip lines, wooden bridges and a skateboard that carries you from one tree to another.

Flagstaff Extreme course-goers play in the trees across swinging bridges. Photo: Michelle Koechle



“The course was a bit more challenging than I expected, which just made it all the more fun,” said Collin Jung, 21, an ASU engineering student. “My favorite part of the course was the zip lines. I could have gone on those forever. I felt tired but accomplished when I finished.”

Participants go through safety training, wear a harness and hook into cables at all times to keep them safe. They have to use their balance and strength to scramble through the elements. Guides and staff keep an eye on participants at all times and can be hired to accompany them at an extra cost.

Flagstaff Extreme’s employee Clark, 21, feels Kent is a great mentor and manager for the entire staff: “Working for Paul is a lot of fun; everyone loves working for Paul.

He’s very chill but knows when it’s time to be serious. When things need to get done, he’s on top of it.”

Investing in community

Between leaving Insight in 2004 and Flagstaff Extreme, Kent began teaching social studies at Summit School of Ahwatukee, Ariz., while serving in various community roles such as a mentor for the Pat Tillman Foundation, with nonprofits and the City of Tempe on boards and commissions.

He continues to be active in Tempe today, acting as board president for Maggie’s Place, an organization that provides housing for pregnant women in need.

“Tempe is vibrant and fun, and with ASU in its midst the young vibe remains a constant and with the lake and all the activity it’s just a great place,” Kent said. “I like being a part of our city and I care about it.”

Kent’s family also has a stake in the city; he and his wife Julie are raising their three children there, and ASU students frequent Julie’s boutique, Here on the Corner, near College Avenue and University Drive. The boutique features local fashion designers and designers that give back to global development missions.

Kent said the beauty of majoring in liberal arts and sciences is that you can shape your own future: “I think people can do anything they want. You need to love it, you need to want to do it and you need to work hard doing it.” ■

Watch the Flagstaff Extreme video online:
vimeo.com/102082572



Flagstaff Extreme tests participants' balance along multiple course elements high in the ponderosa pines. Photo: Michelle Koechle

Julian Lim – ASU at the intersection of literature, human rights, law, race and history

By Margaret Coulombe

One fact that Julian Lim, assistant professor of U.S.-Mexico borderlands history in the School of Historical, Philosophical and Religious Studies, willingly offers about herself is that she had no interest in history by the time she went to college.

In fact, Lim, who comes to Arizona State University from a postdoctoral fellowship at Washington University in St. Louis, Mo., started her educational journey in literature and law. She completed a B.A. in English literature from the University of California-Berkeley, before going on to pursue her J.D. at Berkeley Law.

She traces her interests to her parents and their personal history. Korean immigrants to the United States, Lim's father was raised in Japan, her mother in Korea. When they first met in California, he spoke only Japanese; Lim's mother spoke only Korean. Not only did they have to learn how to communicate with each other, but they had to do so in a strange and new land. By the time Lim was 10 years old, she was the family's translator, bridging the linguistic divide between her parents and the English-speaking world. The tensions and challenges that her immigrant family faced as they negotiated life, relationships and linguistic barriers in a new country fueled Lim's early interests in language and cultural expression.

"I also loved reading," she added, "so majoring in literature seemed like the best fit for me." However, expectations of her immigrant family gradually pushed her toward the professions. "I was encouraged to become either a doctor or lawyer," said Lim. "Pre-med proved to be a disaster, so law seemed the logical direction for me." For Lim, law complemented her studies in literature as both fields seemed fundamentally concerned with language and the crafting of certain kinds of narratives.



Photo credit: Washington University, St. Louis.

It turned out to be a good fit. "I loved law school," said Lim. "It rewired my brain in interesting and important ways. I came to see so many things differently."

Most importantly, though, it made her realize for the first time how much history mattered, and that U.S. history, law and society had been shaped much more forcefully by matters of race and national identity than she had been led to believe in her high school history classes.

"For some reason, I remember high school history as a list of dates and presidential names," Lim recalled. "There was very little about African Americans, and I was never quite sure how people like me or my parents fit into an immigrant narrative that celebrated Ellis Island."

It was only in law school that she discovered that Angel Island, Chinese exclusion, Mexican immigration, civil rights law and Jim Crow were all essential to understanding the American experience. "History is alive in the law," said Lim, "even though lawyers don't tend to think about law in that way."

Excited as she was by her historical awakening, Lim realized that she had a lot more questions than her law school education could answer. So she made the daunting decision to shift course and apply to graduate programs in history. It was disruptive, she admits, but one of the best decisions she made. “It gave me the opportunity to explore and research questions that were not only important and interesting to me personally, but also helped me to better understand some of the things happening today,” Lim said.

In fact, focused on questions of immigration, race and the U.S.-Mexico borderlands, Lim’s present research interests resonate closely with current issues: “I’m hopeful that the kinds of things I’m writing about, asking questions about and studying will help inform a wider public about how we got to where we are today when it comes to the border, immigration and race relations. I want my work to speak to these bigger social and political questions that people are debating now.”

Because of her research interests, Lim was immediately attracted to ASU. She is excited about returning to the West not only for its natural landscapes and vibrant immigrant communities, but “Arizona in particular is ground zero for someone studying borderlands and immigration,” noted Lim. “Arizona State is also a strong public university committed to the community, whose interdisciplinary culture reflects the nature of my own scholarship in history and law.”

So how did an Asian-American scholar become interested in the U.S.-Mexico borderlands?

“Initially, I was trying to better understand Chinese immigration to Mexico and the U.S.-Mexico border. However, as I began my research what I uncovered was a much richer and a more multiracial history about immigration in the borderlands — one in which Chinese, Mexican and African-American men and women tried to define the space between the United States and Mexico

with their own understandings of freedom,” Lim said.

Lim expects to complete a book on these topics this fall. Her work, tentatively titled “Porous Borders, Forged Boundaries: Multiracial Migrations in the U.S.-Mexico Borderlands,” examines peoples’ movements to and across the borderlands in the 19th and 20th centuries and offers a detailed study of the multiracial interactions between the diverse peoples searching for economic opportunities and freedom from popular and institutionalized racism. Her book also draws on Lim’s legal scholarship, examining the incremental processes of immigration law-making from both Mexico and the U.S. that reshaped a relatively open border into a much more racially discriminating boundary — and in the process erased a vibrant

picture of multiracial migrations from the national histories of both countries.

“The project thus speaks to questions about both multiracial identities and immigration, questions that Americans are exploring these days as if they are only recent phenomena. I try to

show through my research that racial mixing in all of its dynamic forms has long been a part of American history, but the question is, then why does it not show up as much in American history? Part of the answer lies in immigration law and policy and its role in shaping ideas about race and national identities,” Lim said.

And what do her parents think of all this?

“Though I’ve dashed their dreams of having a lawyer in the family, they’ve been incredibly supportive of my decision to become a historian,” Lim said. “I’m not sure they’ll be able to read my book when it comes out, but I like to think that if it ever was translated into Korean, that it would make sense to them and resonate with some of their own life experiences as immigrants in a very diverse landscape.” ■

It was only in law school that she discovered that Angel Island, Chinese exclusion, Mexican immigration, civil rights law and Jim Crow were all essential to understanding the American experience.



Mati Aamed at the Child Study Laboratory
Photo: Vera Coleman

Looking within: psychology student discovers introspection in children

by Vera Coleman

Two plastic figurines, a horse and a pig stand between a three-year-old child and a doll named Jack. The child can easily see the farm animals directly in front of her, but Jack's view is obstructed by a barrier. When Mati Aamed, who recently earned her Bachelor of Science in Psychology from Arizona State University, asks the child what she sees, the child quickly responds that yes, she can see the horse and pig. However, does the child know whether Jack sees them as well? In other words, can she not only examine her own perception, but also imagine the perceptual experience of another individual?

Aamed and her fellow researchers are actually delving into complex questions about introspection, one of the key faculties that make us who we are.

Aamed, whose family moved to Arizona from Bangladesh when she was four years old, first became interested in psychology at a young age when her mother was an undergraduate psychology student at ASU. "I would read the articles she would bring home for homework or listen to the stories she would tell me about what she was studying in class or doing in the labs," Aamed recalls. "Something about psychology always sparked my interest."

