I entered Missouri in Maryville, as a partial solar eclipse, at 11:40 a.m. on Aug. 21, 2017. At 1:06 p.m. in St. Joseph, Missouri’s total eclipse had begun. Moment by moment, this extraordinary phenomenon crossed our state: Kansas City at 1:08, Marshall at 1:10, Columbia at 1:12, Farmington at 1:17, Cape Girardeau at 1:20. On the Carnahan Quadrangle, where I gathered with friends, colleagues, and students, we giggled with delight, stunned by the difference between a 99.9 percent partial and an actual total solar eclipse. Like many throughout the nation, our two-and-a-half-minute party was a culmination of days of celebrations featuring lectures, music, and art. It was the perfect way for us at Mizzou to welcome the 2017–18 academic year.

It is in the spirit of the eclipse that we offer you this issue of Mosaics. Like the eclipse itself, this Mosaics is a state-wide event, one that honors the many ways that you, our alumni, and our faculty and staff contribute to Missouri, the place I’ve called home for almost three decades. You’ll meet an alumna and a new graduate who have created thriving businesses, two alumni serving in the state legislature, another who leads the Saint Louis Zoo, and students who learned more about their home state through a college-sponsored study-abroad program in Jamaica. You’ll also have an opportunity to learn how experts in our own Department of Geography provide the technological support first responders need during natural disasters such as the Joplin tornado and how researchers in Arts and Science are helping to battle Missouri’s opioid crisis. And you’ll meet one of Missouri’s newest citizens, our new chancellor, Alex Cartwright, who frequently reminds us all that MU is the University of Missouri and the University for Missouri.

I hope you’ll enjoy as well the updates from around the College of Arts and Science, including the launch of our new interdisciplinary School of Visual Arts, the creation of our Native American and indigenous studies minor, and the move of the Harry S Truman School of Public Affairs into A&S. We welcome the new opportunities for collaborations, on and off campus, that these changes have already generated.

As this issue celebrates the state of Missouri, I want to invite you to come back to the center of our state, right here on campus. Please come visit us, so that we can learn more about the ways your A&S education has served you, here in Missouri and beyond.

—Patricia Okker
Dean, College of Arts and Science
Bonner was the first zoo Jeffrey Bonner, BA ’75 anthropology, ever visited was the Saint Louis Zoo. “We spent our summers across the river in Highland, Illinois, and would come to St. Louis and go to the zoo,” Bonner recalls. “My dad’s name was Phil, and he told us that Phil the gorilla was named after him, and we were little kids and he told us that Phil the gorilla was number one!”

Several decades later, Bonner now welcomes children and their parents to the Saint Louis Zoo as president and chief executive officer, a position he has held since 2002. When he became president, Bonner says he was impressed by the breadth of conservation programs the zoo supported and wanted to expand on that mission. He did that by cutting back, trimming several dozen conservation programs located in 20 different countries down to just 12 programs. “We were a mile wide and a half inch deep. So, what we did in the sense of expanding is we actually contracted—not the amount of money we spent but the number of programs,” Bonner says. Although it was tough to cut treasured programs, Bonner says the remaining programs are much stronger.

Help for the Hellbender
Following the reorganization, the Saint Louis Zoo has helped preserve an endangered zebra species in Kenya, created three national parks in Armenia with three other zoo partners, and helped create the largest national park in Africa in Niger, to name just a few successes. In conservation efforts closer to home, the zoo works to protect the hellbender salamander. There are two subspecies of the hellbender, and Missouri is the only state where they both exist.

“We were the first zoo to breed hellbenders in human care, and we work closely with the Missouri Department of Conservation and other partners,” he says. Bonner says conservation agents collected salamander egg masses and took them to the zoo to be hatched and reared, releasing them back into Missouri’s spring-fed rivers when they were large enough to survive. While the zoo was raising hellbenders to release back into the wild, scientists also were trying to crack the code for breeding them, which they eventually did. Bonner says three-fourths of the state’s current hellbender population was born or reared at the Saint Louis Zoo.

“What’s interesting to me is that while we have theories, we don’t really know what caused their demise to begin with,” he says. “They are a protected species, and I think we are near the point where we can do the important science of analyzing what’s in the water and where it came from. It’s one thing to put them back—it’s another thing to fix the environment.”

Conservation is at the heart of the zoo’s mission as well as Bonner’s principal passion. Conservation is at the heart of the zoo’s mission as well as Bonner’s principal passion. He earned his degree in anthropology, studying under renowned MU anthropology professor H. Clyde Wilson. Bonner’s specialty was cultural ecology, which he calls the intersection of plants, animals, and people. He earned his master’s and doctorate in anthropology from Columbia University.

Bonner says his educational path is great for a conservationist but a somewhat unusual background for a zoo director. “They are a protected species, and I think we are near the point where we can do the important science of analyzing what’s in the water and where it came from. It’s one thing to put them back—it’s another thing to fix the environment.”

