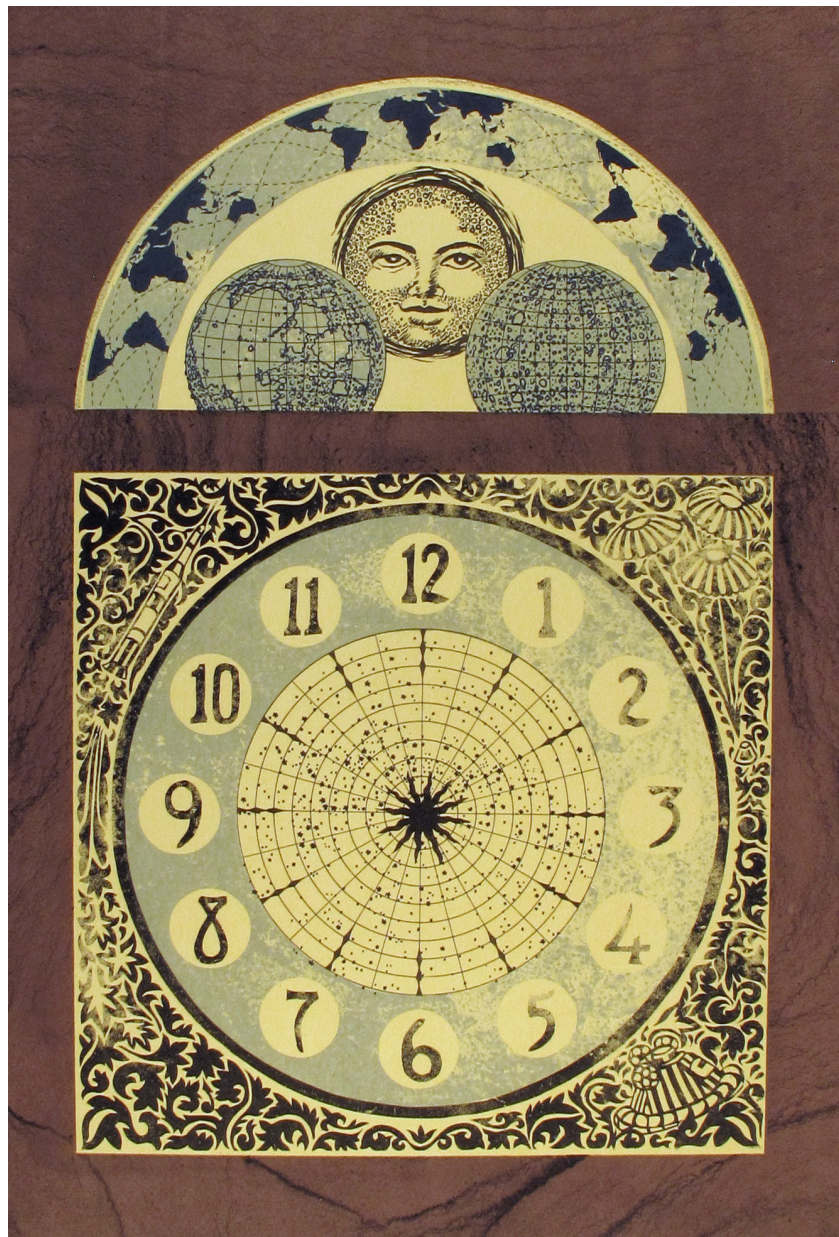


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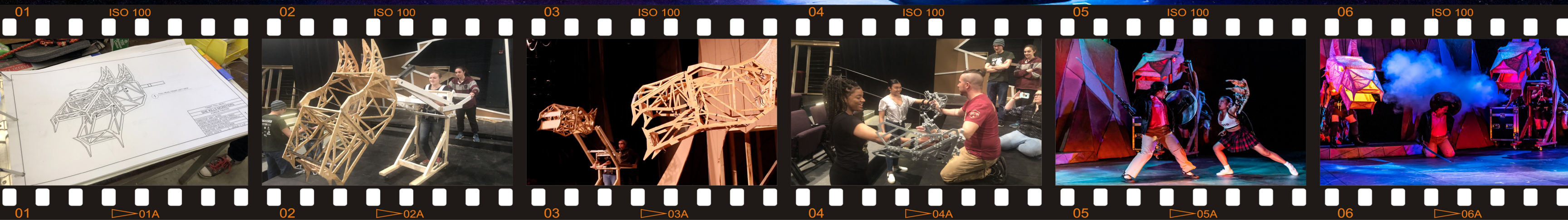
COLLEGE OF LIBERAL ARTS | *Fall 2019*



MONSTROUS ASSIGNMENT

This was a capstone project with some teeth. During spring semester, a trio of multidisciplinary and general engineering students capped their college experiences by collaborating on a project featured in Purdue Theatre's production of *She Kills Monsters*. Carina Stocker, Elena Helvajian, and Zack Kovalenko designed and built functional dragon heads and claws that factored heavily in the play's climactic scene, a battle between the main character and Tiamat, the five-headed queen of all evil dragons in *Dungeons & Dragons* lore. Read more about the theatre engineers' design project online at cla.purdue.edu/think

Photos by Mike Atwell, David Ching, and Melodie Yvonne Ramey (Photographic Melodie)



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INTERNATIONAL SCHOLARS

The College of Liberal Arts ranks among Purdue's best-represented campus units in the Fulbright Scholar Program with numerous faculty participants. Nine of the College's most recent Fulbright scholars share what they gained through their experiences working abroad.



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STATING THEIR CASE

Purdue's growing speech and debate program aims to become a national contender in multiple events each year.



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PAPAL INSPIRATION

Motivated by Pope Francis, Professor Emeritus of Philosophy Donald Mitchell facilitates housing cooperation in three U.S. cities.



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MAN + MACHINE

Space history students recount how Boilermaker astronaut Neil Armstrong harnessed technology to make legendary giant leaps.



On the cover: Visiting assistant professor Jennifer Scheuer was one of three artists who used research in Purdue's Barron Hilton Flight and Space Exploration Archives to inspire their contributions to the *Return to Entry* exhibition at Robert L. Ringel Gallery. Scheuer created this piece, *Return to Entry I*, with lithography and silkscreen.

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CONSIDER THIS

Dear Friends,

It is my pleasure to share this most recent edition of *THiNK Magazine* with you.

As we conclude Purdue's sesquicentennial celebration, I am struck by the many areas of connectivity our College has built with colleagues across campus. At first glance, some thought that the Ideas Festival themes — Space, Artificial Intelligence, Health and Longevity, and Sustainability — had little to do with our College. What we saw other the course of these events was quite to the contrary. You will see reflected in this edition's articles evidence of many interesting connection points with research tied to Purdue's historic strengths in science, technology, engineering and math (STEM).

Looking across the horizon of higher education, our disciplines, both as general education requirements and fields of study, are ubiquitous. American universities have not traditionally existed without them.

Today, as we look at decreasing enrollments across the liberal arts and projected demographic decreases in the number of prospective college students, the liberal arts are in jeopardy. It is incumbent upon us to find ways to differentiate ourselves from other programs to build and sustain our enrollments. We have done this with programs like Degree in 3, Cornerstone, and Degree+.

Alongside those programs, by virtue of our place at Purdue University, we can define a particular liberal arts experience. Students who would major in history or philosophy, to name just two, can find a different kind of education here.

Given the recognized strengths of this university, our history students can study the impact and evolution of flight and the space age replete with one of the nation's most relevant and distinctive collections in the Barron Hilton Flight and Space Exploration Archives.

Our Department of Philosophy Head has been part of conversations to create the Data Mine, a campus-wide learning community about data and technology. The Data Mine will engage students from a wide array of majors with the important ways in which data, and understanding its collection and implications, will play a growing role in our personal and professional lives.

I invite you to read this issue and consider the ways in which our College at Purdue presents a unique opportunity to explore questions at the intersection of the liberal arts and STEM.

Sincerely,

David Reingold

David A. Reingold
Justin S. Morrill Dean of Liberal Arts



GLOBAL REACH

FACULTY MEMBERS ENRICH TEACHING AND SCHOLARSHIP THROUGH PARTICIPATION IN FULBRIGHT PROGRAM

By David Ching

In 1945, Sen. J. William Fulbright of Arkansas introduced legislation to use funds from surplus war materials to support a new international educational exchange program dedicated to supporting peaceful relationships between the United States and other countries.

More than 380,000 scholars — approximately 8,000 per year — and 155 nations have participated in the Fulbright Program since then, relying upon its foundational spirit of international cooperation to address pressing global issues.

“The Fulbright Program is widely regarded as one of the most distinguished awards in the world and, to date, has produced more Nobel laureates than any other government-sponsored program,” said Christopher Lukasik, Purdue’s Provost Fellow for Faculty Fulbright Awards and himself a two-time Fulbright grantee.

Former Provost Debasish “Deba” Dutta created Lukasik’s position in 2017 as part of a strategy to increase Purdue’s number of Fulbright faculty, and this year the University saw record-breaking results. Eight faculty members received Fulbright U.S. scholar awards for the 2019-20 academic year, the most ever for Purdue in a single year.

Included in that group is Wendy Kline, the Dema G. Seelye Chair in the History of Medicine, who continues the College of Liberal Arts’ substantial representation in the Fulbright Program.

“The College of Liberal Arts has historically been the top producer of Fulbright faculty at Purdue,” said Lukasik, who in addition to his role as Fulbright facilitator is an associate professor of English and American Studies. “It speaks not only to the world-class stature of CLA’s faculty, but to the College’s commitment to support the international scope of their teaching and research.”

In turn, Lukasik said Fulbright faculty return from their trips abroad better prepared to help their students take up global challenges like immigration, renewable energy, and food security, and to make headway in a global economy. That was his experience after completing Fulbrights at the University of the Philippines and at the University of Graz, Austria.

“Both have impacted how I approach teaching and how I address any number of global issues in the classroom,” Lukasik said. “I wish every student at Purdue could have the opportunity to live in a developing country — not as a tourist, but as a resident — and experience how the majority of people on this planet live day to day. It will change how you think about so many critical issues our planet is facing.”

That goes for faculty, too.

In this issue, nine of the College’s most recent Fulbright grantees will describe how their experiences in the program enriched their personal and professional lives. Each faculty member shared stories of how the Fulbright is indeed a life-changing opportunity.

“I value it so much in so many ways that I can articulate, and in ways that I cannot put into words so easily — and I suppose the most important part of my Fulbright experiences lie so deep within me and are of such a vast nature that they cannot be summed up simply,” said TJ Boisseau, associate professor of women’s, gender, and sexuality studies and two-time Fulbright recipient.