Aamed decided to pursue a career in clinical psychology and became involved as an undergraduate research assistant at the

Child Study Laboratory shortly after enrolling at ASU.

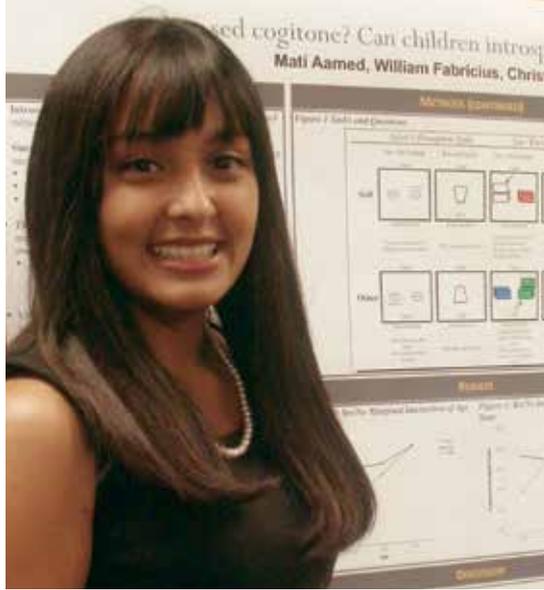
The Child Study Laboratory has been a fixture of the Department of Psychology for 42 years, offering complete preschool services for children ages 15 months to five years while functioning as a resource for families and early childhood professionals. As one of three early childhood centers in the College of Liberal Arts and Sciences, the laboratory also supports cutting-edge research on child development and offers a range of internship opportunities to psychology students.

"The Child Study Lab is unique in that it is not a daycare center. It's a research and educational facility where everyone benefits — the children, the parents, the undergraduate and graduate students and the professors conducting research in child development," said Anne Kupfer, the laboratory's director.

At the laboratory, Aamed interacts with children on many levels, from carrying out interviews for an ongoing introspection and Theory of Mind study led by Associate Professor William Fabricius to helping the students create animals with modeling clay.

"We help the students with all areas of development — sensory, cognitive and emotional," said Aamed. "The emotional aspect is my favorite part. When the little three-, four- and five-year-olds fight over toys, we teach them to use their words and ask, 'Can I have a turn?', and they will actually

Photo: Vera Coleman



start verbalizing this in future situations. We teach them skills that will stay with them their whole lives.”

As Kupfer notes, Aamed “applied the general formulations of the Theory of Mind research every day when she implemented problem solving and emotion understanding techniques with the children.”

Aamed’s interest in children’s emotional and cognitive development laid the foundation for her honors thesis, which she completed as part of the Psychology Honors Thesis Sequence, a joint program of the Department of Psychology and Barrett, The Honors College. Aamed explored whether evidence for introspection, defined as having direct insight into one’s own internal and subjective thoughts and emotions, can be found in young children and, if so, at what age does it first appear and how does it change over time. In contrast to previous studies that concluded that children lack introspective awareness, Aamed discovered that they do indeed have access to their own mental processes beginning as early as age three. “This study on introspection in children looks at what makes you human, what it is that pushes you forward and where that all begins; Your sense of self is where it starts,” Aamed said.

“We are studying how young children come to understand that people have internal, mental experiences like perceptions, memories and beliefs, and Aamed found that they discover some of these things in themselves first,” said Professor Fabricius, who was also the director of Aamed’s thesis committee. “The role of introspection in learning about the mind has

been downplayed for many years, but Aamed’s findings will force us to reconsider it.”

While focusing on a young population has allowed Aamed to delve into the beginnings of human emotional self-awareness, she is also interested in tracing introspection as it develops through adolescence into adulthood and examining the role of introspective awareness in family therapy settings. “In adolescence, introspection is tested because that is when young people are struggling to develop their own identity. In therapy, introspection is very important because you have to be able to step outside yourself, look inward at yourself and change your situation to solve your problem,” she points out.

In spite of the fluctuations and challenges introspection undergoes during different life phases, it remains a constant presence throughout one’s lifetime. “Introspection is always there whatever age you are,” Aamed said. “It is your ability to reflect and to understand your own mental states, such as perception and knowledge and even abstract concepts like emotions, and it also leads to empathy. It always stays with you and connects you to yourself throughout your entire life.”

In addition to expanding her current research as a new doctoral student in clinical psychology at Argosy University-Phoenix, Aamed plans to examine existing family therapy models and develop more holistic approaches to helping families succeed both as individuals and as a family unit.

Looking back, Aamed considers her honors thesis the most challenging and rewarding experience of her four years at ASU and enthusiastically recommends that other undergraduate students pursue research opportunities.

“You learn about research a certain way by reading about it in an article, but you will have a personal investment in it and think about the world differently by being part of a research team,” Aamed said. “I wouldn’t trade that experience for anything.” ■

New degree launches ASU students toward No. 1 career in the nation

By Rhonda Olson

Students interested in pursuing the No. 1 career in the nation can get some help from the College of Liberal Arts and Sciences with the School of Mathematical and Statistical Sciences' bachelor's degree in actuarial science.

Actuaries put a financial value on risk — for instance, the chances of a hurricane destroying a home or the long-term liabilities of a pension system.

“An actuarial career is one of the most lucrative and desirable professions for today’s college graduate,” said Al Boggess, director of the school. “In the Phoenix area, there are at least 20 companies which employ actuaries. However, until now, there were no undergraduate degree programs in actuarial science in Arizona and only a few such programs in the Intermountain West. Thus, this actuary degree program is one of high need here at ASU.”

According to the Bureau of Labor Statistics, employment of actuaries is expected to grow by 27 percent from 2010 to 2020. Research by global management consulting firm McKinsey shows demand for deep analytical talent, such

as actuaries and statisticians, could be 50 to 60 percent greater than its projected supply by 2018.

Actuaries need a bachelor's degree that contains a strong background in mathematics, statistics and business. Students must pass a series of exams to become certified actuaries. The first several exams can be attempted during students' undergraduate studies at ASU. The remaining exams can be completed while on the job.

“One thing that is very attractive is if a student is interested in working in the business world but they also want to be able to exercise their mathematical abilities; they say, ‘I want to work in business, but I’m also really good at math — how can I utilize my math skills in a way that’s going to give me a satisfying profession and help me make a really good income?’,” Boggess said. “And my answer to that is, ‘Be an actuary.’”

The new bachelor's program in actuarial science is housed on the Tempe campus. In addition, the school has launched an undergraduate certificate in actuarial science. ■

Mastercard Scholar Rumbidzai Mugaro from Zimbabwe.
Photo: Sarah Muench

Undergraduate research:

Alum Matt Brown converts energy into success

by Margaret Coulombe

Why can't a mathematician tell the difference between a cup and a donut? If you don't know the answer you probably are not in hot pursuit of new frontiers in mathematical physics, as is ASU alum Matthew Brown.

Brown sees the world differently, as a computational paradise with a multi-dimensional realm of possibilities, strengths that put him on the forefront of theoretical approaches of the kind that Sheldon in "Big Bang Theory" or Einstein would employ.

Brown is a recent graduate from the College of Liberal Arts and Sciences. A Dean's Medalist from the Department of Physics, Goldwater Scholar and 2014 Hertz Foundation Fellow, Brown leaves ASU to join an elite cohort entering graduate school and a rarified natural sciences and engineering Hertz community.

A strong vision of his future was in part what spurred Brown's achievements. Supported by the Educational Opportunity Program (EOP) and inspired by Star Wars and dreams of droids, hyperdrives and lightsabers, Brown realized in elementary school that "in order to have valid ideas for creating these devices, I had to study physics and develop an understanding of electromagnetic fields, space, time and gravity."

"Matthew is brilliant in problem solving, particularly using the most complex mathematical approaches," said Robert Nemanich, a professor in the Department of Physics and Brown's undergraduate research mentor. "He is creative in his approach, confident, dedicated and articulate. His research contributions have been substantial and he is one of the most outstanding undergraduate students I have had the privilege of working with during my 25-year academic career."