Bonner calls animals in zoos “ambassadors for their kind,” noting that it’s important to connect people with living things if you want people to care about them. He says the zoo’s educational component is crucial to making people aware of different animal species and how the zoo strives to preserve them, but it’s the emotional connection that sticks with visitors long after they leave. “You hear that happening every day,” he says. “Just walk past the stingray exhibit, and you hear it—people are terrified of the stingrays. The more you can immerse people in things like the penguin exhibit, which is stinky and wet and loud and cold, that’s what you want. That’s when people develop some sort of sensitivity and a more profound awareness. If you don’t get their hearts, you are not going to get their heads.”
Two Girls, One Canoe: MU Alumna Turns Creative Passion into Entrepreneurial Bonanza.

Beth Snyder, BFA ‘02, has been a maker since childhood. Since the fourth grade, Snyder says she has always wanted to do arts and crafts projects. “I wasn’t a Legos or a Barbie kind of kid, I just wanted to make stuff like friendship bracelets and jewelry and dolls,” she says. “I knew how to sew at a young age, so any material I could get my hands on, I was doing something with.” However, Snyder says as she got older, she came to believe that she could not make any money doing arts and crafts, so she majored in graphic design when she enrolled at Mizzou.

She kept one foot firmly planted in the arts and crafts world, taking classes in fiber art, photography, painting, and sculpture.

Snyder finally made a career out of creating art, but she did so in a roundabout way. During college, she worked as a production artist at KOMU-TV, creating station logos, client advertisements, and set designs for Pepper and Friends.

Her skills landed her a job as an artist for the CBS affiliate in Nashville, Tennessee, where she spent time creating graphics and animations that complemented the on-air reporting. Industry observers noticed—Snyder won an Emmy for her work on some earlier art projects. Snyder says the letterpress print she could make money making art after all. The pair created an illustration company named 1canoe2 because they had been on a number of canoe trips together. “We liked the way the name implies teamwork: one canoe, two girls,” Snyder says. “We both drew things, and I would print them on my letterpress.”

Snyder’s business started small, in the basement of her home in Fulton, where she and her husband spent two hours each night packing orders to ship. The business eventually outgrew her house, so she moved it to a big barn at her business part-ner’s family property. “Eventually, the business outgrew that. I bought out my partners, and here we are,” she says. “Here” is the old Southern Bank building on Court Street in downtown Fulton, which was a vacant office building when Snyder purchased it in 2016.

Before we talked about buying this building, I had been going to Lions Club and Rotary meetings as a member of the Callaway Chamber of Commerce Board and talking about how great it would be for our county to foster some entrepreneur-ship incentives,” she says. “Then, when it came time to move out of our previous office, I thought I better put my money where my mouth is.”

Snyder, an Auxvasse native, says she loves the fact she can pursue her passion while living near her hometown and her family, where the cost of living is low, and she doesn’t spend a couple hours a day commuting to work from the suburbs, as she did in Nashville. Now, she can walk four blocks to work. “We can run this operation here or in New York, but it’s a lot cheaper here, and we have an opportunity to help uplift this community,” she says.

Don’t Worry, Be Happy
Since its inception in 2009, 1canoe2 has grown into an interna-tional company, with an annual gross of $1.5 million. The com-pany’s cards, gifts, and stationary are sold in more than 1,000 independent boutiques around the world, through national retailers like Anthropologie, and in local stores such as Poppy & Pond in downtown Columbia. So, what’s the secret of her success?

“I’m always telling everybody the artwork needs to look happy,” Snyder says. “It has to look friendly and happy and in-teresting and new. Our style is based on the paint we use. We always use the same kind of gouache [opaque watercolor] paint because it acts and looks a certain way.”

Snyder works with two other artists, Haley Arndt, BFA, BJ ’13, and Kate Zumwalt, to create new artwork for three card releases each year, with 8–16 cards in each release. They hold brainstorming sessions with the entire staff, and then the artist- ists go their separate ways for a few weeks to paint. “The actual painting I do at home at one in the morning,” she says, “because it’s the only time nobody interrupts me.”

Snyder, who talks to the graphic design capstone class at MU each fall, tells students considering a career in art to tend to the business side as well as the creative side. “Always keep your books straight, and don’t be afraid to make money,” she says. “It does not mean your art is not good if you don’t make money, though I think students sometimes get that impression. If you don’t want to make money through art, then go get a job and do the artwork on the side.”
The University of Missouri is well-represented in the Missouri General Assembly, with four alumni serving in the Senate and 24 MU graduates serving in the House of Representatives. Four other senators and four other representatives currently serving attended but did not graduate from MU. Agriculture, business, law, and political science are the most popular degree programs completed by our alumni legislators. We asked a couple of state representatives to share their memories of Mizzou.

A Participant, Not an Observer

Rep. Justin Alferman, a Republican representing parts of Franklin, Gasconade, and Osage counties in the House, originally applied to the School of Journalism but decided he wanted to be a part of the political process rather than report on it, so he switched majors to political science.

“My degree in political science has been key to my employment after graduation,” Alferman says. “I’ve worked on campaigns, for a lobbying firm, a state political party, and in the capital as chief of staff to the assistant majority floor leader. Almost all of these jobs required a high understanding of government and the political process.”