“I would say the amount of intellectual growth that I’ve had from living abroad as a Fulbrighter, and also from other experiences living abroad going all the way back to my time as a college kid on a study abroad that required me to do my own independent comparative ethnographic research ... well, these experiences certainly were as formative for me and for my growth as an intellectual as getting a Ph.D. in my field. I have no doubt about that.”

CLA CORE FULBRIGHT SCHOLAR PROGRAM

PARTICIPANTS SINCE 2012-13

TJ BOISSEAU

Iceland

MARIANNE BORUCH

Australia

FREDERICK ROWE DAVIS

Hong Kong

ANGELICA DURAN

Mexico

STACY HOLDEN

Morocco

WENDY KLINE

United Kingdom

LEIGH RAYMOND

Canada

MARGARET TILLMAN

Taiwan

SELECTED CLA FULBRIGHT PARTICIPANTS SINCE 1988-89

LEONARD HARRIS

Uganda

PAUL DIXON

Brazil

CHARLES CUTTER

Spain

DOROTHY DEERING

India

WILLIAM MCBRIDE

Bulgaria/France

KRISTINA BROSS

Germany

LISA LEE PETERSON

Mexico

SALLY HASTINGS

Japan

JEFFREY TURCO

Iceland/Germany

CHRISTOPHER LUKASIK

Philippines

DANIEL MORRIS

Netherlands

MARIANNE BORUCH

United Kingdom

SORIN MATEI

Serbia



ICELAND

INTERNATIONAL IDEAS

TJ BOISSEAU

When TJ Boisseau applied for the Fulbright experience she completed in the spring semester of 2017, she specifically wanted to

teach at the University of Iceland.

Her reason: The University of Iceland is set in a country that is on the forefront of multiple issues in Boisseau's field of expertise and is home to an internationally renowned institute for gender equality studies.

"The United Nations University Gender Equality Studies Centre at the University of Iceland trains young activists seeking careers in public service in their home countries, primarily in Africa, the Middle East, and South Asia," said Boisseau. "This training provides an opportunity to hone the ideas about gender equality they bring to the program, or in some cases to conceive a brand-new understanding of what feminism means to them and might look like in an institutionalized setting and gives them a chance to think through how they might be a feminist agent of change in their own conflict-ridden, or war-torn, economically crisis-ridden society.

"That's a mission that I was proud to contribute to. And, I'm interested in learning from other scholars who work on global feminisms."

By participating in conferences in Iceland and other locations since her Fulbright trip, Boisseau has been able to develop connections with women's studies administrators and directors around the world.

Meanwhile, the exposure to other viewpoints that the Fulbright trip provided has greatly impacted her teaching.

"Here at Purdue, I teach transnational feminist activism and global feminist movement in historical perspective, and certainly that was a great experience for invigorating my teaching with new perspectives. Very much so, I would say," Boisseau said. "In terms of takeaways in specific, I got a ground-level view at what some have called the 'NGO-ization' of feminism, state-supported feminism, and market-driven feminism, in action.

"My graduate training was as a scholar of American women's history, and only secondarily in Middle-Eastern women's studies," she continued. "And, although I have done historical research in archives located in Europe, the Middle East, and Africa, honestly, archival research does not always challenge one's perspective since it is a fairly solitary endeavor and does not force one into conversations or collaboration with others. Having the experience of teaching feminist studies in an international context was

incredibly eye-opening in lots of ways that will impact how I teach these subjects back home in Indiana, and how I do my own research, as well."

This was Boisseau's second Fulbright grant, after previously teaching in Germany at the University of Bayreuth in 2003-04. And like many of her Purdue colleagues who have completed Fulbright trips abroad, Boisseau said the cultural value of living in Iceland — this time with her husband and daughter in tow — was as enriching as the professional opportunities the trip provided.

"Central to my understanding of what it means to be an educated person is meaningful travel — not tourism or even what passes now for 'edu-tourism,' which often means a study abroad program that does not challenge one's ideas, or require language acquisition, or cultural immersion, nor does it even involve much study sometimes," Boisseau said.

"To immerse yourself in another culture by figuring out how to live there, how to communicate and forge relationships, how to get work done — whether it's teaching, or ethnographic research, or some other kind of collaborative work — results in a whole new perspective, not only on the world, but on your own culture, opening up possibilities you couldn't have imagined apart from that immersion."



Photos courtesy of CLA faculty members, Purdue University



MEXICO

ARCHIVAL DEEP DIVE ANGELICA DURAN

Few scholars — especially those who are also fluent in Spanish — know John Milton’s catalog like Angelica Duran. So when Duran thought she detected

Milton’s influence on the words of 19th century Mexican statesman Benito Juárez, she had to know whether her suspicions were correct.

“Benito Juárez, who’s often known as the Abraham Lincoln of Mexico, was a very unique, beloved, strong-armed president,” said Duran, a professor of English, comparative literature, and religious studies. “I had read his works, and I kept hearing Spanish echoes of Milton. I thought, ‘I don’t hear echoes of Milton everywhere, even though I’m a Miltonist, but, gosh darnit, I think this guy read Milton.’”

Proving it took some legwork, but thankfully Duran had nine months — thanks to a 2016-17 Fulbright-García Robles grant — to determine whether the former president of Mexico had access to Milton’s works in his formative years. And, in fact, he did.

Duran uncovered documentation proving that Milton’s works were in circulation at Juárez’s school when he was a child and teenager. And while Duran was conducting research for her upcoming book, *Milton and Hispano-América*, an academic colleague also pointed her toward a speech by Fidel Castro, revealing another possible origin for Milton’s influence.

“Then you think, ‘Ah, Fidel Castro received legal education. So did

Benito Juárez. So did José Martí,’ ” Duran said. “Then you start looking at the legal libraries instead of the literary libraries and, lo and behold, that’s where Milton is. So it was creating that network and figuring it all out. I feel like a little detective of the dead.”

As an English professor who specializes in archival research, Duran often needs access to rare, old works that are unavailable online. She went to Mexico looking for material that dated back to the Spanish Inquisition, and she found links to Shakespeare and Milton in locations that can only be accessed in person.

“I had to work from a hunch,” Duran said. “As it turns out, Mexico, in the city of Puebla, has the first circulating library in the Americas, the Biblioteca Palafoxiana. So I had to get to it, and I did find just a treasure trove of stuff.”

Duran’s Fulbright involvement continues even after her research excursion to Mexico. Starting in June 2018, she began serving a three-year stint as a Fulbright Specialist, which makes her available upon request to speak about the settling of the Americas as a subject-matter specialist.

That association has only strengthened Duran’s belief that the Fulbright Program takes its mission seriously.

“My experience of it was they’re not kidding about really trying to promote intercountry human relationships,” she said. “They really fostered that.”



MOROCCO

HISTORICAL PERSPECTIVE STACY HOLDEN

Stacy Holden has long counted Moroccan history and culture among her research interests.

So when she decided to write a book about

American novelist Edith Wharton and the experiences that produced her travel memoir *In Morocco*, Holden knew she needed to return to the country where she spent her first Fulbright excursion 20 years ago.

“I traveled to Morocco in order to research Morocco during World War I, the very start of the colonial era,” said Holden, an associate professor of history. “I am using a trip by the American author Edith Wharton as a jumping-off point for looking at American engagement with French imperialism and colonialism in North Africa during the Great War.

“Wharton supported French imperialism, but other Americans did not. So, her travels in 1917 and subsequent travelogue are really an important way of understanding conversations at the time about U.S. policy in the Arab world.”

Holden traveled to Morocco this spring on a Fulbright Flex grant, which will allow her to break up a six-month stay over multiple trips. After

spending four months in Morocco in the spring, she plans to complete her research there next summer.

She said the country’s Fulbright office is connected at every Moroccan university, providing access to essential research sources.

“Having a Fulbright can really open doors for you,” Holden said. “If the director or assistant director advises you to contact someone, they will make time for you. It can be very helpful to have this Fulbright designation and work through this office.”

Her lengthy stay also allowed Holden to host seniors Scott Strait and Khalil Williams — with assistance from Purdue’s Associate Dean for Undergraduate Education and International Programs — when they visited in March to present alongside Moroccan students at a conference.

“(That was) another benefit of my long-term stay,” Holden said. “They presented research with their counterparts at Abdelmalek Essaadi University in Tetouan and traveled a bit throughout the country, to Tangier, Rabat, Fez, Meknes, and Volubulis. If I had a short-term grant focused exclusively on research, and not also on international exchange like the Fulbright, I would not have been able to facilitate their journey and their introduction to Morocco.”



HONGKONG

EXPANDING KNOWLEDGE FREDERICK ROWE DAVIS

Frederick Rowe Davis is an expert on the history of pesticide use in the United States. So when he spent the 2016-17 academic year at the Chinese

University of Hong Kong on a Fulbright, he naturally wanted to learn about pesticide usage patterns and regulation in China.

He discovered that many citizens of Hong Kong were so concerned about contamination that they preferred to purchase organic produce instead of produce grown in China.

“That was one striking issue, but also more specifically in my research, it was really striking to me that regulation of pesticides in China followed the regulation of pesticides in the United States on a somewhat-delayed time horizon,” said Davis, the head of the Department of History. “For example, the U.S. banned DDT in 1972. China banned DDT in 1983. So I learned that the regulation of pesticides in China is an ongoing process.”

Because of Davis’ background researching and teaching about the history of science, the Chinese University of Hong Kong asked him to incorporate that knowledge into his teaching curriculum in its emerging program in liberal studies. He was impressed by the way Hong Kong universities placed the liberal arts at the center of their educational mission when the opposite was all too often the case back home.

“For me, that was exciting because I’m very aware of the decline of liberal arts in the United States and the ways in which Purdue, through the Cornerstone program and other initiatives, is attempting to reverse that trend,” said Davis, R. Mark Lubbers Chair in the History of Science.



Another unexpected bonus of Davis’ stint in Hong Kong was the opportunity to indulge a personal interest. An avid bird watcher, Davis

discovered that one of the world’s most remarkable wildlife refuges — Mai Po Nature Reserve — existed between Hong Kong and Shenzhen, China. “Mai Po refuge attracts tens of thousands of shorebirds, including a remarkable diversity and number of birds,” Davis said. “So even though it was a lengthy trip from my flat in the New Territories, I tried to go visit Mai Po at least once a weekend to track the spectacular movement of birds through Hong Kong from all along the Asian-Pacific flyway.”

Between teaching, research, and attending conferences, Davis was able to visit a number of countries in the Cross-Straits region — including Hong Kong, Macau, Taiwan, and China — and came away with a better sense of the relationships between these nations and the U.S.