In the Nemanich laboratory, Brown created a computer simulation of a thermionic energy conversion device based on diamond films. Sometimes called a heat engine or generator, this simple device operates without mechanical parts. Considered for space applications or to boost output from thermal steam turbine systems, it directly converts heat into electrical energy.

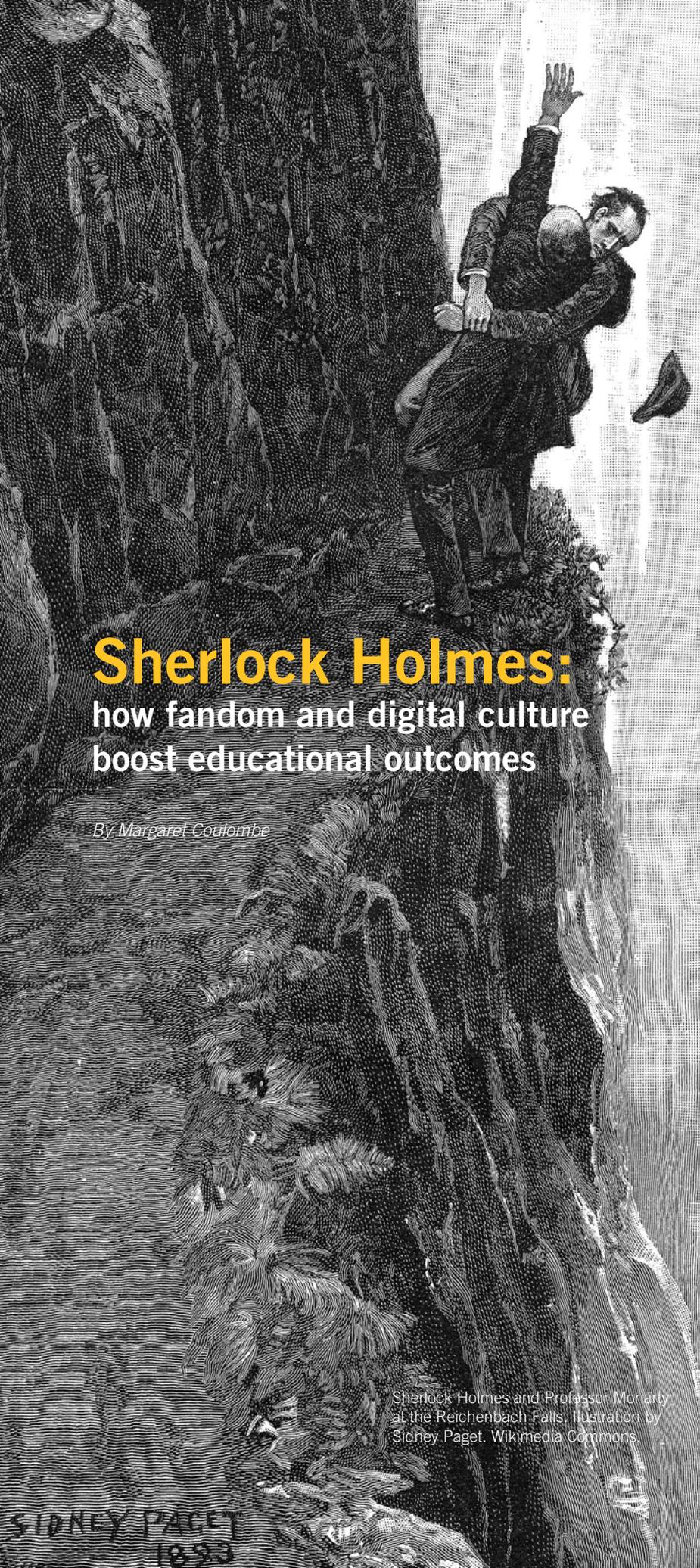
Brown has pursued string and field theory, quantum gravity, mathematical and particle physics, which are areas he will focus more closely on in his doctoral program with the University of California, Santa Barbara. The financial support offered by the Hertz Fellowship gives him the flexibility to choose any laboratory he wants and to focus entirely on research. Two potential mentors in Santa Barbara are in fact also past Hertz Fellows, Joe Polchinski and David Morrison.

Brown credits his early start in undergraduate research as a key factor in his transition to graduate school: "I started my undergraduate research during my freshman year. Professor Nemanich taught Physics II — electric and magnetic fields," said Brown. "Toward the end of the semester, I asked if we could discuss research opportunities. Working in his lab really made it clear to me what I wanted to do. It also gave me insight into how science works day-to-day."

"Undergraduate research is more important than most students realize," added Brown "Lots of things don't work out, but solving problems that are really interesting — that is my favorite part. When you do figure them out, that feeling is really worth it." ■



Photo: Iris Krondorff



Sherlock Holmes: how fandom and digital culture boost educational outcomes

By Margaret Coulombe

Sherlock Holmes and Professor Moriarty
at the Reichenbach Falls. Illustration by
Sidney Paget. Wikimedia Commons.

Sherlock Holmes and Dr. Watson, author Conan Doyle's crime-solving duo, represent a cultural phenomenon. More than 700 novels and 70 actors have made Holmes one of the most-portrayed characters in films, video, TV and on stage. Since Doyle first penned his mysteries in 1887, Holmes' pop-cultural footprint has been so big, for so long, that the courts established "Sherlock Holmes" as part of the public domain, joining the ranks of "Star Wars" and "Shakespeare," in 2014.

What fuels this long-standing popularity? According to Dawn Opel, a graduate student in Arizona State University's Department of English, the appeal is in part due to there being "no real start or end to this world. It can be built on, reinvented in a new context, spur fan fiction and — in between solving mysteries — allows writers and viewers to get inside the character's idiosyncrasies and gaps in the canon."

"People feel like they have a stake in the outcomes," Opel said, who studies digital media and learning. "Even back in Doyle's time, when he killed off Sherlock there was an uproar. People wore black armbands, obituaries were run and 20,000 people cancelled subscriptions to 'The Strand.' This passion was mirrored in the online movement #sherlocklives, which attempted to solve the mystery of Holmes' death in season two of the BBC/PBS production."

Opel's research examines how contemporary leisure readers participate in reading practices together, both in live book clubs and online, and in reading and remixing communities. A headliner at the 2014 Phoenix Comicon Education kickoff featuring "The pastiche of Sherlock Holmes and best practices in the classroom," Opel presented to 50 K-12 teachers interested in promoting tools in informal learning to counter the lack of affective connection to reading in classrooms. Opel offered teachers insight into how they can use pop culture icons, such as Sherlock, and found in other fandoms and other digital tools to transform engagement and learning.

“Digital media boosts active involvement,” Opel said. “That excitement around writing, remixing text, gaming and story invention can be harnessed by educators to give students a stake in their own education.

“With the Sherlock fandom in particular, fans of all ages are creating fan art, fanvids, writing fan fiction, writing screenplays, designing and playing video games and so much more. This is ‘informal learning’ at its finest, and students expect and deserve that kind of involvement in their own formal education as well,” Opel said.

A member of four online and live book clubs and an avid participant in “Minecraft” with her 8-year-old son, Opel believes that up until now educators have missed opportunities to build on students’ digital media skills and interests and to show them how these skills can translate into future career paths.

“We are trying to move to a place where students have an active role in their own learning. We know students care deeply and are gaining informal learning in digital spaces. We call this ‘connected learning’: participatory, interest-driven engagement of students in the classroom setting,” Opel said.

In her own writing and new media classrooms, Opel gives her undergraduates tasks that use Reddit, Tumblr or YouTube. One assignment was to “translate” a researched, scholarly argument on a public issue to a social media platform. Students were then evaluated on their use of rhetorical strategies to engage the audience. A student’s success was measured by engagement. For example, on Reddit that meant that if Reddit users actively voted for it, then it trended upward on the site. The more activity the Reddit post received, through votes and comments, the higher the student’s grade.

One Tumblr post even launched a career. Opel’s student posted a scholarly argument that the LGBTQIA community is represented on television in classed and raced ways. Her post amassed tens of thousands of notes and shares.