Alferman attended MU from 2006 to 2008, transferring to the university after earning his associate degree in communication. He says the move from a small junior college to a large university was a major culture shock, so he eased into the larger setting by taking just one class at MU in the summer.

“I was completely overwhelmed, and having just one class to focus on versus an entire semester of classes helped me assimilate into university life,” he says. Once he made the adjustment, Alferman got involved with MU’s College Republicans and was a campaign coordinator of Ed Robb’s re-election campaign to the House. Robb, a former MU professor, lost that campaign, but Alferman says the experience provided him with valuable life lessons and a wealth of campaign knowledge.

He also received a wealth of political knowledge from political science Professor Marvin Overby, although he admits it was tough. “My first class I had with him—Congressional Politics—I almost failed,” Alferman says. “I learned more in that class than perhaps any other.”

Alferman’s favorite memory of his time at MU is a fond memory for countless alumni: attending the MU–KU football game in November 2007 that ended with a 36–28 Tiger victory and the number one ranking in college football. Alferman, originally from Washington, Missouri, now lives in Hermann with his wife, Amy, and their daughter, Layla.

A Small-town Success Story

Greg Razer, BA ’00 history, was determined to prove his high school teacher wrong. After receiving his acceptance letter from MU, Razer says a teacher at Cooter High School told him that no one from their small school would ever be able to graduate from a university as prestigious as Mizzou.

Middlebush Auditorium, where Razer attended his first class as a freshman, held more people (really!) than lived in his hometown in the Missouri Bootheel. It was a bit overwhelming, and he struggled to keep up. One night, while studying for midterms at Mark Twain Hall, he put down his books and went for a walk.

“I was discouraged and thinking perhaps that teacher back home was right,” Razer says. “I ended up walking to the Quad and found myself sitting on one of the columns. I decided then and there that I would not leave the university without a degree. I would not go back home without proving that someone from our small town could make it at Mizzou. That night and that moment changed my life.”

Razer says Mizzou is blessed with amazing professors, but two stand out in his mind: Curators’ Professor of History Kerby Miller and Professor Emeritus Robert Collins. He says the classes were difficult but fascinating, and both professors brought history to life.

“The best thing was sitting in my dorm room and, out of the blue, seeing Professor Miller interviewed on The History Channel,” Razer says. “That confirmed to me that I was being taught by one of the best.”

Razer worked for U.S. Senator Claire McCaskill as a deputy regional director until his election to the Missouri House in 2016. The democrat now calls Kansas City home and represents part of Jackson County, but you may occasionally see him hanging out on the Quad.

“To this day, when life gets tough or I’m discouraged, it feels good to go back to campus and to once again lean on those columns,” he says. “There’s no place on campus I’d rather be.”
A few years ago, Tiana Glass, BA ’17 women’s and gender studies, began making sugar scrubs and body butters as gifts for her friends. Now, she has turned this small hobby into a small business. Sitting conveniently in MU’s Student Center, Black Honey Bee Cosmetics (BHBC) serves as a space where other gender nonconforming students and women of color like Glass can feel represented.

Glass’ MU experience is shaped by conversations to heart and found the courage to create something that could give people like her a space to experience their own representation. Glass declares that if it had not been for her time working at these places, BHBC would not have become a reality. BHBC’s roots do not stop there. A Ferguson, Missouri, native, Glass says that her business would not have existed without the events following the shooting of Michael Brown on Aug. 9, 2014. She sees this date as the spark that brought some of her community’s needs to the forefront, one of them being the need for underrepresented members of the community to have control over their own futures.

Looking to the Future

Now that she has graduated, Glass will continue running the shop in the Student Center while applying to graduate schools, but she plans to bring BHBC and its staff will then let staff at Tiger Pantry know how many meals can be awarded to students each week. "Swipes Program" tab providing his or her name, account number, and the number of meals to transfer to students in need. The completed form goes to Campus Dining Services, and its staff will then let staff at Tiger Pantry know how many meals can be awarded to students each week.

“We load the meals on the receiving student’s account, and they can then go to any of the all-you-care-to-eat residential locations like Plaza 900, Rollins, the Pavilion at Dobbs, or The MARK on Fifth Street,” Kiehn says. A student hands his or her ID to the cashier like every other diner, and the cashier takes off one meal. Students can dine with everyone else, and no one is the wiser that they received a transfereed meal. Student clients can visit Tiger Pantry weekly for meal swipes just like they can for produce.

Kiehn says Campus Dining Services advanced 100 meals to Tiger Pantry at the start of the 2017 fall semester so meals could be assigned to students early in the school year. Each MU student who would like to transfer meals to other students can visit the Tiger Pantry website (tigerpantry.missouri.edu) and fill out a form (click on the “Swipes Program” tab) providing his or her name, account number, and the number of meals to transfer to students in need.

University of Missouri students donated nearly 1,600 meals to help feed their fellow students during the spring 2017 semester. The meal-transfer project began as a pilot program in January 2017 to give students an opportunity to transfer unused meals from their campus meal plans to students who may be food insecure—not knowing where their next meal will come from. In all, 86 Mizzou students transferred 1,591 meals. 1,174 meals were assigned to 61 MU students, and 706 of those meals were used during the semester.