He also returned home with an appreciation for the connections that the Fulbright Program allows participants to form.

“The Fulbright Program created an instant network of past and present Fulbrighters,” he said. “The other Americans who were based in Hong Kong, but also the Hong Kong students and professors who spent time in the United States on the Fulbright Program, it all became part of a larger network. Those interactions while I was there and since were a really great opportunity.”



AUSTRALIA

POETIC PURPOSES MARIANNE BORUCH

Marianne Boruch has dedicated her professional life to creative expression. It seems appropriate, then, that she chose places that would stimulate her artistic sensibilities when selecting locations for her two Fulbright projects.

The Professor Emerita of English spent five months this spring — February through June — working as a Senior Fulbright Scholar in Australia at the University of Canberra. There, she observed the capital city’s plentiful wildlife, including kangaroos, wallabies, birds, and a personal favorite, the platypus, which she described as “the weirdest, most endearing animal on Earth.”

“From this experience, I hope to write a sequence of poems, a sort of neo-ancient medieval bestiary,” Boruch explained. “Of course Pliny got here first with his *Naturalis Historia* shortly before perishing in an open boat under fire and lava at Pompei. But history doesn’t always have to repeat itself in every detail.”

Boruch also spent six months in 2012 teaching and conducting research on a Fulbright excursion at the University of Edinburgh — an experience that helped her finish an acclaimed eighth collection of poems, *Cadaver, Speak*.

Edinburgh, she said, is “home of one of the oldest, most important surgical museums in the world” — an valuable resource since the collection of poems offered ruminations on life from the perspective of cadavers she encountered on a fellowship spent with a medical school anatomy class.

“Just living in that haunted, beloved city was a non-stop delight. To hear English spoken in a whole new way made me think hard about my own use of the language,” Boruch said. “In Australia, the latter is certainly true, as well. If you manage to do something well, you hear, ‘Good on you!’ Or you wait for someone ‘to collect you,’ not pick you up at the corner of this or that street.”

In addition to completing the creative works from her Fulbright trips, celebrating these cultural differences is one of Boruch’s favorite aspects of the trips abroad. As she put it, the opportunities to “observe, question, take notes, write, have long conversations” with those in a foreign country allow participants to “traffic in the unknown and, in many cases, the unknowable.”

“It is a continual astonishment. A cabinet of wonders,” Boruch said. “And isn’t that what scholars and artists live for? The world both familiar and straight — and how we patiently learn to understand at least a part of that connection.”

UNITED KINGDOM

LOCATION MATTERS

WENDY KLINE

One truth about the writing process has become abundantly clear to Wendy Kline during her Fulbright experiences in the United Kingdom:

There is no substitute for firsthand experience.

Kline, the Dema G. Seelye Chair in the History of Medicine, could have covered R.D. Laing and his theories on LSD treatment in an upcoming book simply by conducting archival research. Instead, she went to the controversial Scottish psychiatrist's hometown of Glasgow during a Fulbright trip in the fall of 2018 in search of insight that could only be gained through in-person interaction.

"I went to visit where he worked, where he was born. I talked to people about memories of him being there, and the same for this trip," said Kline, who is on a second U.K. Fulbright trip this fall, now at the University of Birmingham. "I'll be in the area, I'll be talking to people. That will influence the way I write the book because it feels physically different to be in that space rather than just in the lab or the archive or something. I really appreciate that. I think it will make it a better book."

Kline's previous study of psychedelic research had mostly focused on U.S.-based efforts that navigated between dueling perceptions that the drug could be therapeutic versus notions that its use was a risky and

hedonistic practice. As her research continued, she learned of similar experiments by psychiatrists in the U.K.

Her second Fulbright will allow her to learn even more about how attitudes toward LSD treatment evolved.

"I learned about this asylum called Powick Hospital where one particular psychiatrist created what was called the LSD block, where he housed several patients to experiment with LSD therapy," Kline said. "It became extremely controversial, and there was a lawsuit in 2002, and nobody had really written about that aspect of it. The hospital is very close to Birmingham, where my fellowship is, and I've been put in touch with an archivist and a therapist who both know some people in the community who are still around and were involved that I could go interview."

Perhaps she could have made those connections and conducted interviews without leaving West Lafayette, but Kline believes it would have been unlikely. Having a physical presence in the U.K. provided the crucial opportunity to network and explore, thereby strengthening her grasp on the subject matter.

"You have to put your foot in the door and see where it takes you, and you can't do that if you're thousands of miles away," she said. "It's not going to happen."

CANADA

UNLOCKING ACCESS

LEIGH RAYMOND

High-ranking political officials rarely make themselves available to just anyone seeking an interview. When Leigh Raymond spent

the fall of 2018 researching Canada's new carbon pricing policies, he understood that his Fulbright Canada Research Chair in the Sustainable Economy was what helped him gain access to those politicians in Ottawa.

"I was trying to interview some people who were pretty high up in government and the Fulbright position was definitely helpful," said Raymond, professor of political science. "It's a program that is well respected."

Raymond recently completed a book on the political and practical implications involved with putting a price on carbon emissions in the United States, but was not as familiar with the particulars of Canada's policies when he arrived at the University of Ottawa last fall. Over the course of his four months there, he realized it was a perfect place to expand upon his domestic research.

"There's a lot happening in Canada on this issue right now — a tremendous amount — including a federal election that in large part has already been very much about the federal government putting a carbon tax in place, which has gotten a lot of political controversy," Raymond said.

Raymond was interested in studying Canada's array of provincial carbon pricing programs, particularly the ambitious one in effect in

Ontario. He spent the initial portion of his fellowship immersing himself in the policies, building a network of expert sources he could interview as his multiyear research continues.

Raymond views Canada as a test case for international efforts to efficiently and effectively cut greenhouse gas emissions. As a political scientist who studies environmental policy, he is particularly interested to see how the Canadian legal and judicial systems treat these policies moving forward.

"Canada is an important case right now," he said. "I think the future of this kind of policy design globally, a lot is going to matter about how this goes in Canada in the next few years."

Raymond admitted that a research subject can become exhausting for an author who has focused on it so intensively while completing a book, as was the case with his work related to carbon pricing. However, his Fulbright experience in Canada provided an opportunity to study the subject in a new context, which was reinvigorating.

"I have been kind of starting to get going on what's next in terms of following up on my research on carbon pricing in the U.S., but this experience really jump-started that new research agenda," Raymond said. "Talking to all these people about what had happened in Ontario, which actually turned out to be a pretty complicated and interesting story, was really exciting. It was a great way to get reengaged with these important research questions in a new political context."

TAIWAN

RESEARCH OPPORTUNITIES

MARGARET TILLMAN

Margaret Tillman didn't just use her 2017-18 Fulbright experience in Taiwan to finish her first book. She used it to start her second.

She put the final touches on her well-received book *Raising China's Revolutionaries: Modernizing Childhood for Cosmopolitan Nationalists and Liberated Comrades, 1920s-1950s*, noting that the convenient timing made a difference in the publication's quality.

"Definitely being on the Fulbright helped me to be able to devote time," said Tillman, an associate professor of history. "It's a much better book because I was on leave during this final process of revision."

Tillman's research for her second book examined the issues surrounding Chinese standardized testing culture dating back to the abolition of the civil service examination in 1905. It also focuses on the social science involved, including Sino-U.S. efforts to remove cultural biases from the tests.

"Testing culture is very pervasive in East Asian cultures, in cultures that were affected by the civil service exam. And we know this from our students who come to us with a lot of anxiety about testing," Tillman said. "But the civil service examination was technically abolished in 1905. And so the question is, 'Well, how does that testing culture continue?' In a way, it's a bad question because the civil service exam is for bureaucrats and what I'm looking at is the rise of normative, scientific, 'objective' exams for children."

As a Purdue faculty member, Tillman has witnessed some of these anxieties in her own students. At Purdue, 3,313 Chinese students were enrolled in fall 2018 — by far the university's largest international population — so the unintended consequences of testing culture are relevant here, too.

"Part of my motivation for writing the book, actually, is rooted in my experiences teaching here and responding to some of my students' anxieties about not only testing, but also being quantitatively measured in ways that determine their future," Tillman said.

Her 2017-18 Fulbright in Taiwan was Tillman's third experience with the program — actually the fourth if you count the time she spent in China as a preschooler while her father completed a Fulbright there.

She credited Fulbright and other international programs like it for fostering relationships that build trust among nations. She found that to be especially true with Taiwan's Fulbright organization and at Academia Sinica, her Taiwanese host institution.

"Academia Sinica is not a conventional university. It's more like a research institution," Tillman said. "It's an academy with a deep historic tradition to the Republic of China. I would say it's a wonderful place to do your research. They have so many resources, and the scholars there are extremely welcoming. And because they have such a concentration of scholarship in one place, that just makes it a really fertile place for cross-pollination."

GERMANY

ONGOING IMPORTANCE

JEFFREY TURCO

One of the most appealing aspects of the Fulbright Program is the opportunity it presents to experience other cultures.

Three-time Fulbright grantee Jeffrey Turco understands this as well as anyone.

"I regularly tell my students that study abroad is the single-most mind-expanding and life-altering endeavor they can undertake as part of their undergraduate career," said Turco, associate professor of German in the School of Languages and Cultures. "This is no less true for faculty. Fulbright is 'study abroad' for the postgraduate mind."

Turco was fresh out of college when he was awarded his first Fulbright grant, which allowed him to spend a full year in East Germany. He returned to Germany in 2013 on a three-week Fulbright grant for American professors of German. In between those trips, he spent 2007 in Iceland as a Fulbright research grantee at the Árni Magnússon Institute for Icelandic Studies and the University of Iceland.

His research in Iceland led to a long article on Icelandic folklore that later became part of a book. He served as editor of *New Norse Studies*:

Essays on the Literature and Culture of Medieval Scandinavia, which published in Cornell's *Islandica* series and led to his appointment as editor-in-chief of a new Cornell journal, also titled *New Norse Studies*.

These experiences produced connections that Turco has maintained more than a decade after his Fulbright trip to Iceland ended.

"Last year, I was invited back to deliver a lecture at the National Library of Iceland on the Viking 'discovery' of New England — a wholly imaginary, but popular, notion in 19th-century American thought, which held sway over such figures as Longfellow, Emerson, and Thoreau," Turco said.

He has also served as a diplomat of sorts. Turco was recently selected to meet with the German ambassador to the United States and the German consul general for the Midwest to discuss the value of educational collaborations like the Fulbright Program.