“My student went on to position her Tumblr as a professional tool rather than a personal site. Her fans reposted her work on blogs and social media outlets. She saw the beginnings of a freelance writing career take shape,” Opel said. “She is most excited that her name leverages notoriety in the Tumblr community, meaning her work trends as soon as it hits Tumblr.”

Opel considers ASU’s commitment to creative, transdisciplinary work as one of the university’s core strengths. “I can construct whatever I want to pursue. My work is not traditional, but I’ve received great mentoring and collaborated across ASU, from English to the School of Social Transformation and Center for Games and Impact,” Opel said.

“I strongly believe that to solve the complex problems of the 21st century, we will need to bring together people across fields of study, from science and technology to the humanities and education. ASU is committed to building the next generation of transdisciplinary scholars and I’m pleased to be part of that.” ■



Dawn Opel presenting at the 2014 Phoenix Comicon Education kickoff.
Photo: Bruce Matsunaga



An unconventional path: Colonel James Geracci's climb to the top of his profession began with an unexpected step

By Erik Ketcherside

ASU alumnus James Geracci may have one of the largest medical practices in the world. As senior surgeon for the U.S. Army's storied 3rd Armored Corps, he is charged with medical oversight of four divisions on four installations in Texas, Colorado and Kansas. Geracci, a lieutenant colonel, administers care to more than 100,000 personnel.

His career choice was no surprise. His late father, also named James and a colonel, retired as chief of dental surgery at Nellis Air Force Base in Las Vegas, Nev. and his brother followed suit, as a dentist and Air Force colonel. However, Geracci's path to his current high rank and demanding assignment was neither easy nor straight.

In 1996, at the Uniformed Services University School of Medicine in Bethesda, Md., Geracci received his M.D., captain's bars and a one-year surgical residency assignment at Brooke Army Medical Center in San Antonio, Texas. His next post was Fort Hood, Texas, as squadron flight surgeon for a ground armored and attack helicopter unit. The contrast, Geracci says, was jarring.



Mentoring Afghanistan medical partners, August 2011. Photo courtesy of Colonel Geracci.

“When I was an intern at Brooke,” he recalls, “everybody who came in to see me had an acute illness: cancer, trauma from being stabbed or shot in a drug deal gone bad, appendicitis. Now I was seeing basically healthy people, trying to keep them healthy and learning how to support them when they deploy. I was out of my element, because most of them had routine, primary care issues, and I hadn’t done any routine primary care.”

Geracci remembers one of his first Fort Hood patients. “A soldier who came in and said, ‘Doc, my toes are really itchy. They’re cracking and peeling and it’s really uncomfortable.’ I’m looking at the guy thinking, athlete’s foot? Is that what you came to see me for?” Geracci said.

One year later, foot fungus was an insignificant worry for Geracci and his young patients. The squadron deployed to Bosnia to support Operation Joint Forge; an eye-opening experience for “a guy who was only focused on becoming a surgeon,” Geracci said. “I was taking care of them in a completely different setting with unfamiliar infectious diseases and other issues. I had to apply the whole breadth of what I knew, both as a physician and other skills. I had 32 medics working for me. We put together our own aid stations and

the clinic, working out of tents or vehicles. I had to order the supplies and equipment and manage the budget on top of all the medicine and the behavioral health-type stuff of understanding soldiers.”

The unit didn’t see heavy combat in Bosnia, but that wasn’t the case for some of Geracci’s subsequent deployments. He was flight surgeon for the 11th Attack Helicopter Regiment in Operation Iraqi Freedom in 2003, and command surgeon at Bagram Airfield in Afghanistan beginning in 2011.

Geracci said his job in Iraq and Afghanistan was, “point of injury combat casualty care: flying medevac missions, supporting troops on the ground in combat, taking care of casualties. In Afghanistan we were constantly flying up into the mountains, dragging injured soldiers into the helicopter and flying them back to a higher level of care.”

Geracci has stories: the soldier who rolled over an improvised explosive device that rocketed his vehicle into his pelvis and cost him both legs and an arm. The young man standing outside a helicopter, six feet from Geracci, when he was shot through the leg.

“What I did wasn’t heroic,” he said of saving the soldier outside the helicopter. “I just happened to be there and I saw it and clamped it quickly.”

“It severed his femoral artery,” Geracci recounts. “By the time I got to him he was sitting in a puddle of blood the size of a baby swimming pool.” Geracci grabbed the end of the artery with a clamp

just as it was retracting into the soldier’s abdomen. If he hadn’t, “there would have been nothing we could have done for him,” Geracci said. “He would have died.”

Geracci is eager to share these stories with students, interns and others — but not for ego. “What I did wasn’t heroic,” he said of saving the soldier outside the helicopter. “I just happened to be there and I saw it and clamped it quickly.”

He shares them to give credit where he believes it’s due. Before the Army, and before medical school, Geracci was a psychology major in Arizona State University’s College

of Liberal Arts and Sciences. He is emphatic that his four years as a liberal arts student deserve as much credit for his success — even for lives he’s saved — as the training and experience that followed.

His was an unconventional path for a pre-med student, but a calculated one. “I wanted to be a physician,” Geracci said, “so I knew I would be focusing the rest of my career on a particular area of study. But I felt strongly that first, you build your foundation on a broad-based education. The only way to put all that together in today’s system is with a degree at a school that offers a liberal arts education.”

It was an education at which Geracci excelled, and one he enjoyed — perhaps too much. “I got called in by one of the counselors after my second year who said, ‘Hey, Jim, good for you! You have a 4.0 GPA and you’re doing great in all your pre-med classes. But now you really need to declare a major.’”

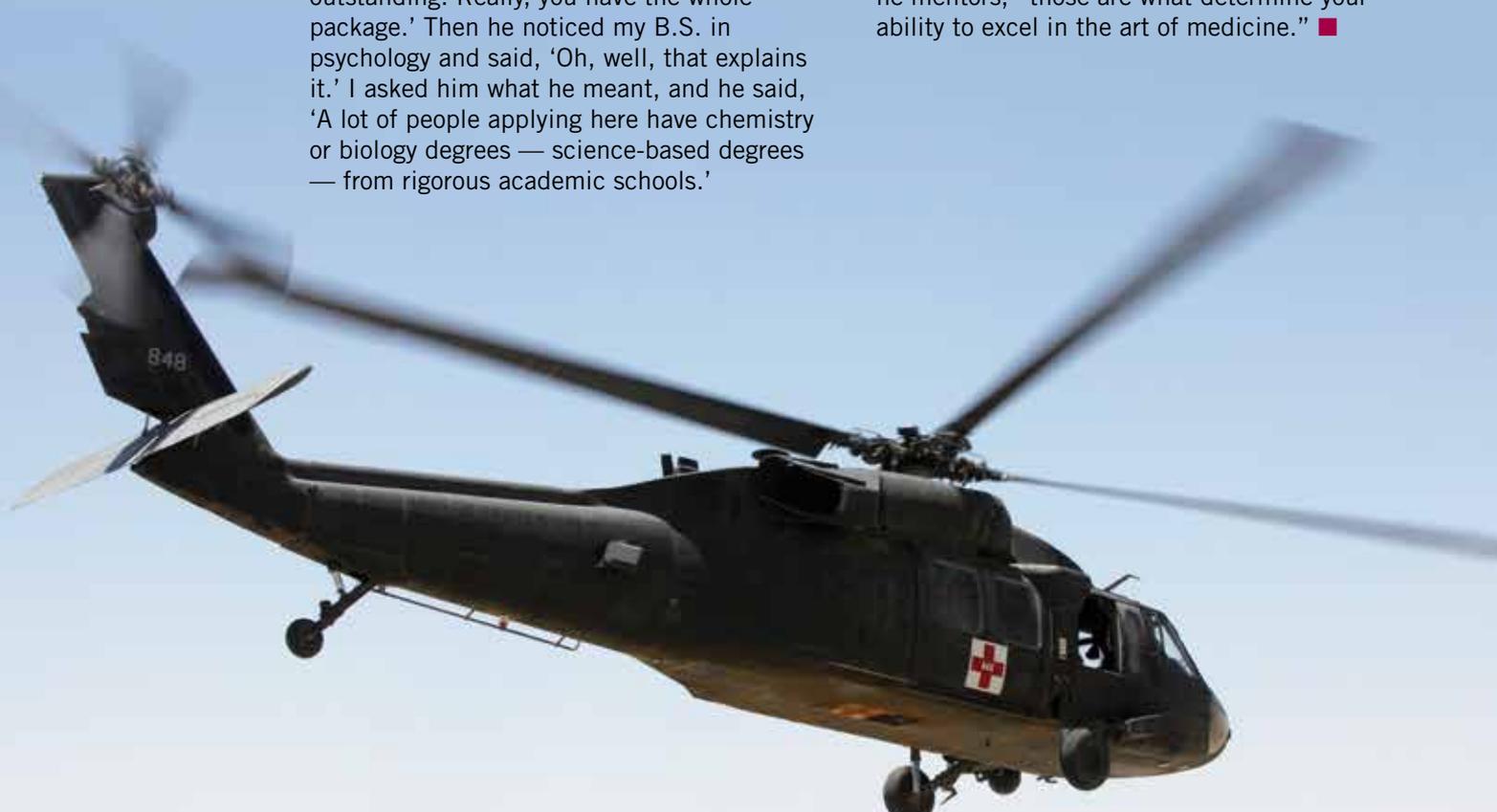
Geracci laughs at that encounter and the response his degree received as he applied to medical schools. “I went to some pretty renowned medical schools to interview. I remember one interviewer said, ‘You have a fantastic GPA, your MCAT scores are outstanding. Really, you have the whole package.’ Then he noticed my B.S. in psychology and said, ‘Oh, well, that explains it.’ I asked him what he meant, and he said, ‘A lot of people applying here have chemistry or biology degrees — science-based degrees — from rigorous academic schools.’