Julaine Kiehn, director of Campus Dining Services, says she’s pleased with the initial results. “We agree that the pilot was successful, so we dropped the ‘pilot’ portion and put the meal-transfer program into practice in fall 2017,” she says.

The momentum for the program began in 2016 when Wendy Sims, a professor in the School of Music and the parent of an MU student, contacted A&S Associate Dean Ted Tarkow to ask what could be done with her child’s leftover meals, which expire at the end of each semester. Tarkow then got in touch with Kiehn; Arts and Science Student Council leaders Blake Nourie, BS ’17 biological sciences, and Jake Young, BS ’17 biological sciences; and a few others to solicit ideas. Tiger Pantry already was providing food to students in need and agreed to help administer the new program.

Glass designed every inch of her store with the under-represented in mind. She says that her business would not have existed without the events following the shooting of Michael Brown on Aug. 9, 2014. She sees this date as the spark that brought some of her community’s needs to the forefront, one of them being the need for underrepresented members of the community to have control over their own futures.

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Mizzou’s Alternative Breaks Program is Country’s Largest

BY JORDAN YOUNT

Kelley Inglis, a senior communication major from Farmington, Illinois, recently led a Mizzou Alternative Breaks (MAB) weekend trip to Farmington, Missouri, to work with other MU students on a Habitat for Humanity project. It was Inglis’ first Habitat project, although she had participated in a number of MAB service projects.

“I get to learn something new about myself every time I go, and I gain an eye-opening or life-changing experience every time,” she says. “The MAB program offers really unique experiences that you can’t get just volunteering by yourself.”

MAB started as Alternative Spring Break in 1991, sending MU students on three service projects that year. Since then, the program has grown to a full-service project and securing food and lodging for student volunteers.

How Can We Help?

“Last year we sent out 178 trips with more than 1,700 MU students serving 29 states and two international countries,” Edwards says. The second largest AB program is at The Ohio State University, which coordinated 88 alternative break trips last year. “I think what is unique about that is not the number of trips we send out, but the number of MU students participating in AB trips and wanting to spend their breaks serving others.”

Three years ago, MAB partnered with MU Extension to help the organization meet its goal of serving the entire state of Missouri. Edwards says last year, MAB coordinated 82 weekend service trips to 38 Missouri counties, and its goal is to serve every county in Missouri by 2020.

“Our weekend site leaders work closely with MU Extension to identify areas of need and ways our students can serve local communities,” she says. For example, MAB site leader Cinnamon Langley, a junior psychology major, asked her contact at the Stoddard County Extension Office how students could serve. In late October, Langley and 11 other students spent a Saturday cleaning observation decks at the Mingo Wildlife Refuge near Puxico, Missouri, and spent the following day at the Bloomfield Living Center playing bingo with residents.

Weekend trips can be easier for students because it’s a smaller time commitment, and the students know which weekend they will serve far in advance,” Langley says. As a site leader, she is responsible for coordinating the weekend service project and securing food and lodging for student volunteers.

“I get to learn something new about my career choices because I didn’t have that perspective when I first came to college,” she says.

Edwards says it’s not unusual for students to rethink their majors or career paths after participating on an MAB trip.

“In fact, last year, 27 percent of participants from feedback surveys considered changing their majors and 59 percent saw a direct connection between their trips and their academic programs,” Edwards says. “Last year, 94 percent said it inspired them to want to serve more locally, 85 percent want to do more advocacy work, and 40 percent said their alternative break led them to consider participating in national service programs after they graduate.”

Edwards says the most common benefit students say they get from participating in MAB trips is the sense of belonging they feel from working with fellow students and serving others. “Something that stands out, too, is the interactions with diverse groups of people,” she says. “It challenges students to think about the root causes of social issues and what social justice really means, and allows them to interact with Mizzou students and communities that are different from themselves or their home community.”
Magic Happens When You Support Study-abroad Scholarships

I knew something magical would take place because we were the first all-black/black studies study-abroad trip,” wrote Deja Mackey in her travel journal. Mackey is a senior in black studies who participated in the inaugural Jamaica: History, Literature, and Music trip. In June 2017, Stephanie Shonekan, chair of the Department of Black Studies and associate professor of music, led a group of eight students on a 10-day trip examining, exploring, and feeling their way around Jamaica. Shonekan, Sheri-Marie Harrison, an associate professor of English, and Donell Young of the Center for Academic Success and Excellence, had worked for about a year to structure the trip and bring it to fruition.

New Perspective
Shonekan describes the trip as very intense. “We went to Trench Town, which is a part of Kingston that is some of the hardest living you’ll find in the Caribbean, but critical to our students’ understandings of Bob Marley’s life and music. Also, while in Kingston, we went to museums, art galleries, a Rastafarian camp, musical events, and every minute was taken up.” Every evening, the group debriefed the day, a process that was greatly facilitated by Harrison’s father, Audley Harrison, who lives in Jamaica and acted as their guide.