"As a professor of German, it's fascinating for me to be part of a history that began with Sen. Fulbright's inspirational idea of using World War II surplus to fund the 'promotion of international good will through the exchange of students in the fields of education, culture, and science,'" Turco said. "Fulbright's beating of swords into plowshares is no less relevant today than in 1945."



STATING THEIR CASE

By David Ching

As a student at Loyola Marymount University, James Mollison became a nationally successful debate competitor without any of the resources available to those at bigger programs.

“Me and my partner were the third-place team in the nation in policy debate and we didn’t have any coaches. We didn’t even have a team,” Mollison said. “It was just me and him, and we were quite successful!”

It makes sense, then, that Purdue’s debate coach is hardly intimidated by flying solo into a debate competition when the opposing team has as many as 10 coaches. The greater challenge is convincing young debaters that they are not at a disadvantage simply because they are outnumbered.

“I might be comfortable in this kind of situation, where I think, ‘They have too many cooks in the kitchen. We can come up with a wily, weird strategy, and we’ll get it done,’” Mollison said. “But a first-year debater might see 10 coaches surrounding their opponents and notice they just have me and their partner, and they

may be intimidated. So, one challenge I face is trying to convey or infect our competitors with the confidence that I feel in that kind of situation.”

That situation exemplifies what Mollison faced over the last year as he worked to broaden a Purdue debate program that for years competed regionally in a single debate discipline into one that competes nationally in multiple events.

It’s a small operation, but he’s getting by on guile as he attempts to recruit and instruct students who can help the program rank among the nation’s best on an annual basis.

“It’s kind of amazing. I didn’t think we’d get this far in a little over a year,” said head of philosophy Christopher Yeomans, who tapped Mollison to help the program grow. “This is all a testament to James’ work. For the money that Philosophy, Communication, and the Peticrew Foundation have put into the program, we have received an extraordinary return on our investment. To have expanded participation in our existing programs while adding two new programs — policy debate and mock trial — in one year is fantastic.”

A RECRUITMENT TOOL

As Yeomans hinted, the Philosophy Department and the Brian Lamb School of Communication have in the last year earmarked funding to help cover travel costs, complementing the endowment that has supported Purdue’s Peticrew Forum for decades. C. Richard Peticrew, a 1936 Purdue graduate and Indianapolis insurance professional, established the endowment after competing in debate as an undergraduate, posting an undefeated record over four years with partner Bob Royster.

While the endowment-supported Peticrew teams were regionally successful through the years, Yeomans and Lamb School head Marifran Mattson — both of whom competed in debate as students — decided to increase its funding in hopes that a nationally recognized speech and debate program could become a valuable recruitment tool.

“There are so many high school students who participate in speech and debate,” Mattson said. “That’s when I started doing it. So it’s a great way to bring high school students to campus and say, ‘We offer speech and debate opportunities here, and Purdue has all these other great opportunities here, as well.’”

To further those recruiting efforts, Purdue will host its first speech and debate camp in the summer of 2020.

“We’re hoping to get to a point like a lot of debate teams where they have a summer debate camp for high school students,” Yeomans said. “The problem is it’s a chicken-and-egg situation. You have to have a team that’s good enough to attract people to come, and then you use the funds that you raise from that summer program to fund your travel and other sorts of things. We’re not there yet, but for what we’ve got, we’re actually doing really well. We’re punching above our weight.”

In the 2018-19 academic year, Purdue substantially expanded its debate lineup. The team went from competing exclusively in parliamentary debate to also fielding competitors in policy debate and in individual events like Lincoln-Douglas debate.

It also added a mock trial team, which is as much a performance as a competition, and evaluates participants on the strength of their arguments. Mock trial teams include as many as 10 members who serve as prosecutors, defendants, and witnesses, compelling Mollison to reach out to the Rueff School of Design, Art, and Performance in search of actors who might be willing to participate.

“There’s definitely a theatrical element that you don’t get in other sorts of competitive speech and debate activities,” Mollison said. “In some individual events, there’s a sort of theatrical element, but there’s not the same degree of teamwork as in mock trial. You can have the best arguments in a mock trial round, but lose because your witnesses are not compelling or don’t make strong emotional appeals.”

VALUABLE COMMUNICATION SKILLS

An aspect of Purdue’s team that might seem somewhat surprising is that it is not stocked with students exclusively from the humanities. There are certainly some of those, but several of Mollison’s top

“MY VISION IS FOR US TO BE EXCELLING SIMULTANEOUSLY IN ALL THE ACTIVITIES WE COMPETE IN AS OPPOSED TO BEING GOOD ONE YEAR IN ONE ACTIVITY, THEN DIALING BACK SO WE CAN SUCCEED THE NEXT YEAR IN A DIFFERENT ACTIVITY.”

— James Mollison





GRADING INDIANA INCLUSIVITY

By Kirsten Gibson



Photos courtesy of C. Richard Petticrew Forum and by Bradley Milstone, Purdue Marketing & Media

competitors are engineers and students in other STEM fields.

As it turns out, those students also see the value in learning to make a compelling argument.

“There’s so much benefit,” said policy debater Daniel Joseph, a freshman from Northbrook, Illinois. “As a computer science major, we’re never really taught to have these kinds of persuasion skills. It’s not really part of the toolset of a CS major, and being able to spend so much time refining that is so helpful. A large part of the CS field is consultancy, and being able to have those communications skills and those persuasion skills is actually something that a lot of employers are looking for, but really isn’t part of any curriculum you’ll find around the country.”

Team member Payton Case said competing in parliamentary and Lincoln-Douglas debate allows him to scratch a competitive itch, while also preparing him for a future as a patent lawyer.

“This has a lot of applicable skills outside of debate itself,” said Case, a freshman from Denver, Colorado, majoring in aerospace engineering. “If you’re a good debater, you’re a better communicator, and it can definitely help you in school. I saw that very early on where I got better at persuading, not only in debate, but also throughout life.”

Joseph predicted that the Purdue team is on the verge of national success, thanks to the addition of several experienced debaters who will join the roster this year. After nearly placing in multiple tournaments in 2018-19, Joseph said the team only needs “one little push, and we’ll be there.”

That is exactly what Mollison hopes to see happen as the program gains a foothold. The intellectual capability has always been present within Purdue students. Now, with increased financial support and a budding recruiting effort under way, Mollison expects to someday see the program become a national contender in every event in which it competes.

“My vision is for us to be excelling simultaneously in all the activities we compete in as opposed to being good one year in one activity, then dialing back so we can succeed the next year in a different activity. That’s frustrating to me,” Mollison said.

“I want us to win in all of them. Instead of being good in just one activity, we should be threatening to every university in every kind of debate and speech. That’s the goal.”

On the Tuesday and Thursday mornings before finals week, Jay McCann’s class, a group of seniors on the brink of graduation, gave out varying grades — C-minus, B-plus, D-plus, A — to city councils, local businesses, and religious organizations.

The students analyzed the various aspects of civic life and how well they served growing immigrant populations in medium-sized cities across Indiana. They asked local libraries if they offered English as a foreign language classes, churches if they offered services in a language other than English, businesses if they sold goods that catered to immigrant populations.

The answer was often, “No dear, we do not.”

McCann, a professor of political science and immigration expert, said he envisioned a senior seminar course that married scholarly research and current events. He wanted his students to use their research skills to dig deep while examining a largely ignored segment of the U.S. population: small- and medium-sized cities.

Ali Udell, a senior in political science, said she called all of the businesses and organizations she could think of that might serve immigrants in a suburban town close to Indianapolis. The results were disappointing.

“The results did surprise me because I expected something more shocking in regards to anti-immigration,” Udell said. “But ultimately it’s an ignorance-is-bliss mentality.”

The story, however, is not the same for every city audited. Frankfort, Indiana, is an example of what a city can do to integrate an influx of immigrants.

Luke Brown, a senior in history and political science, said Frankfort saw its immigrant population increase 100 percent between 2000 and 2010.

“Frankfort is set up for immigrants to get a job, get settled, and eventually create their own jobs,” Brown said during his presentation.

He gave Frankfort an A for its efforts. “I didn’t see any barriers to immigration,” Brown said. “The only way I would lower the grade would be if there was something that took away from the existing inclusivity.”

This plunge into the systems and mechanisms of suburban cities, middle-of-nowhere oases, and industrial spinoffs was a way to show students that the intersection of political science theory and policy doesn’t just happen on Capitol Hill or at their state’s capitol.

“I wanted everyone to keep their social science hat on as we consider what is known about the drivers of migration and social prejudice, or the impediments faced by immigrants when trying to integrate into a democracy,” McCann said.

McCann began the class by taking students back to the 17th century and John Locke, and then to a century ago, when the last great wave of immigration occurred in the United States.

Layni Sprouse, a senior in political science, said she started to re-evaluate her

own status as a citizen and what it meant to her.

“We read John Locke’s interpretations of citizenship and what it meant to be stateless,” Sprouse said.

“Locke said that to be stateless is the worst thing a person can be. It really made me aware of what’s happening around us in Indiana in relation to the immigrant community.”

Without a formal guide for McCann to create the course — there are no textbooks or other pedagogical materials for this purpose — he had to build it piece by piece, incorporating current research on immigration and democracy.

McCann’s initial inspiration for the experimental course came from an unlikely source: bugs.

He adapted retired entomology professor Tom Turpin’s approach to teaching students about the creatures. For each new student, Turpin assigned them a bug and a bug diary.

“An undergraduate who initially had no idea about bugs would really know a thing or two about bugs by the end of the term,” McCann said. “And that’s what I wanted the students to do: Adopt a city and gather extensive data to share.”

“LOCKE SAID THAT TO BE STATELESS IS THE WORST THING A PERSON CAN BE. IT REALLY MADE ME AWARE OF WHAT’S HAPPENING AROUND US IN INDIANA IN RELATION TO THE IMMIGRANT COMMUNITY.”
— Layni Sprouse



A Faithful Partnership

Professor emeritus drives Catholic-Buddhist green housing effort

By David Ching

As someone who has practiced both religions at points in his life, Donald Mitchell is uniquely qualified to serve as an intermediary between Buddhists and Catholics.

The professor emeritus of philosophy has long participated in dialogues between the two faith groups, and more recently undertook what he described as a capstone project in interreligious cooperation. With encouragement from Pope Francis, Mitchell is helping Buddhist and Catholic leaders in New York City, Chicago, and Los Angeles collaborate to develop green, affordable housing properties for those in need.

“These places are going to be permanent,” Mitchell said. “You’re talking about safe homes with social services, job training, et cetera, for hundreds of individuals, families, and elderly couples. Hopefully, it will become a model for other religious groups to work together.”