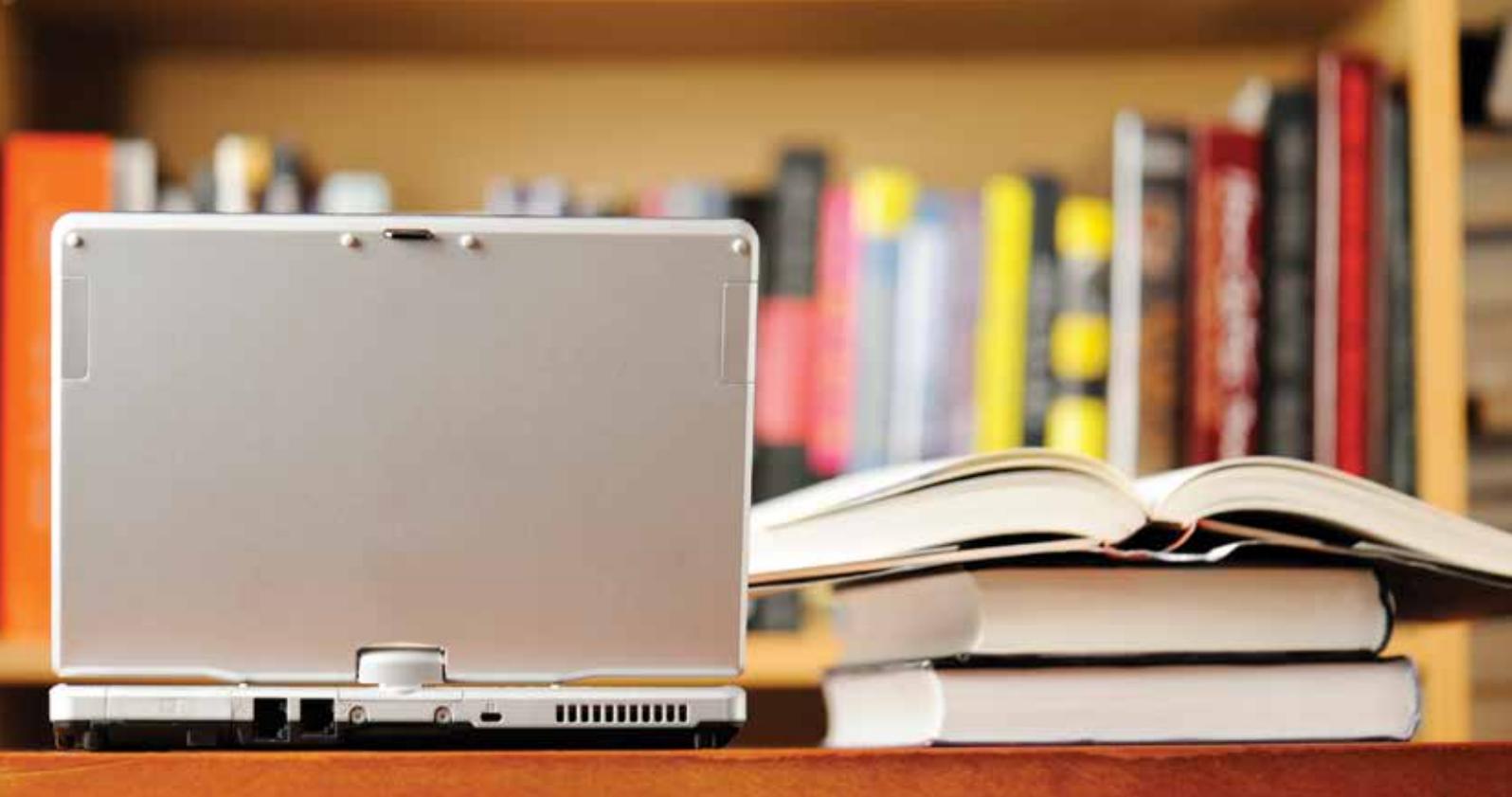
“I laughed and said, ‘I had to be successful across a spectrum of disciplines, at a place well-balanced with social activities, multiple distractions, academic and otherwise. And,’” Geracci reminded him, “I completed my degree, fulfilled the requirements and made excellent grades.’ The administrator chuckled and told me, ‘That’s the best answer I’ve ever gotten in an interview.’”

That was the first of many opportunities for Geracci to credit his liberal arts background; a foundation he believes made him successful because medicine — military medicine in particular — isn’t just about doctoring.

“There’s an art and a science of medicine,” Geracci asserts. “The science of medicine, maybe my liberal arts education didn’t help me much with, but in the art of medicine my experience truly paid dividends. The intangible parts of being a physician, our system doesn’t do a good job of measuring. We’re very good at measuring the tangible: grade point average, MCAT scores and so on. However, we have a tough time quantifying and measuring the intangibles.

“And those intangibles,” Geracci says, to soldiers, students and the young physicians he mentors, “those are what determine your ability to excel in the art of medicine.” ■





My Young Adult Novel Year: Craft, from Scratch

By Karen Odden

Eight months ago, my agent called me with the exciting news that not one, but two publishing houses were interested in my book; a Victorian young-adult mystery novel.

And a week later, neither of them was.

As just about anyone who has tried it knows, the process of writing a novel, finding an agent and getting published is a grueling business. In the course of publishing short pieces over the years, I have built up a healthy tough skin, but there was something about getting so close with this — what would be my first novel — that made this rejection almost physically painful. My agent felt like he'd exhausted all possibilities, and we really had nowhere else to go.

Ouch.

I spent a solid three weeks licking my wounds and, less healthfully, licking the chocolate off my fingers. Eventually chocolate-covered raisins no longer looked appealing, and I realized that I needed to rethink what I was doing with my writing. I needed to reboot. Start from scratch. Figure this out. And I needed help.

I'd received plenty of feedback from editors, who shared what they thought I'd done well and some areas where they saw problems. I even had an idea for a new book that my agent said sounded promising, but I was wary of starting over without some guidance. What if I ended up right back in the "almost" pile?

People say that the universe provides. Open yourself to it and the solution will come (someday I will put my yoga teacher in a novel).

I attended the annual ASU writer's conference "Desert Nights, Rising Stars" several times, so I am on the mailing list for the Piper Center. In December, I received an email notice about a new online class being offered through the ASU Piper Writing House, with two tracks: science fiction and young adult (YA).