After visiting a Rastafarian camp, one student noted in his journal that he recognized their lifestyle was not for him, but while there “I did not feel judged, nor accepted, but still comfortable.” The leaders feel that students make their best epiphanies abroad. “When you go to Trench Town, and then you compare it to the inner cities here in the U.S., you can really have a perspective that’s informed more broadly, more globally,” says Shonekan. “Some of the best learning and bonding that I have seen happened on that trip.”

Help, Please
Shonekan says the trip is the least expensive 10-day trip in the MU International Center, but “many of the students we want to attract to this program can’t afford to travel.” So, the three faculty members found sources of funding for the students—one of those sources was the College of Arts and Science Study-abroad Scholarship.

A&S encourages every undergrad to study abroad, if at all possible. To that end, the college helped 58 students participate in study-abroad experiences through funds from its Study-abroad Scholarship. Funds amounting to just under $185,000 were awarded during the 2017 calendar year.

“Learning all that history is invaluable to any student, whether they are black studies students, or students who are taking this for a humanities credit,” says Shonekan. “It’s like magic; it opens their eyes in new ways. So if we can get more students out there, the better.”

The students below all benefited from some source of financial aid for their trips abroad, chief among those is the A&S Study-abroad Scholarship.

“I am so grateful that I didn’t miss out on the opportunity for a study abroad in Negril!”
Micah Grisamore, BA ‘17, political science.

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“Thank you, thank you, thank you for helping me be able to see the wonders of Greece!”
Heath Snider, senior in economics and classics. Pictured: Snider and Arris Pardalos, senior in classics, at the stadium at Ancient Messene.

“The absolute opportunity of a lifetime! And this award was vital in this academic adventure!”
Laura Koch, senior psychology major is pictured by one of Amsterdam’s famous canals.

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“The absolute opportunity of a lifetime! And this award was vital in this academic adventure!”
Laura Koch, senior psychology major is pictured by one of Amsterdam’s famous canals.
Late in the afternoon on Sunday, May 22, 2011, a monstrous EF-5 tornado slammed into the southwest Missouri community of Joplin and obliterated everything in its mile-wide path through the city. Buildings were leveled, vehicles were tossed around like toys, trees were uprooted, and identifying markers such as street signs had vanished in the maelstrom.

Knowing that the city was about to be inundated with law enforcement officials, first responders, search-and-rescue teams and others, a little-known agency jumped into action. Staff at the Missouri Spatial Data Information Service (MSDIS), housed at Mizzou North, immediately made images of Joplin prior to the storm available on its servers so emergency officials could find their way through the rubble. Maps and images of Joplin are just the tip of the iceberg of information that can be found at Missouri’s spatial data clearinghouse.

“There is more data online than anyone could possibly use or even explore,” says MSDIS Director Mike Urban, chair of MU’s Department of Geography. “It’s the virtual equivalent of the Missouri State Historical Society. There’s that much data, and we have room to expand.”

Serving Up Data

In fact, Urban says MSDIS servers currently host 48 terabytes of spatial data, including aerial photos, remote sensing data, congressional boundaries, vegetation maps—basically anything with x–y coordinates. The agency also hosts a lot of image files, which they periodically put on the servers when natural disasters strike. In addition to the images of Joplin, MSDIS also has posted images of flooding in eastern Missouri in 2008 and of areas of southwest Missouri affected by ice storms in 2009. MSDIS collects these data from various agencies and then performs quality-assurance and quality-control measures before making it available to the public.

Martin Wills, the former MSDIS iNet administrator, says the geographic information system (GIS) is more than just a map. It is any number of layers, and each layer has attributes that can be accessed. So, for example, a healthcare company looking at a map of hospitals in Missouri can click on a hospital location to learn more about that particular facility.

Valuable Service—and FREE!

Joe Carter, a transportation planner for MODOT, says MSDIS is a valuable resource for anyone who is familiar with GIS because they don’t have to waste time and money searching all over for the information.

“We really appreciate that our GIS data in Missouri is hosted in one place, and it’s not by accident,” Carter says. “I think it was a vision developed years ago in the geography department as other states started doing this. We started early, and now other states look to ours to see how we serve up data.”

Urban says MSDIS also hosts demographic data. For example, every 10 years, MSDIS publishes all of the census data for Missouri.

Seeing the Invisible

Missouri’s One-Stop Shop for Spatial Data

BY JORDAN YOUNT

After the Joplin, Missouri tornado, landmarks like street signs, trees, and buildings were wiped away. MSDIS provided responders with GPS coordinate maps to help emergency services find their way.
BY JORDAN YOUNT

MU Researchers Battle the Opioid Crisis in Missouri

This past summer, Governor Eric Greitens signed an executive order directing the Missouri Department of Health and Senior Services (DHSS) to create a prescription drug monitoring program. The goal of the program is to reduce opioid abuse. Professor Denis McCarthy, a clinical psychologist in the MU Department of Psychological Sciences, says the opioid crisis in Missouri and elsewhere is the newest challenge related to addiction facing health care professionals, law enforcement officials, and government agencies.

“When I got here in 2002, the state of Missouri was dealing with a significant crystal-methamphetamine problem, in part because of differences in state regulations controlling access to pseudoephedrine—a precursor to crystal methamphetamine,” McCarthy says. “The state eventually got a handle on dealing with the meth problem, but in the last 10–15 years, we’ve seen a spike in opioid abuse, whether it’s prescription drugs or heroin.”