According to Mitchell — who practiced Buddhism before converting to Catholicism in 1973 — interfaith organizations are not especially unique in major metropolitan areas, but this Buddhist-Catholic venture marks the first time where the Catholic Church is taking the lead in such an effort.

He credited Pope Francis for inspiring this collaboration.

“The expectation is that this will have ripple effects in other parts of the world in terms of the social interreligious projects of the Church,” Mitchell said. “Pope Francis has been encouraging local churches that they need to reach out to the suffering people in their communities and where possible to do it with other

Photos courtesy of Foto @ Vatican Media

“THE EXPECTATION IS THAT THIS WILL HAVE RIPPLE EFFECTS IN OTHER PARTS OF THE WORLD IN TERMS OF THE SOCIAL INTERRELIGIOUS PROJECTS OF THE CHURCH.”

— Donald Mitchell

religions. There is resistance, so these three projects are proof that it can be done.”

In that spirit, Mitchell organized a 2015 delegation of 50 U.S. Buddhist and Catholic leaders who focused on addressing social ills at a conference hosted by the Vatican’s Pontifical Council for Interreligious Dialogue. During their private audience with Pope Francis, he praised them for planting “seeds of peace and fraternity” and encouraged them to find ways to take action when they returned to the United States.

“Pope Francis wanted people who worked in communities to get together and talk. Not the scholars. Not the top bureaucrats. That wasn’t his





idea,” said the Rev. Patti Nakai, resident minister at the Buddhist Temple of Chicago, who attended the 2015 conference. “He felt we could find common ground — that the concern for our communities was a very common concern, so why not join forces and work to benefit our communities.”

As a result of their conversations, the groups identified homelessness and the lack of affordable housing as causes they would attempt to tackle. They made plans to develop energy-efficient, affordable apartments, with the Catholic and Buddhist groups collaboratively offering a variety of services to address residents’ needs.

In New York, Catholic Charities plans to expand the existing Our Lady of Loreto apartment complex in the Brownsville section of Brooklyn. Its 136 apartments will cater to poor or homeless elderly residents in a crime-ridden area that desperately needs safe housing options.

“We are one of the larger affordable senior housing providers here throughout the city, and we’ve participated with other housing providers and surveyed all of our buildings,” said Timothy McManus, vice president of Catholic Charities Brooklyn and Queens. “Out of 26,000 apartments, we found there are over 200,000 seniors on a waiting list to try and access these. It’s an enormous need here in the city. The baby boomers are very quickly aging into this demographic and we try to build as fast as we can, but we find the average senior can wait anywhere from seven to 10 years to just find one of these apartments.”

In Los Angeles, Mercy Housing plans to demolish and then redevelop on the site of a building it purchased at Sixth Street and San Julian in the middle of “Skid Row” — the 50-block area with the highest homeless concentration in the nation. The 95-unit development will house couples, women with children, and homeless residents with special needs.

Mercy Housing is also the developer in Chicago, with plans to renovate and add to the existing Belray Apartments in Lakeview. When complete, the 102-unit property will house single homeless men and single women with or without children. As with the Los Angeles project, Mercy Housing will offer expanded social services to residents that will include programming by Buddhist partners.

“There’s a lot of good DNA in our organization,” said Mark Angelini, president of Chicago’s Mercy Housing Lakefront, a group founded by the Sisters of Mercy in Omaha. “By nature, (the sisters) tend to be very collaborative because, to them, it’s about getting the job done and not having the ego to think that you’re the only one that can get it done. A lot of times, these are very complex issues and people

that have come through very complicated traumas, and so we need to interact and reach out to as many partners as we can.

“As not only a fiscal reality or a financial reality, we could never have a budget big enough to cover all the service needs,” Angelini continued, “but these organizations that spring up — whether it’s a religious entity, a faith tradition, a community health provider — they’ve all come from a similar place. They’re here to help people that have been injured.”

The housing facilities’ available services will include job training, parenting classes, afterschool care, and intensive counseling programs that assist residents who struggle with drug addiction or mental health issues.

In addition, Buddhist partners Dharma Drum Mountain, Higashi Honganji, Tzu Chi Foundation, and Won Buddhism will offer services like tai chi, meditation courses, Asian cooking classes, and even employment opportunities.

“The Dharma Drum community is going to be able to participate in providing some services that are already largely popular with our senior, aging population,” McManus said of the New York facility. “They’ll offer lots of different types of meditation — moving meditation, quiet meditation — as well as yoga and tai chi, which have immense benefits for keeping seniors mobile and flexible.”

As of this spring, the groups had raised nearly all of the \$162 million needed to build and renovate housing facilities in the three cities, requesting the final \$5 million in support from the Vatican as a sign of endorsement.

The New York project should be the first to break ground by the end of 2019, with the others expected to follow in the coming months. As the projects move closer to completion over the next couple years, the religious groups in each city will collaborate to finalize plans at the three facilities.

Thus far, the Buddhists and Catholic leaders have met Pope Francis’ challenge to collectively plant seeds of peace. Once these facilities open their doors to those in need, they will also honor Pope Francis’ hope that those seeds would grow into something large.

“There is a common purpose between the two religions, and this is just an opportunity for us to get together at the organizational level and talk about how we can best leverage our strengths and make sure we can do something together, which could be a great demonstration for others to observe,” McManus said.

“The best we can hope for is that we’re a model — a light, if you will, to be poetic — for other communities to see that we can come together in cooperation to try to tackle a social ill.”





MAN+MACHINE

TO READ FULL-LENGTH VERSIONS OF THE HISTORY 395 STUDENTS' ARCHIVAL RESEARCH PAPERS, VISIT CLA.PURDUE.EDU/THINK

To help commemorate the 150th anniversary of Purdue University and the 50th anniversary of the Apollo 11 moon landing, the Department of History, in partnership with Archives and Special Collections, has offered a yearly series of undergraduate archival research seminars (History 395) since 2014.

We feature excerpts from several student essays in this issue, with the full versions available online. Their work bridges the humanities and STEM education at Purdue, drawing from the students' original historical research from the Neil A. Armstrong Papers, and from their own backgrounds in science, technology, engineering, and math. The Armstrong Papers are a comprehensive collection of more than 450 boxes of his personal and professional documents and items, catalogued in a 364-page guidebook. Two of the students also interviewed Purdue astronaut-alumnus Jerry Ross for their essays.

These works offer a glimpse into Armstrong's exciting life experiences, from his time as an X-15 pilot to becoming the first person to step on the moon. For someone like myself interested in the medical and scientific aspects of Apollo 11, this collection reveals how nearly every aspect of a space mission is shaped by our understanding of the human mind and body in space.

School of Aeronautics and Astronautics student Sam Conkle's *The Near Tragedy of Gemini 8: How Neil Armstrong's First Space Mission Was Almost His Last* shows how quick thinking and ingenuity were crucial in one life-or-death situation. Not only did Armstrong "save the Gemini 8 mission," but he did so by bypassing the well-crafted emergency procedures.

Computer science major Alex Crick studies the Apollo Guidance Computer in *Steering Saturn: It Took More Than a Calculator to Get Armstrong on the Moon*, once again illuminating the importance of composure in critical moments. Crick's analysis shows the complex interactions and interdependencies between the astronaut and the computer in order to ensure a safe and successful mission.

Finally, Jaehyeok Kim, also from the School of Aeronautics and Astronautics, highlights the interplay between human and machine in *Neil Armstrong by the Numbers: Tracing the Small Steps to the Moon*. Here, Kim demonstrates Armstrong's humanity, even with all of the astronaut training that emphasized logic, cool-headedness, and how to "think like a machine."

Introduction by Caitlin Fendley, a Ph.D. candidate in the Department of History, focusing on the history of medicine and science. She has written a study of the Apollo 11 "Quarantine" based on research in the Purdue and NASA Archives, and she is completing a dissertation on population growth, including the visions for space colonies after Apollo.

THE NEAR TRAGEDY OF GEMINI 8

HOW NEIL ARMSTRONG'S FIRST SPACE MISSION WAS ALMOST HIS LAST

By Sam Conkle, School of Aeronautics and Astronautics (Class of 2021)



What was the cause of the dangerous rolls that imperiled Gemini 8 as it docked with the Agena Target Vehicle? Agena's previous problems made it a likely culprit.

Neil Armstrong worriedly instructed crewmate David Scott to turn off the Agena's thrusters, believing they were the source of the problem. After multiple attempts at turning the thrusters on and off, they became more concerned. The roll would stop for a moment and then start back up again just as suddenly as it had stopped. Nothing was working, and the roll was slowly building.

To make matters worse, the crew was out of communications range with ground control, making it impossible to get a second opinion about the problem and any solution.

They were alone. Armstrong and Scott made the decision to undock from the Agena, hoping to stop the spin. Yet this had the opposite effect, jolting the Gemini capsule into a violent, accelerated spin.

It was now clear that the Gemini capsule was at fault. Both pilots were in shock.

Over the past months, all eyes were on the Agena. If something had gone wrong, it was Agena's fault more times than it was not. Armstrong and Scott had extensive training with every error that could occur with Agena, but neither astronaut, nor anyone at NASA, had ever dreamed a problem of this scale would plague the Gemini 8 capsule.

Thankfully, they had flown into communications range again.

"We have serious problems here. We're — we're tumbling end over end up here," Scott radioed to ground control.

Ground had only just regained data and communication with Gemini and were struggling to come up with a solution to a problem about which they had only just learned, using up time the astronauts could not afford to lose.

As they backed away from the Agena, the Gemini capsule quickly gained rotational speed. Scott knew the "chances of recovering from such a high rate of spin in space were very remote."

As the revolutions increased to almost one revolution per second, both Scott and Armstrong began to experience vertigo and blurred vision, and if they did not act soon, they would black out and perish.

Armstrong, running out of options, instructed Scott to try the hand controller that he was just using, making sure it was the hand controller that was problematic

OPERATIONAL REQUIREMENT

— an operation which should be performed. Failure to perform an OPERATIONAL REQUIREMENT may result in incorrect operation of the GAT. However, this incorrect operation will not result in an unrecoverable situation.

As used in the following constraints, an "emergency" is an abnormal situation which endangers the Gemini flight crew or endangers the mission to a degree which exceeds the risk of performing an operation outside the limits of the listed constraints. With each constraint, the pages are listed on which the constraint appears accompanied by an explanation of the cause of the constraint. Unless otherwise noted in the constraint, all constraints are applicable to both the undocked and docked configurations and for control by ground stations or by the Gemini flight crew.