I have to admit, I was leery at first of an online writing class. The writing workshops I've taken have all depended upon exchanging pages — on paper, not online — and sitting around tables talking about the writing, asking questions and yammering about the details. Furthermore, I'm not a tech girl; I ask my teenage daughter to fix things on my iPhone. I looked at the roster of instructors who would be guiding us through the first few sessions. First, Bill Konigsberg's "Out of the Pocket," about a star high-school football player who unwillingly comes out of the closet, is one of my favorite debut YA novels. Next, James Blasingame, who knows more and has written more than most people have forgotten about YA literature, and Tom Leveen who wrote, among other novels, "Party" and "Zero," both of them I found boldly original and heartfelt. The head of this new program was Director Jewell Parker Rhodes, whom I'd met at the conference and who is an extraordinarily intuitive and benevolent writer and leader.

In January I started the first eight-week session of the novel-course with YA Instructor Konigsberg. We were asked to come to the course having read 10 recently published and award-winning YA books including "Aristotle and Dante Discover the Secrets of the Universe," "Monster" and "The Hunger Games." Using videos, podcasts and essays, Bill began reviewing the different elements of a narrative: setting, point-of-view, character development, dialog and so on. Then, we completed writing exercises to help us move from a theoretical to a practical understanding. For example, during the week we focused on point-of-view, Bill had us write a scene from four different perspectives: first-person, second-person, third-person limited and third-person omniscient. This sort of exercise efficiently teaches you about the strengths and limitations of each.

Then, it came time to share our first 25 pages — as Google docs — with the group. There are seven of us, men and women, ranging in ages from early 20s to middle age, writing very different kinds of novels. These include a steampunk novel set on an island near Australia, a contemporary novel about a girl whose best friend commits suicide and a historical novel set in Greece with paranormal elements. Each week, we provided a line-edit and an end comment for two stories. Reading other people's work was not only interesting, but it helped me identify narrative strategies that I could adapt for my own novel. The online discussions through the Facebook page were often provocative and wonderfully funny at times. The sense of community built rapidly. As Bill said, "I have been surprised at how up close and personal it has been, considering it's an online program. I feel as though I've gotten to know the writers quite well."

Throughout the exchange process, Bill and my colleagues were supportive and kind, but they did not shy away from asking hard questions. I had my pages reviewed four times in the first two sessions. I slowly began to see that I was, as one reader explained, writing around the dark, painful parts of my story. Changing this tendency is like turning an ocean liner from north to east, but I can see the difference.

In the third session, Professor Blasingame asked us to read 10 more YA books, watch young poets perform spoken-word poetry on YouTube, read interviews of YA authors and review the history of the YA novel. This part of the course allowed us to situate the YA literature that we read and write within both a historical context and the subgenres of YA-historical, sci-fi, contemporary, mystery and so on.

Going forward, we will return to our manuscripts and exchange our work again. Yes, I'm wondering what's happening to the girl from inner-city Detroit, the girl who's looking for her father at the summer music festivals and the boy in jail. I'm wondering where my protagonist Claire will end up when she finds out her father deals drugs. And I'm looking forward to discovering how this course will stretch me next. ■

dream it,

do it

Liberal arts and sciences well-traveled path to law

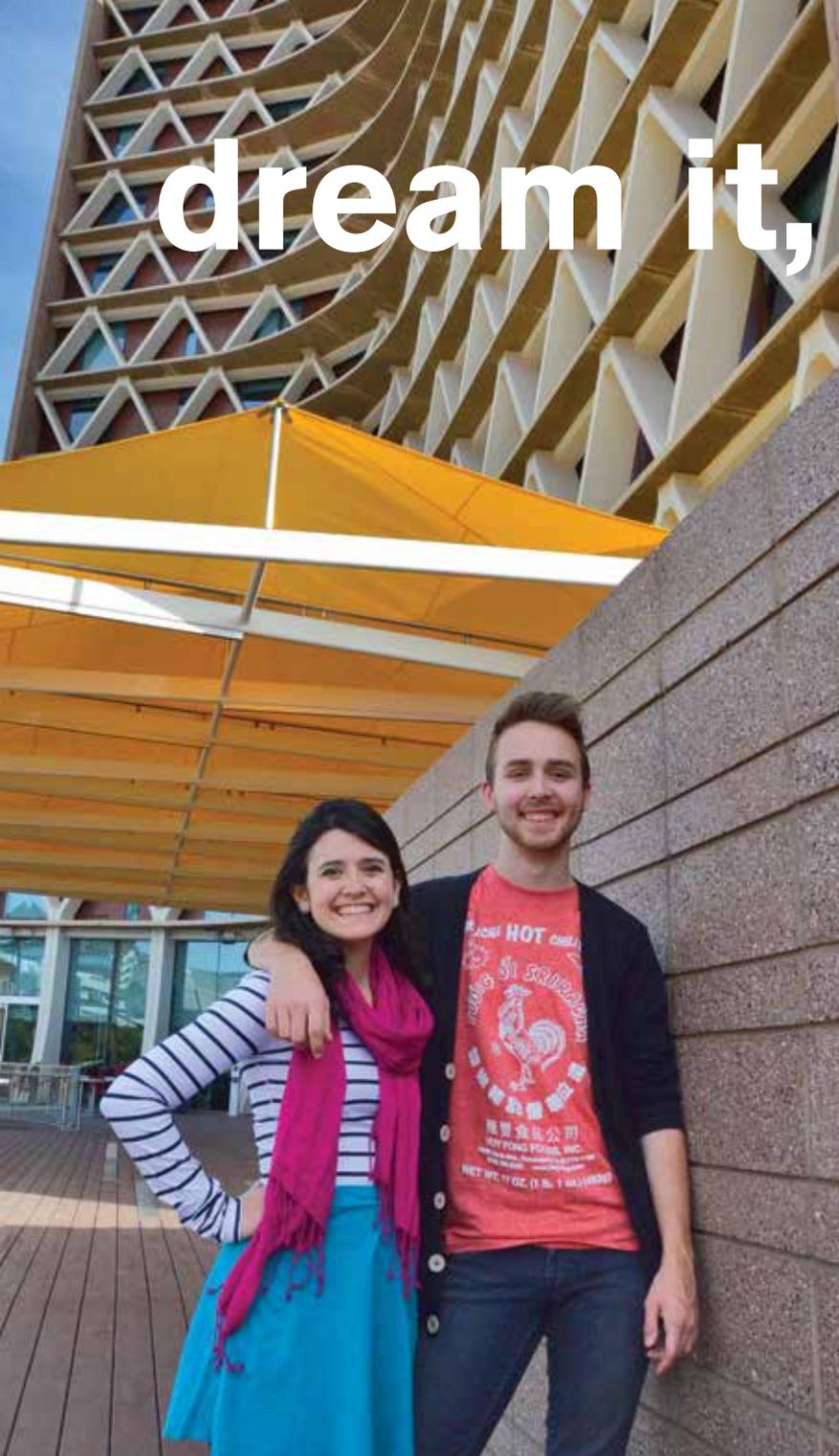
By Margaret Coulombe

Lauren Zack came to Arizona State University set on a career in psychology. She was attracted by Barrett, The Honors College, strong programs in the College of Liberal Arts and Sciences and the prospect of joining her family's die-hard Sun Devil tradition. However, she found much more than expected — a pathway that opened her mind and a route to pursue legal advocacy, social justice and civil rights law.

"I had no intention to pursue law school," said Zack, who graduated in May and joined Stanford Law School class of 2017 in the fall. "But I was exposed to so many different ideas and perspectives coming here. I got involved in women and gender studies, completed a LGBT certificate, did undergraduate research, co-founded the Gender Inclusive Housing Action Committee and joined the ASU Residence Hall Association. I became focused on social issues, policy, advocacy and, ultimately, the idea of impact litigation in a courtroom setting."

Zack was one of more than 500 students at ASU who apply to law school each year, more than 60 percent of which come out of programs in the liberal arts and sciences. Half matriculate from political sciences, but students pursuing justice studies, philosophy, history, English, economics, psychology and more than 40 other majors continue into law school from the college, said Mary Nadarski, academic success coordinator with the Pre-Professional Advising Office in the College of Liberal Arts and Sciences.