McCarthy and about a dozen colleagues in the department are dedicated to training future addiction scientists at every level. A training grant from the National Institute of Alcohol Abuse and Alcoholism (NIAAA) has allowed the group to train people in alcohol and other addictions.

“We produce PhD graduates who are trained in the full range of tools for dealing with addiction—anything from basic research on diagnosis and methodology to providing effective treatment,” he says. One of the program’s recent graduates is now the principal investigator for two statewide programs targeting opioid abuse in Missouri.

From Alcohol to Opiates

Rachel Winograd studied under McCarthy and Curators’ Distinguished Professor Ken Sher, who are co-directors of the department’s training grant from NIAAA. After earning her doctorate, she did a clinical internship at the St. Louis Veteran’s Administration Hospital, where she focused on the hospital’s opiate-treatment program.

Winograd now serves as the principal investigator of the Missouri Opioid/Heroin Overdose Prevention & Education (MO-HOPE) program and the Missouri Opioid State Targeted Response (STR) project. MO-HOPE focuses on the distribution and training in the use of Naloxone, an opioid antagonist that reverses the effects of an overdose in minutes, while Missouri Opioid STR concentrates largely on the role of maintenance medical treatment. Both programs are housed at the Missouri Institute of Mental Health (MIMH) at the University of Missouri–St. Louis.

“Essentially it’s a philosophy toward drug use and recovery that acknowledges that not everybody can be completely abstinent. So let’s be realistic and pragmatic in how we work with people who use drugs so we can help reduce the chances of harm without mandating that they quit, because that’s just not going to work,” Winograd says.

“People can’t recover if they are dead.”

Addiction Varies from State to State

Winograd says every state deals with its own unique addiction issues: in Kentucky and West Virginia, for example, drug use and death from overdose is driven by prescription pills, but in Missouri the main drivers are heroin and fentanyl, which is 50 times stronger than heroin. Winograd, who has been in her position with the MIMH just over a year, says it’s difficult to assess results in the context of a growing crisis. In 2016, she says 908 people died from drug overdoses in Missouri, and 70% of those deaths were in St. Louis and surrounding counties. Of those deaths, she says close to 90% were probably from heroin or fentanyl.

“Since the MO-HOPE program started last September, we’ve received reports of over 163 lives saved by Naloxone, which is likely an underestimate, and that more than 360 people have enrolled in treatment services through the STR project,” Winograd says.

She says pills are an important part of the drug pipeline in Missouri, but they are not killing people as readily as other drugs. And she says prescription-drug monitoring programs that target doctors who overprescribe opiates could have unintended consequences.

“If you arrest the doctor with no follow-up plan, then you have a whole patient panel, 40, 50, or even 100 patients who were prescribed opiates who are left physically dependent with nowhere to go,” she says. Winograd has been working closely with the state to develop a more comprehensive response to the opioid crisis in Missouri—saving the lives of people who suffer from opiate-use disorder and promoting treatment and recovery.

McCarthy says the state eventually will get a handle on the heroin/fentanyl problem through policy and treatment efforts that restrict the flow of the drugs into the state and help people battling addiction. But then, unfortunately, there will be a new drug, or a new source for an old one, and we will have a different problem to deal with.

“Mizzou’s program for training addiction scientists can serve the state over the long run by having the infrastructure in place to train students who are prepared for whatever addiction problems come across the state,” he says.
MU Receives NASA Grant to Study Cryovolcanism in Outer Space

BY JORDAN YOUNT

W e are all familiar with the terrestrial or rocky planets in our solar system—Mercury, Venus, Earth, Mars, as well as a number of terrestrial satellites such as our moon or Jupiter’s moon, Io—but far less is known about the icy water worlds that populate our solar system. Since the late 1980s, spacecraft such as Voyager 2, Galileo, Cassini, Dawn, and New Horizons have revealed images of many of these water worlds, including Jupiter’s moon Europa, Saturn’s moons Enceladus and Titan, and Neptune’s moon Triton. Surface features on these bodies often resemble features on Earth associated with lava flows or calderas, and a number of these bodies have been observed erupting water or other volatile compounds that would be frozen solid at the surface temperature of the body, a process called cryovolcanism. So, who better to study these ice volcanoes or geysers than MU’s own lava expert, Professor Alan Whittington, chair of the Department of Geological Sciences?

“The Cassini satellite managed to fly through one of these plumes on Enceladus and measured what it was composed of, so the geysers are made of whatever the ocean is made up of under the ice,” Whittington says. “Somewhere in the interior of these icy worlds there’s probably going to be something similar to Earth’s sea floor. We have mid-ocean ridges with volcanoes, which are great places for life such as tubeworms. On these bodies, we don’t think there are plate tectonics, but there should be warmth from hydrothermal circulations, and these are perhaps the most likely place to look for life on these icy bodies. The bodies that have a layer of water are most likely to harbor life.”