THE AIR FORCE PROGRAM DIRECTOR AND LOCKHEED MISSILES AND SPACE COMPANY RECOMMEND THAT ALL PERSONNEL INVOLVED IN THE OPERATION OF THE GEMINI AGENA TARGET COMPLY WITH THE FOLLOWING OPERATIONAL CONSTRAINTS.

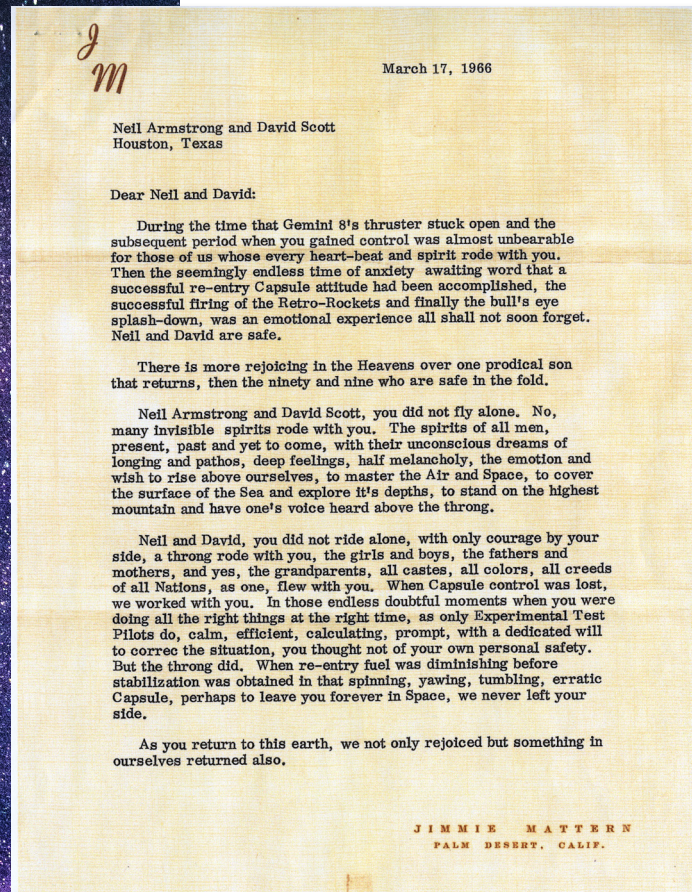
PROHIBITED OPERATIONS

PROHIBITED OPERATION

Firing the PPS in the docked configuration is PROHIBITED in any circumstances including emergencies. Severe vehicle instability may result if this restraint is not observed. (NOTE: This restraint is applicable to the first flight vehicle only; there is no restriction on vehicles 5003 and up.)

Pages 2.2-2, 3.2-21

All constraints in the following list and document dealing with firing the PPS in the docked configuration are invalid until deletion of the preceding PROHIBITED OPERATION.



March 17, 1966

Neil Armstrong and David Scott
Houston, Texas

Dear Neil and David:

During the time that Gemini 8's thruster stuck open and the subsequent period when you gained control was almost unbearable for those of us whose every heart-beat and spirit rode with you. Then the seemingly endless time of anxiety awaiting word that a successful re-entry Capsule attitude had been accomplished, the successful firing of the Retro-Rockets and finally the bull's eye splash-down, was an emotional experience all shall not soon forget. Neil and David are safe.

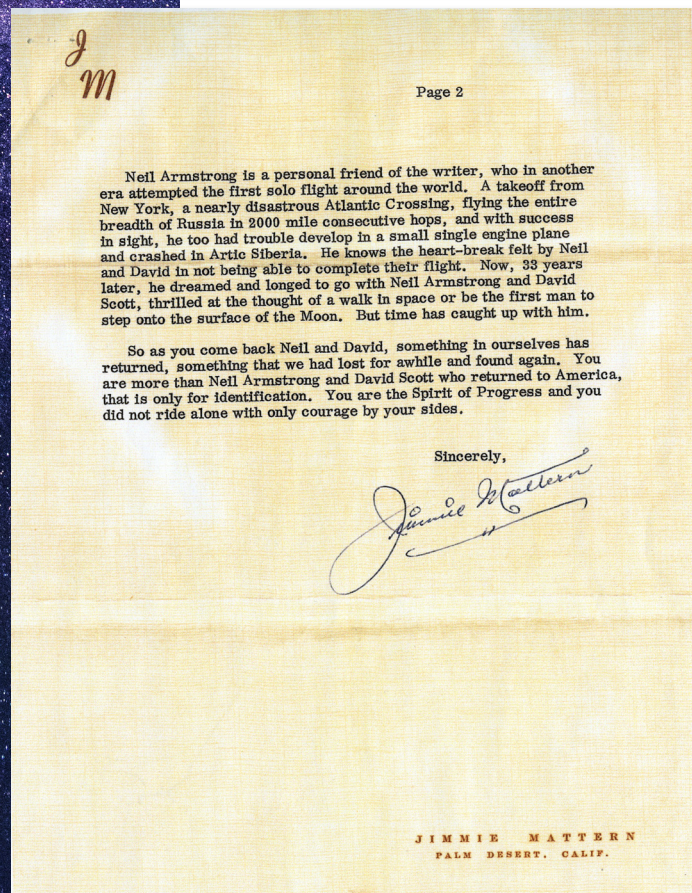
There is more rejoicing in the Heavens over one prodigal son that returns, than the ninety and nine who are safe in the fold.

Neil Armstrong and David Scott, you did not fly alone. No, many invisible spirits rode with you. The spirits of all men, present, past and yet to come, with their unconscious dreams of longing and paths, deep feelings, half melancholy, the emotion and wish to rise above ourselves, to master the Air and Space, to cover the surface of the Sea and explore it's depths, to stand on the highest mountain and have one's voice heard above the throng.

Neil and David, you did not ride alone, with only courage by your side, a throng rode with you, the girls and boys, the fathers and mothers, and yes, the grandparents, all castes, all colors, all creeds of all Nations, as one, flew with you. When Capsule control was lost, we worked with you. In those endless doubtful moments when you were doing all the right things at the right time, as only Experimental Test Pilots do, calm, efficient, calculating, prompt, with a dedicated will to correct the situation, you thought not of your own personal safety. But the throng did. When re-entry fuel was diminishing before stabilization was obtained in that spinning, yawing, tumbling, erratic Capsule, perhaps to leave you forever in Space, we never left your side.

As you return to this earth, we not only rejoiced but something in ourselves returned also.

JIMMIE MATTERN
PALM DESERT, CALIF.



Page 2

Neil Armstrong is a personal friend of the writer, who in another era attempted the first solo flight around the world. A takeoff from New York, a nearly disastrous Atlantic Crossing, flying the entire breadth of Russia in 2000 mile consecutive hops, and with success in sight, he too had trouble develop in a small single engine plane and crashed in Arctic Siberia. He knows the heart-break felt by Neil and David in not being able to complete their flight. Now, 33 years later, he dreamed and longed to go with Neil Armstrong and David Scott, thrilled at the thought of a walk in space or be the first man to step onto the surface of the Moon. But time has caught up with him.

So as you come back Neil and David, something in ourselves has returned, something that we had lost for awhile and found again. You are more than Neil Armstrong and David Scott who returned to America, that is only for identification. You are the Spirit of Progress and you did not ride alone with only courage by your sides.

Sincerely,

Jimmie Mattern

JIMMIE MATTERN
PALM DESERT, CALIF.

Above, a letter to Gemini 8 crew members Neil Armstrong and David Scott from pioneer aviator Jimmie Mattern, March 17, 1966

and not something he was doing. Knowing they could not wait for ground control to come up with a solution, Armstrong had no choice but to activate the re-entry control thrusters as a last-ditch effort to save their lives.

To the crew's relief, the Gemini capsule finally slowed to a stop. The disaster had been handled and avoided, but only just.

If Armstrong had followed emergency procedure and possibly waited for a response from ground control, NASA might have lost two of its best astronauts.

The irony of the Gemini 8 mission is that it exhibited NASA at its worst, and at its best, in a moment personified by the piloting skills of Neil Armstrong.

He had saved the Gemini 8 mission in March 1966, just as he later saved the Apollo 11 mission in July 1969 with a dramatic landing on the lunar surface. He rescued NASA from a potential disaster and ensured its greatest triumph.

In each case, his piloting talents and calm demeanor were on full display, a rare combination of engineering know-how and superb flying ability, always invested in the greater goal of the mission.

One interesting detail about Gemini 8, and an apt commentary on Armstrong's key role, was that he brought with him a token from a former trailblazer of flight: a watch belonging to Jimmie Mattern, one of the first persons to attempt an around-the-world flight in 1933.

Mattern never made it, as a fuel line in his plane froze once he entered the low temperatures above Siberia, and he crashed. The watch represented the drive of pilots to go where no one has gone before. But in the end, it also represented the common bond between two brave yet failed missions: Mattern's and Armstrong's.

Days after the astronauts landed, Mattern wrote a heartfelt letter, recently donated by Carol Armstrong to Purdue University Archives and Special Collections, congratulating Armstrong and Scott on their safe return home.

His poetic words captured just how the world felt about Armstrong through both his Gemini and Apollo years. Mattern said that Armstrong and Scott "did not fly alone," but "a throng rode with you, the girls and boys, the fathers and mothers ... all castes, all colors, all creeds of all Nations, as one, flew with you."

It is fitting, then, that we all flew with Armstrong: the first man to step foot on the moon and the same man who prevented Gemini's first near-disaster.

STEERING SATURN

IT TOOK MORE THAN A CALCULATOR TO GET ARMSTRONG ON THE MOON

By Alex Crick, Department of Computer Science (Class of 2020)

In one of the many simulation runs for the Apollo 11 moon landing, when error codes were generated, ground control had to figure out to "go" or "no-go" — essentially to ignore and continue, or to abort and come back home immediately.

In the simulations, ground control operators looked at the 1202 code's meaning in their notes and saw that it referenced an "Executive Overflow." This error occurred when the Apollo Guidance Computer (AGC) was unable to compute the results that it needed in the time allotted to that specific program.

Operators eventually decided to call a no-go on this error code and the simulation ended. But program leader Gene Kranz discovered that the code was not a major problem if it did not occur frequently, as the computer was able to catch up and continue working as expected.

Armed with this knowledge during the actual lunar descent, ground control knew to keep going and told Neil Armstrong to ignore the code, produced because Buzz Aldrin had left the rendezvous radar on during descent in case the landing had to be aborted.

A small error in the AGC's hardware caused the radar data to take more central processing unit (CPU) time than expected, causing the code to appear. If that particular simulation had not been run, Apollo 11's landing might not have taken place.