Zack came to Nadarski in her junior year, after she wandered into a free LSAT test exam. Zack had been thinking about graduate



Co-chair Lauren Zack, senior psychology and English double majors, co-founded the Gender Inclusive Housing Action Committee at ASU with Christian Sandoval (not pictured). Zack poses with political science freshman Brandon Marks, a supportive member of the GIHAC, in front of Manzanita Hall on ASU's Tempe campus. Photo: Rachel Neme



Residential Hall Association Executive Council members (2012-2013). Lauren Zack, right, bottom row. Photo: Andrew Raj

school, but she took the test and it made her reconsider, “maybe this is something that I can do,” she said.

“Law school seemed scary, like something that was out of my reach. I met with Mary; she asked about my interests, my research and thesis projects,” said Zack, whose honors thesis examined reproductive health and contraceptive access in post-communist Romania. “I got an encouraging voice. She showed me that my experience and interests in liberal arts could directly translate into law.”

In addition to assisting with LSAT prep resources, the pre-advising office supports the 4,300 ASU students who identify as pre-law across the university with applications, resumes, personal statements, school selections, course selections and establishing credit for internships.

“Many of our ASU graduates go on to enroll in the three law schools here in Arizona, but we also have graduates going on to study at many prestigious law schools across the nation including Berkeley, New York University,

Stanford, Harvard and Georgetown,” said Nadarski, who noted that acceptance rate for ASU students now hovers around 75 percent.

Zack said that in addition to her support from the pre-law advising group, ASU Career Services also offered her resources, along with a program through Barrett called Project Excellence. The Barrett program places students in elective courses in the Sandra Day O’Connor College of Law. Zack took a course in genetics and the law alongside law students in their second or third years. The project also offered access to online resources, law professors and gave her a taste of what was within her reach.

“I can’t image a better background to have for law than liberal arts and sciences.”

—Lauren Zack

“I can’t image a better background to have for law than liberal arts and sciences,” said Zack. “Conceptually, you gain a diverse perspective. Critical thinking, reading, writing and research-based approaches will help you. The law is based on the belief that there is more than one answer to everything and many different ways to address challenges. The interdisciplinary nature of liberal arts and law match up perfectly.” ■



FROM THE HILL ★ TO THE DESERT

internship lessons beyond
the classroom

By Erica May

In lecture halls on the Tempe campus, political inquiry, cultural diversity, statistics and humanities are explored, but it's often outside the School of Politics and Global Studies' classrooms where connections are made and real-life experiences happen.

"Internships are a valued part of education," said Associate Director Richard Herrera, who is also the coordinator of Capital Scholars and the McCain Policy Design Studio and Internship Program. "They are a great supplement to the theory, practice and history learned in classrooms."

The Capital Scholars Program has taken hundreds of ASU students from all majors to Washington, D.C., for a firsthand experience in the public policy-making process on Capitol Hill. Participants intern with Congress, federal agencies, advocacy groups, the media,

think tanks and policy research groups. On their off-time, D.C. expands on students' experiences, offering organized tours of Annapolis, the CIA, cultural events and career panels.

Recent broadcast journalism graduate Vondalynn Dias was drawn to Capital Scholars because of her "passion for public policy and debate, governmental

affairs and the inner workings of how media and legislation coincide.

"It isn't often you are able to experience the inner-workings of Congress," Dias said. "The decisions made on Capitol Hill are an important part of our future. I witnessed bills become laws that will one day affect or benefit the future generations."

The goal of Capital Scholars is to instill leadership skills and provide tools to enable participants to be successful in whatever career they choose. Dias is thankful for all that she learned as she prepares to move to Ohio to begin her job as an investigative reporter for broadcast station WNW0.

"I experienced how the government operates firsthand, working in close contact with legislators and assistant directors," Dias said.

"The vast skill set I developed during my time in Capital Scholars will serve me well in my career as an investigative reporter."

Students can also gain valuable experiences on a local level through the Arizona Legislative and Government Internship Program, authorized by an agreement with ASU President Michael Crow, the President of the Arizona Senate and the Arizona Speaker of the House. This competitive program is open to all eligible students in Arizona's state universities. Selected students' interests are matched with positions in state agencies, the Arizona State Legislature, the Governor's Office and the Arizona Supreme Court. This year, ASU had 32 state-level governmental interns.

Alum Julianne Hill, who graduated in 2012 with a B.A. in sociology and a dual B.A. and M.A. degree in political science, starts her third year as a law student at Harvard University this fall. She says that her internship was influential in her journey to law school.

"I have no doubt that it helped me get to where I am," Hill said. "I came away with a thorough understanding of how the Arizona State Legislature works, a professional experience and connection to supervisors who wrote letters of recommendation."

Student interns experience full-time, hands-on work that allows them to take on more responsibility. Hill's internship experience directly relates to her current academic work and career goals.

"I understand how to read proposed and passed legislation," Hill said. "Many times laws are written very technically and it takes practice to understand their practical effect. This skill is immensely helpful in law school and put me a step ahead of my peers unfamiliar with the ways that laws are crafted and the process through which they are passed."

The McCain Institute also offers experiences in the nation's capital through the McCain Policy Design Studio and Internship Program. These internships vary from postings with Congress and law firms to media outlets, advocacy groups and museums. The positions

"The decisions made on Capitol Hill are an important part of our future. I witnessed bills become laws that will one day affect or benefit the future generations."

— Vondalynn Dias



Fall 2013 Policy Design Studio group, along with Ambassador Polt who is the senior director of the McCain Institute and the instructor of the Policy Design Studio course, giving their final course presentations at the Decision Theater at the McCain Institute. Photo: Rebecca Lish

also include access to seminars at the McCain Institute for International Leadership and experience researching solutions to real-world foreign policy issues.

“It was a great hands-on experience in crafting foreign policy,” said Sam Foote, a senior political science and communications major who interned with the National Peace Corps Association. “Our project on U.S.-Mexico relations opened my eyes to opportunities in the Foreign Service and U.S. Department of State after I graduate.”

The school also offers students in global studies opportunities to put classroom knowledge into practice in internships abroad. Students taking SGS 484 have worked all over the world, from internships, teaching English in South Korea to assisting in a law firm in Athens, Greece.

Andrew Walker, who graduated this spring with a B.A. in global studies and business,

used his internship as a test-run for his career aspirations in the U.S. Foreign Service. In fall 2012, he served as an economic assistant to Deputy Economic Counselor Cheryl Fernandes with the American Embassy in Ankara, Turkey. Walker’s duties included drafting diplomatic notes for the Turkish Ministry of Foreign Affairs, attending conferences and writing summaries for cables and coordinating the section’s first webinar.

“My experience at the embassy showed me that the Foreign Service is the right career for me,” Walker said. “It provided an opportunity for me to utilize and build on my communication and leadership skills. Overall, this internship inspired me to continue my education and, this fall, I’ll pursue a master’s degree in international affairs, with a concentration in international development and economic policy, at the Bush School of Government and Public Service at Texas A&M University.” ■

DNA nanotechnology at ASU opens future to new biomedical diagnostics

By Joseph Caspermeyer

Researchers in the field of DNA nanotechnology take advantage of the binding properties of the chemical building blocks of DNA to twist and self-assemble DNA into ever-more imaginative two- and three-dimensional structures.

Using DNA-molecules like an architectural scaffold, Arizona State University Professor Hao Yan, in collaboration with colleagues at ASU and the University of Michigan, developed a 3-D artificial enzyme cascade that mimics an important biochemical pathway that could prove critical to future biomedical and energy applications.

These enzymes speed up chemical reactions, used in our bodies for the digestion of food into sugars and energy during human metabolism, for example.