NASA Green Lights the MU Proposal

Whittington and geology doctoral student Aaron Morrison recently received word that NASA agreed to fund their research proposal, “Rheological Investigation of Cryovolcanic Lavas.” Rheology is the study of the properties and behavior of matter as it flows or deforms. The grant funding will pay for a new rheometer, a device to measure both the stress required to deform a material and its viscosity, for the geology department, and Morrison eventually will go to the Jet Propulsion Lab (JPL) at the California Institute of Technology to expand upon the experiments he will begin at MU. Morrison says he first heard of the concept of cryovolcanism while taking a course in the lab.

“I’d never heard of this before, and I wanted to learn more,” Morrison says. Then Morrison accompanied Whittington to a Geological Society of America conference, where NASA scientists presented data from the New Horizons probe at Pluto.

“At the end of one of their talks they said, ‘What we really need right now is some rheological data on these findings,’ and I thought, ‘Well, that’s what I do—why don’t I contact these folks and see if we can do something cool?’” Morrison said. “I thought we could determine the composition of the surface ices/geysers from spectral analyses conducted by the probes and then synthesize those materials in the lab.”

The Search for Answers and Life

Whittington says the goal of the research is to characterize and understand the chemical, mineralogical, and physical features of these planetary surfaces and the fluids that interact with the surface, and to understand the process of cryovolcanism and interpret the physical features it produces. He thought about looking at the rheology of cryolavas a decade ago, but that was before the probes had reached these outer bodies, and there was no funding available for the research. Whittington says the recent success of the Cassini probe plus plans to send a probe to Europa made it a good time to request funding.

“One of the nice things Aaron did in the class was to research what’s next in the field since making some basic measurements that need to be made and tying that to how we can improve our understanding of what the interior ocean might be made of,” he says. Whittington says probes to Europa and other water worlds will likely land near cryovolcanoes to sample bits of the interior oceans belched up to the surface. Those frozen chunks of ocean are the most likely to harbor life since life cannot exist on the surface, where temperatures range from -256°F at the equator to -364°F at the poles.

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Visualizing the Future

Taking Our Art to You

Truman School Joins A&S

The new School of Visual Studies (SVS) in the College of Arts and Sciences is connecting with citizens across the state through a new outreach program—MU Art on the Move.

“MU Art on the Move is a community outreach program where we are providing students with professional opportunities in their hometowns or their home regions,” SVS Director Jo Stealey says. “Their families trust the education of their kids to MU, so we in turn want to take the students back to show their families what they are learning and how their careers are unfolding. At the same time, we are providing students with professional opportunities through exhibits, lectures, workshops, and symposia.”

The school has purchased a trailer for pop-up exhibits and workshops, “a mobile face for our school,” according to Stealey that will put students “a step ahead.”

She says the school has partnered with MU Extension and Columbia’s Sager Braudis Gallery in its community outreach efforts. Another partner is the Montgomery City Arts Council, which hosted the school’s first outreach event Oct. 5.

It’s helping us to connect back to our communities in the state.

It’s celebrating what our students are doing and helping them to gain this experience,” says Stealey, “but it’s also helping us to connect back to our communities in the state so they have a better understanding of what it is we do and the impact that the visual has on their culture.”

BY JORDAN YOUNT

For the University of Missouri (TSPA) has a long history of preparing students for professional excellence and leadership in public service. Established in May 2001, the Harry S Truman School of Public Affairs (TSPA) advances the study and practice of governance.

Broader Collaborations

In fall 2017, TSPA became part of the College of Arts and Science, creating additional opportunities to develop multi-disciplinary offerings to better serve students in an evolving landscape. Director and Professor Lael Keiser is looking forward to building on the successes of the past. “We are exploring partnerships with several departments,” notes Keiser. “For example, we are currently collaborating with the schools of music and visual studies, and the theatre department on an arts management and evaluation specialization.” TSPA is also collaborating with the Kinder Institute for Constitutional Democracy.

Experiential Learning

Like all of A&S, TSPA is focused on career readiness. It hosts an annual career fair and has a robust internship requirement. Students intern with a wide variety of public and nonprofit agencies both domestically and abroad, giving them practical, hands-on experience and opening them up to new ideas and career paths. Second-year students also complete a group capstone project. These are projects solicited from agencies and non-profits across the state, which give students the opportunity to work on real-world policy problems. The capstone projects provide tangible benefits to the hosting agency or organization while allowing students to hone their research skills.

As public service becomes ever more complex, it is increasingly important to have public servants in the government and nonprofit sectors who are armed with the knowledge and experience to solve problems and develop sound policy. The TSPA’s rigorous program gives students what they need to succeed. Students come to TSPA with the passion to serve and become graduates prepared to change the world.
Most Missourians probably are aware of their state’s Native American heritage, if for no other reason than the plethora of Native American place names such as Miami, Neosho, Osceola, and Tecumseh, to name just a few. Numerous lakes and rivers bear the names of tribes that no longer inhabit the state, and, of course, the state’s name is derived from the Missouri, or Missouria, tribe and means “one who has dugout canoes.” When Missouri became a state in 1821, thousands of members of the Kickapoo, Shawnee, Ioway, Otoe, Delaware, and Osage tribes remained in Missouri, but by the 1830s most had been pushed out by the state’s expanding white population.