The AGC experienced another problem during Apollo 11's descent, when Armstrong looked out the lunar module (LM) window and noticed that the landmarks he was supposed to be seeing were appearing at the wrong time. The AGC had miscalculated.

The site where the LM was heading turned out to be a boulder field. He decided to take manual control of the LM, slowing its descent to almost hovering, and flew across the surface looking for a better spot to land.

Once he found a small landing zone that was clear of debris, he landed the LM and the rest is history.

Something important happened during all of this. The need

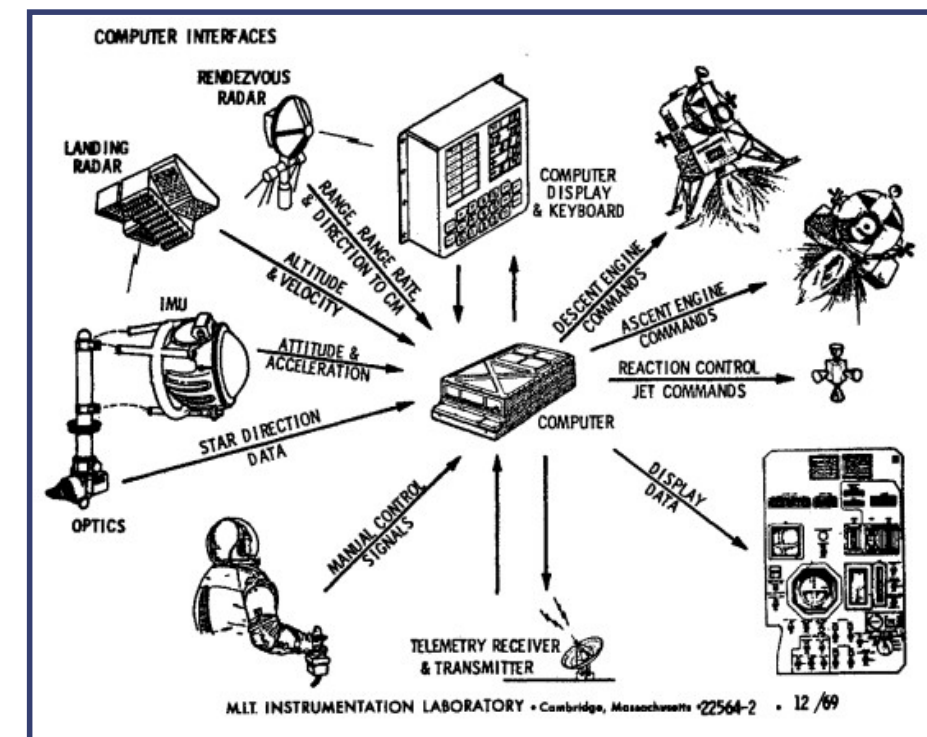


Diagram of Apollo Guidance Computer functions from Eldon Hall's Journey to the Moon: The History of the Apollo Guidance Computer

for an experienced pilot to have the instinct to take over the lunar lander's descent created one of the first instances of a computer-augmented human performance.

When Armstrong took over the landing controls from the AGC, he was just acting as another source of inputs to the computer. No matter what he did, he still was not bypassing the computer and its programs. It was impossible to land the craft while at the same time conducting the many simultaneous and complex AGC calculations, like those relating to the balance of the craft and its orientation to the lunar surface.

So, while he took over the AGC to guide it to a new landing site, he was still at the mercy of the computer doing everything else correctly. Without the AGC, landing on the moon would have been an impossible task.

Both Armstrong and the AGC made it work.

NEIL ARMSTRONG BY THE NUMBERS

TRACING THE SMALL STEPS TO THE MOON

By Jaehyeok Kim, School of Aeronautics and Astronautics (Class of 2020)

Neil Armstrong's humanity stands out during his landing of the lunar module (LM), piloted in tandem with the Apollo Guidance Computer. He was part of the machine, but always human.

At the start, his heart rate never went below 100 beats per minute, the average for a normal human. But it did rise dramatically as he, Buzz Aldrin, and the LM descended to the surface, forming an inverse relationship between his human body and the engine's thrust.

Armstrong's heartbeat spiked up to 120 bpm at 2,000 feet and soon rose to 145 bpm at 1,000 feet. These sudden jumps in his heart rate matched exactly when the computer error codes occurred. Despite all his training and experience, his body still reacted. His heart rate returned to its original state when the Mission Control Center (MCC) ordered Armstrong to ignore the error codes and continue the descent.

His heartbeat continued to rise with a new alarm, about 11 minutes into the descent (102:42 in mission time), with the Low Fuel Quantity alarm.

Despite the intense situation, Armstrong remained outwardly calm. As Armstrong biographer James R. Hansen explained, the indicators were a "distraction that only endangered the landing slightly by prompting him to turn his eyes away from his landmarks."

He might have been worried, but only about the distraction, not about any impending failure. "We were getting good velocities and good altitudes; the principal source of my confidence at that point was the navigation was working fine," he said.

After the "Low Fuel" alarm triggered, the LM passed 160 feet above the lunar surface. With 5% of fuel left or 20 seconds before depletion at the current descent rate, Armstrong had to decide to both save his life and the mission.

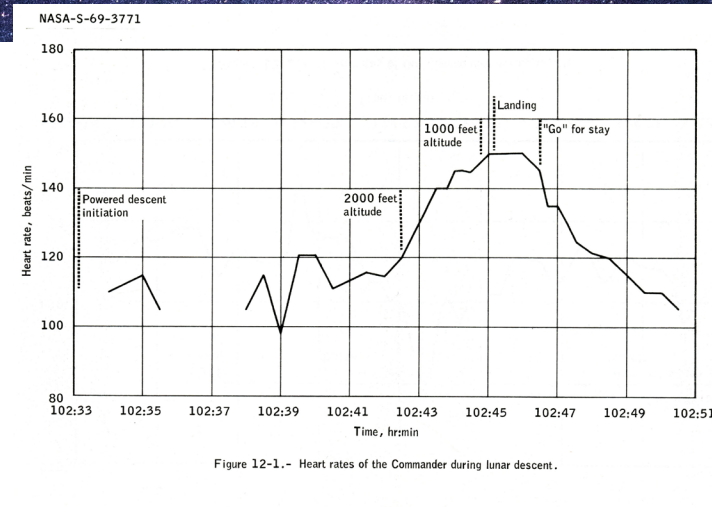
"We were very aware of the fuel situation," Armstrong said. "We heard Charlie [Duke, the capsule communicator] make the bingo call and we had the quantity light go on in the cockpit, but we were past both of those. I knew we were pretty low by this time. But below 100 feet was not a time you would want to abort"

With the desire to succeed in the mission and his skill combined, Armstrong landed safely.

Armstrong's heartbeat reached its peak at 150 bpm about 12 minutes after the descent (102:45 in mission time). This was exactly when he took control of the vehicle to find a new landing site.

Surprisingly enough, at this point his heartbeat stayed constant. With confidence, Armstrong controlled the LM and brought it down to the surface.

The heart rate only began to decrease a full minute after the landing was complete, and finally stabilized after the MCC announced "go" for stay.



Heart rates of the commander during lunar descent, Apollo 11 Mission Report (November 1969)

Until this order was given, he stayed sharp and ready, always focused on the task. "We were not concerned with safety, specifically, in these preparations. We were concerned with mission success, with the accomplishment of what we set out to do," Armstrong said.

How did he do it, and what did the higher heart rate mean? Armstrong's experience as an X-15 pilot offered a clue. Dr. James Roman's medical tests in 1965 — focused on his physiological readings of special tests of pilots during their flights in high-performance aircraft — found that their heart rates reached 170 bpm or even higher.

His conclusion was stunning: The higher rates were more a function of how they took on responsibility and control rather than nervousness or worry. They occurred when the pilots took command of their vehicles, despite their calm and confident appearance.

Armstrong's higher heart rate was evidence of this phenomenon. It increased with the error codes and fuel-consumption issues when the LM was under the control of the guidance computer. But it maintained or decreased dramatically when he took control of the vehicle — at the decisive moment — and was responsible for the mission.

These experiences taught Armstrong to "think like a machine" — to practice processing direct orders from MCC without hesitation and error.

In a recent talk at Purdue, space shuttle astronaut Jerry Ross highlighted Armstrong's "comfortable familiarity" with his piloting skills. "Armstrong was a natural at becoming part of the machine," Ross said. He could "make a plane dance."

Thus, we ought not to forget the human equation in the human-machine complex of the Apollo systems. Machines made the missions a success, but so did the piloting training and experiences of veterans like Armstrong: astronauts with heart.

I'm proud and honored to be serving as president of your College of Liberal Arts Alumni Board. Our board strives to recruit future Boilermakers to the College of Liberal Arts, mentor current CLA students and support their career development, and create meaningful opportunities for alumni to have an ongoing connection and affinity with CLA. We also encourage and advocate to keep liberal arts at the forefront of a well-rounded education at Purdue University and beyond.

Being part of the board allows me to serve our alma mater and give back to the College. Established in 2001, the Liberal Arts Alumni Board Scholarship is awarded annually to CLA juniors and seniors. The board sponsors the Emerging Voice Awards Ceremony for young alumni as well as the Distinguished Alumni Awards Banquet. In addition, we host events throughout the year, including during homecoming. Many of our board members have engaged and connected with students through the CLA Career Center as well as the SCLA300 class.

Like you, I am proud of my liberal arts degree. I graduated from CLA in 1998 with a baccalaureate degree in English education. I learned how to think critically, value and explore multiple points of view, and lead in my community and beyond. My Purdue experience is a central part of who I am as a professional, a parent, an advocate, and a volunteer. My husband and I currently inspire students and families through our work with Golden Educational Consulting, helping high school students and their families as they navigate the college admission and financial aid processes. It's exciting and rewarding to support students on their journey.

Through my work, the value and importance of a liberal arts education becomes increasingly apparent each and every day to me. Our world needs leaders, thinkers, and doers — and the College of Liberal Arts is committed to meeting this need.

I welcome your input, suggestions, and participation in our board and look forward to connecting with you at homecoming!

Hail Purdue,

Bridget Williams Golden
CLA Alumni Board President
Chief Enthusiasm Officer, Golden Educational Consulting

DEAR ALUMNI

FROM YOUR BOARD PRESIDENT



BRIDGET WILLIAMS GOLDEN





CREATING NEW LANGUAGES

By Chris Starrs

Daenerys Targaryen speaks multiple invented languages on *Game of Thrones*, including Valyrian and Dothraki. (*Game of Thrones* available on HBO and HBO NOW)

When Daenerys Targaryen speaks Valyrian or Dothraki on *Game of Thrones*, she might be a made-up character in a fantasy world, but she's speaking languages that are very real.