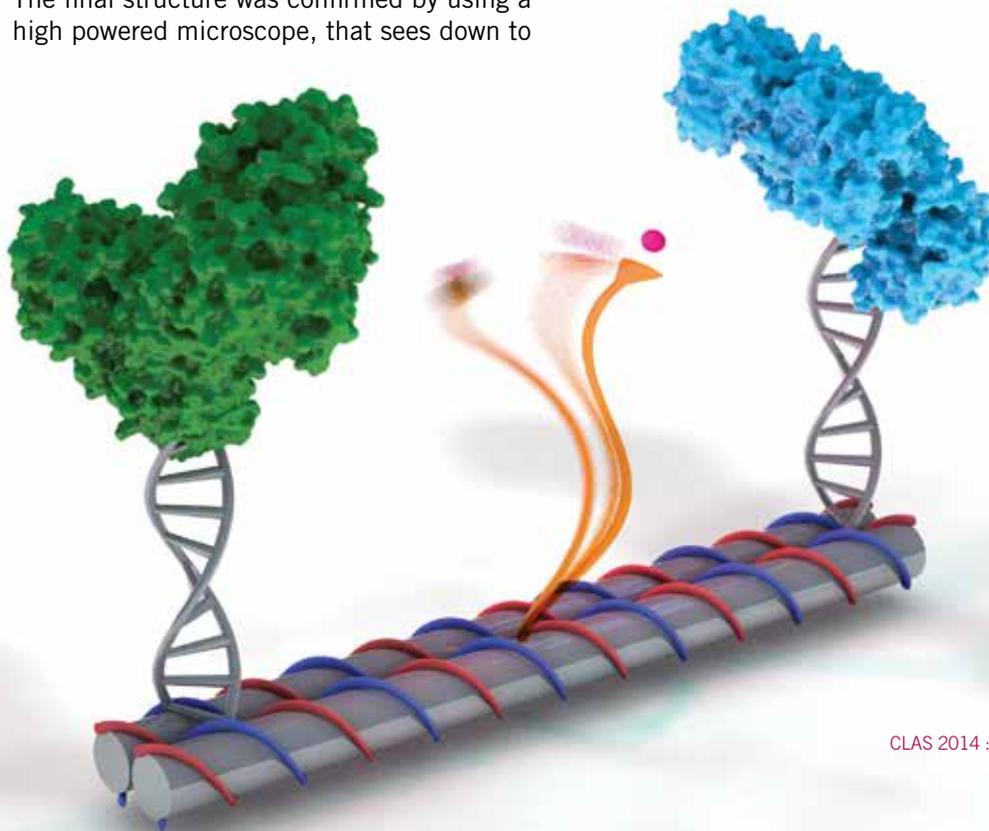
Using a computer program, the scientists were able to customize the chemical building blocks of the DNA sequence so that the scaffold would self-assemble in a test tube. Once the system was made, then the enzyme parts were added.

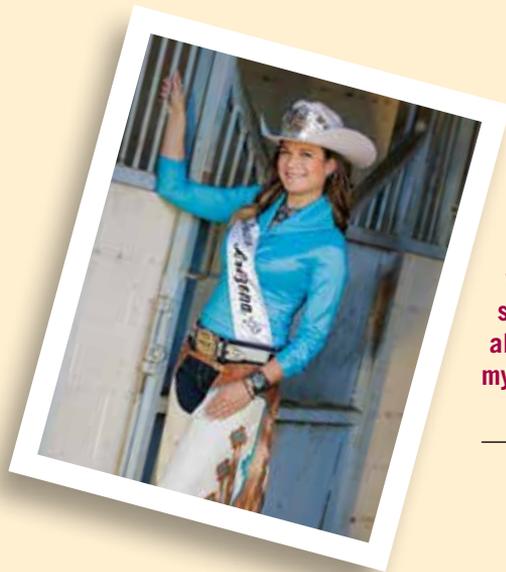
The final structure was confirmed by using a high powered microscope, that sees down to

the nanoscale — 1,000 times smaller than the width of a human hair. Further testing confirmed that it worked just the same as a cellular enzyme cascade.

“We look to nature for inspiration to build man-made molecular systems that mimic the sophisticated nanoscale machineries developed in living biological systems, and we rationally design molecular nanoscaffolds to achieve biomimicry at the molecular level,” said Yan, who holds the Milton Glick Chair in the ASU Department of Chemistry and Biochemistry and directs the Center for Molecular Design and Biomimicry at the Biodesign Institute.

The findings were published in the journal *Nature Nanotechnology*. In addition to Yan, the research team included ASU Biodesign Institute researchers Jinglin Fu, Yuhe Yang, Minghui Liu, Professor Yan Liu and Professor Neal Woodbury, along with colleagues Professor Nils Walter and Postdoctoral Fellow Alexander Johnson-Buck at the University of Michigan. ■





“If it wasn’t for the scholarship, I definitely would not be here. The scholarship I received has allowed me to accomplish my dreams and my goals.”

—Samantha “Sammi” Miles

First in the family

By Jill DeMichele

Samantha “Sammi” Miles is almost done with an extraordinary journey that started with her dream of earning a college degree. As a motivated student in Mohave Valley, Arizona, Sammi’s challenge was to figure out how she could become the first person in her family to graduate from a university. While still in high school, she earned concurrent enrollment college credits and completed junior college courses in the evening and the summer. Never stopping, always studying and achieving milestones along the way, Sammi emerged from among her peers by earning her Associate’s degree before she graduated from high school.

Sammi didn’t think she could come to the ASU Tempe campus until her mother went online and found a scholarship that could potentially pay for in-state tuition for up to four years. Sammi applied for and was awarded the Faire Elizabeth Virgin Sax Scholarship for the two-and-a-half years necessary to finish her degree. She will earn her B.S. in communication from the Hugh Downs School of Human Communication in December 2014.

As the student speaker at the CLAS Hearts & Scholars Celebration and in our scholarship video, Sammi thanked her parents and shared these thoughts about her journey with donors and students, “Nobody else in my family has graduated from a university. I really want...I would love to be the first in my family to graduate with my bachelor’s degree from a university...maybe a master’s degree.”

Sammi’s opportunity was made possible by another aspiring student who came to the Arizona Teacher’s College from her home in Kingman, Arizona almost a century ago. Faire Elizabeth Virgin’s dream was to be a teacher and she proudly earned her teaching degree from ASU in 1927. Faire often expressed her belief that we should live with purpose and love with a generous and grateful spirit. She put this into action by establishing endowed scholarships for students from Mohave County when she was in her 90s. She believed in the power of being “just one person.”



Faire Elizabeth Virgin Sax

Faire passed away in 2008, at the age of 100 and since fall 2010, Faire’s vision and generosity has assisted nine ASU students with over \$110,000 in scholarships to pursue their dreams of earning a college degree. ■

50 years of success

More than a dozen liberal arts and sciences alumni from the Class of 1964 returned to the Tempe campus to celebrate their Golden Reunion. During the three-day event, they joined other 1964 ASU alumni for campus and facility tours, receptions and led the procession of the 2014 ASU commencement at Sun Devil Stadium. The pinnacle of the reunion was the Golden Circle Induction Ceremony where the Class of 1964 passed their “light of knowledge” on to the best and brightest graduates of 2014 with a breathtaking candle-lighting ceremony. Please consider coming back for your Golden Reunion! ■



The 1964 alumni at the College of Liberal Arts and Sciences breakfast held at the ASU Karsten Golf Course.

Sheer generosity

Through a generous planned estate gift and immediate endowed gift to the College of Liberal Arts and Sciences, Yvonne Sheer and Irwin Sheer ('81) seek to support the educational needs of Arizona and to relieve the financial burden many students face upon graduation. Irwin Sheer discovered his lifelong interest in physics at ASU. Supported by professors and fellow students “who ignited his passion for the field” and scholarships, he launched a career that took him from work on the Super Collider to Wall Street. Yvonne's experience in philanthropy for 18 years and dedication to education created interest in the duo to “increase the top tier of students from Arizona who have access to scholarships, so they can focus on their studies.” Their thoughtful and impactful philanthropy, providing scholarships to deserving students, will make a difference for many future leaders at ASU in perpetuity. ■



Irwin and Yvonne Sheer

INVEST in our students today by making a gift to one of the CLAS scholarship funds. To learn more how you can invest, visit: clas.asu.edu/impact, email clasdevelopment@asu.edu or call 480.965.3391.

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