Cultural Immersion
Beginning in fall 2017, students at MU could immerse themselves in Native American history, culture, language, religion, and more by enrolling in the new Native American and indigenous studies minor. Dennis Kelley, an associate professor of religious studies, serves as the coordinator of the new academic offering and says students are learning about indigenous peoples outside of the United States as well. He credits English Professor Joanna Hearne for spearheading the effort to create a new minor following discussions with others who teach in the area of indigenous studies, including Joseph Erb in digital storytelling and Mark Palmer and Soren Larsen in geography.

“Our students could benefit by having a minor on their transcripts that says they have expertise in these areas, such as Indian law, Indian health—the kinds of things that would help them be more attractive on the job market,” Kelley says.

Interdisciplinary Approach
The new minor currently includes courses in English, geography, peace studies, religious studies, history, and anthropology. The next step will be making connections outside of the College of Arts and Science, perhaps with the School of Law, the School of Medicine, and the College of Agriculture, Food, and Natural Resources.

“There are a lot of treaties working their way through the courts, and there is a need for people who have expertise in both the legal system and in American Indian cultural issues,” Kelley says. He cites Indian health as an area that could see growth because many reservation communities have the resources to build a medical clinic but have difficulty attracting the personnel needed to run it. Kelley says the initial course (Native American and Indigenous Studies or NAIS) is a broad overview of indigenous studies, with other courses spread out across the College of Arts and Science.

Kelley and his colleagues hope the new minor will help attract native students from throughout the region.
Q&A with the Chancellor

Alexander N. Cartwright officially became the chancellor of the University of Missouri on Aug. 1, 2017, and he comes to Mizzou after serving as the provost and executive vice chancellor at the State University of New York. He holds a doctorate in electrical and computer engineering and is an internationally recognized scholar in the area of optical sensors. He is a native of the Bahamas, and he and his wife, Melinda, have two college-age children, Andrew and Alyssa.

Did you always want to be an engineer? I started out in accounting, but one day when I arrived at work, the owner called me into his office and asked why I was not considering engineering as a degree. He thought because I was good with my hands that engineering might be a good fit. I looked into it and switched into engineering the next semester.

What was your most useful course in college? Rhetoric taught me how to write, how to speak, and how to present a position on a topic. That helped me to be successful in teaching, securing research grants, writing journal papers, and presenting results of the research. Moreover, it helped me as I moved into administration.

What’s your favorite Mizzou tradition so far? There are many that my wife and I truly enjoyed. We enjoyed entering through the columns during Tiger Walk, participating in all of the events of Homecoming, graduation ceremonies, and others, but I need to go through the entire year before I can pick a specific one.

Do you have time for any hobbies? If so, what? I used to play a lot of pool when I was younger. I hope I can get back to that and play against some of our students. In addition, I enjoy biking and the Katy Trail is remarkable. When the weather gets a little warmer, I want to get back out on the trail.

Favorite book? My husband, Richard Edging, is a retired archaeologist. We have two grown children, Kate, a graduate of Tufts University in Arabic and international relations, is taking graduate classes at Mizzou, having just returned from the Peace Corps in Sierra Leone. Our son, Jack, is a senior at Earlham College, majoring in music studies. My mom, Ethel Okker, has lived in Columbia since 2004.

Meet the Dean

On Nov. 21, 2017, Provost Garnett S. Stokes announced the appointment of Patricia Okker as dean of the College of Arts and Science. A professor of English, Okker has been at Mizzou since 1990. Prior to her appointment as dean, she served as chair of the English Department and as senior associate provost. Okker’s research and teaching focus on 19th-century American literature. She is a recipient of a William T. Kemper Fellowship for Teaching Excellence and a Faculty—Alumni Award from the Mizzou Alumni Association.

We asked Dean Okker a few questions to get to know her a little better.

Family? My husband, Richard Edging, is a retired archaeologist. We have two grown children, Kate, a graduate of Tufts University in Arabic and international relations, is taking graduate classes at Mizzou, having just returned from the Peace Corps in Sierra Leone. Our son, Jack, is a senior at Earlham College, majoring in music studies. My mom, Ethel Okker, has lived in Columbia since 2004.

Hobbies? It’s an odd combination, but I’m an endurance runner and also compete in Olympic-style weightlifting and in powerlifting. A proud member of a local team called Older Women on Weights (OWOW), I hold several world records for my age and weight class in the World Drug-Free Powerlifting Federation. But right now my focus is on training for my fifth Boston Marathon in April.

Pets? We are a die-hard golden retriever family. Blu is four.

Favorite recipe? Blueberry pie.

Favorite book? Herman Melville’s Moby-Dick.

Favorite campus tradition? You can’t beat Homecoming, of course, but my personal favorite is serving pancakes to students in the Student Center during finals week. Who doesn’t love pancakes?

Did you know? When you join the Mizzou Alumni Association, you automatically become a member of the Arts and Science Alumni Organization.

Visit Mizzou.com and select the College of Arts and Science as your preferred school/college. Thank you for supporting the College of Arts and Science.
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