Such created languages are both fictional and functional, following a longstanding trend in the entertainment industry where linguists develop actual languages that add authenticity to the speakers' words.

Inspired in no small part by the popularity of *Game of Thrones*, *Star Trek*, *Avatar*, and J.R.R. Tolkien's *The Lord of the Rings* and *The Hobbit*, Purdue's English Department now offers a course that uses linguistic creations from fictional works as a teaching device. Students in associate professor Elaine Francis' Inventing Languages (ENGL 215) course were asked to design languages of their own, complete with grammar, sound and writing systems, and a dictionary.

"One of my colleagues, Professor Shaun Hughes, is a Tolkien scholar, and he had the idea of creating a course around invented languages, because the Elvish languages are really big in *Lord of the Rings* and that series," Francis said.

"He had also had heard about it as kind of a fun

course that other universities were starting to offer. So we looked into it, and I did some research and found a bunch of colleagues in other universities that had similar courses. I talked to some of them about it, and it went from there."

Francis said invented languages — including Na'vi (from *Avatar*) and the tried-and-true Klingon (from *Star Trek*) — are common in various forms of entertainment, from books, to TV, to film. Meanwhile, languages such as modern Hebrew, Loglan, and Esperanto were created for more practical purposes.

"We started out reading some book chapters that go over the history of invented languages, like what were some of the motivations?" Francis said. "Not all of them are for fiction. Some languages were created for international communication, like Esperanto, for example. Some of them were for creating a more perfect language that wouldn't have any ambiguity — Loglan was like that. There are a bunch of reasons.

"I think the most successful case of an invented language is modern Hebrew. It was constructed on the basis of texts from earlier forms of Hebrew, so that the Jewish people in Israel, who had migrated from different places, could have a common language. It actually took off and was successful.

Now there are about 5 million native speakers of modern Hebrew, whereas there weren't for a long time."

Francis said that the project-based course found favor among its 20 students.

"I think the students are (embracing it)," she said, adding that the course will be taught again in spring 2020. "Some of them are more keen on it than others, but they're all getting into the idea you can make your personal language and can make it unique and you can draw various unfamiliar features from real human languages and kind of put them together in a new way. I think they're pretty enthusiastic about it."

Leah Criss, a freshman from West Lafayette, Indiana, majoring in English Language in a Global Context and linguistics, had previously worked on her own language, but had not made much headway before she learned of Francis' class.

"It sounds simple, but then it gets monumentally complicated," said Criss, who created the language Kynthyar for a world that splits into five sections, each with its own lexicon. "For me, this course would have been more difficult if I had not had some linguistics background, but it's still pretty doable because you get a lot of help as you go through it."

Self-professed Tolkien junkie Helen Coats said she thoroughly enjoyed the class and agreed that inventing a language was an extensive endeavor.

"It's excellent — I love the class, and Dr. Francis is a great teacher," said Coats, a junior from Rock Hill, South Carolina, majoring in English and minoring in French. "The nitty-gritty

aspects of the language — how morphology works and how allophone works ... and things like that are so complex. I knew that going in, but it's amazing all the elements that come together to form a language and your understanding of that. It takes a lot of time to understand how the concepts work and how to apply them to your own work."

Like her fellow students, Coats invented a language out of thin air. She calls it Mynzdavo, or "Time Language." Her inspiration for Mynzdavo relates to her background in Indo-European language study.

"A lot of my language is based grammatically more on French because I'm more familiar with that, but I also don't want it to be a French copy," she said. "So I also take things from other languages like English, French, and Latin that all have nominative alignments in terms of how cases work.

"I also decided to borrow from Hindi and other languages and use an ergative absolutive alignment, which is very different and messes with grammar, and helps it not be a

“A LOT OF MY LANGUAGE IS BASED GRAMMATICALLY MORE ON FRENCH BECAUSE I'M MORE FAMILIAR WITH THAT, BUT I ALSO DON'T WANT IT TO BE A FRENCH COPY.”

— Helen Coats



Frodo Baggins and his cohorts speak the invented Elvish language in the 2001 adventure film *Lord of the Rings: The Fellowship of the Ring*. (Licensed by: Warner Bros. Entertainment Inc. All Rights Reserved)

French or an Indo-European language copy. It has its own flavor.”

Criss has studied German for six years, French for two years, and started familiarizing herself with Chinese this year. She said her invented language includes aspects of what she has studied before.

“French doesn’t necessarily turn up, but German is an influence on my sound system,” she said. “I took Chinese because I like the grammar of Chinese, so some of that made its way in. It’s kind of a combination of English, German, and Chinese.”

“I would say that most of the students — the ones who are doing fictional worlds — have come up with something really different from other authors, so I’m sure they’ve read about these other fictional worlds, but they seem to be doing it in their own creative way,” said Francis, who also required students to concoct a backstory for their language.

In-class collaboration was key for Criss and Coats. In addition, Coats said an important source for her project was the book *The Art of Language Invention* by linguistics expert David Peterson, creator of languages for *Game of Thrones* and other TV programs and movies.

“We look at each other’s progress in terms of lexicons and collections of vocabulary,” Coats said. “It’s really nice there are people with different levels of experience in linguistics and some who have more experience than me. Those people have been helpful to me if I do something I think sounds cool, but they explain to me why it might not actually develop like that for various reasons. It’s very helpful.”

Francis, director of Purdue’s Experimental Linguistics Lab, laughed when asked if she invented a language of her own in the spring.

“What I’ve been working on is a big set of notes on language typology, which is the study of how languages around the world differ from each other and how they’re similar,” she said. “That’s what I’ve been teaching the students — about the whole range of variation of the world’s languages and how they might make use of that in creating their own language.”

“The short answer is, ‘No, I have not invented my own language yet,’ but I’ve been trying to put together a lot of materials for the students to draw on. Next time I teach it, I’ll spend less time preparing all the materials and will have more time to do something. Maybe when I teach it again next year, I’ll be able to do that.”

An Introduction to Mynzdavo

Mynzdavo is a language spoken by a dystheistic group of humanoid fantasy creatures called the Iləmynzdəmi (translation: the people of time). Humans call them Enkanterers.

Humans and Enkanterers used to be the same race, commonly referred to as “The People,” until the creator god (Iləsonimynzdo), offered them the gift of magic. He told them that if they chose to accept his gift, they would also have to accept his conditions — that they were not to be told when they would receive the magic, to what degrees, and how it would affect them beforehand.

The People could not agree on how they were to take this offer and so split into different camps. One group accepted all terms. Another said they preferred the idea of communing more closely with nature than the idea of receiving magic. One thought it was a trap and didn’t respond at all out of fear. And the last group, the Enkanterers, said they wanted magic, but only if they could have immediate access and know everything about it beforehand. The four groups became four different races, all with their wishes granted.

— From Helen Coats’ explanation of the Mynzdavo language

Vocabulary and Sentence Examples

myndzda: time

libæ: day

kril: night

vo: to use

ly: head

ilə: people

ilamynzdem: Enkanterers

y: to live

ʒək: to die

dy: life

maɾe: sir or ma’am

ɾək: to eat

menəm: food

Onotɾək.

On-ot-ɾək.

I-ABS-eat.

I eat.

Onotko.

On-ot-ko.

I-ABS-go.

I go.

Otko.

Ot-ko.

ABS-go.

You go [2nd person formal implied]



LANGUAGES OF BUSINESS

By Chris Starrs

Business is frequently conducted on the global stage, which makes having a familiarity with multiple languages and cultures much more than an edge — it’s practically a necessity. The School of Languages and Cultures helps fill that need for Purdue students through its professional language courses.

The school offers more than a dozen professional/specialized language options, ranging from Business Arabic, to German for Science and Engineering, Business Russian, and Spanish for the Health Professions to name but a few. Also available are a certificate in German for Specialized Purposes and minors in Business French and Spanish for the Professions.

While the growing industry appetite for these skills is a relatively recent phenomenon, the University has offered many of these professional

language courses for decades.

“These classes have definitely taken off in popularity in recent years, but business languages were already being taught at Purdue when I came here in 2002,” said Jen William, professor of German and head of the School of Languages and Cultures. “Some of the languages — like French, German, and Spanish — are quite well-established in the area of Languages for Specific Purposes.”

William credited Christiane Keck — a former German professor, head of the then-Department of Foreign Languages and Literatures and founder and editor of *Global Business Languages* — with spearheading both Global Business Languages and the school’s development of professional language courses. William added that while interest in these programs has always been healthy, its reach is expanding.

“At Purdue, we’ve seen an uptick in interest in our classes in languages for professional purposes,” she said. “It’s a very good fit here at Purdue for students with very practical career ambitions. Students see that learning a language, whether it’s the business and scientific language classes or any kind of language classes, pairs well with any major and makes students more marketable, especially in the global economy, for those wanting to work abroad or for an international company.”

Cecilia Tenorio, who in the spring semester taught Spanish for the Professions as well as Translation and Interpreting, can attest to the emerging popularity of the school’s offerings. She said that just four students signed up when the minor Spanish for the Professions was introduced in 2017. This year, that number exploded to 87 students from a wide variety of majors.

“Some of these courses have been offered for at least 15 years,” said Tenorio, who added that perhaps the biggest area of interest for students in professional Spanish is health care. “What is new is that now we offer a minor for professional training in Spanish. We are ahead of many universities; there are few programs in this area, so we are trying to establish ourselves as one of the leaders.”

With a goal of strengthening its program, the school created a Languages for Specific Purposes committee, co-chaired by Tenorio and Marc Rathmann, a continuing lecturer in German.

“We have put together a website for LSP at Purdue, which lists all our courses, offers resources and students’ testimonials,” Tenorio said. “We want to put an effort into creating more options for students. We are working to add experiential learning opportunities, such as internships and service learning, because students love them and they are very helpful in preparing them for their future.”

“We want to make the classes more known throughout the University, and we have created a website to try to get more students interested in Languages for Specific Purposes, because sometimes the problem is students don’t really know what classes are out there,” added Rathmann, who in the spring taught German for Science and Engineering and Business German. “We actually went to the business school and met with the advisers this semester. It’s important to get the word out that we have these classes.”

Rathmann also said creating a harmonious relationship among the school’s 14 different language offerings — which grows to 15 in the fall with the addition of Korean as a pilot program — is one of the chief goals of the Languages for Specific Purposes committee.

“There are so many different languages in

the School of Languages and Cultures,” he said. “We haven’t always coordinated well between the languages we offer. We just want to try to coordinate more and get more input from other instructors and the other languages.”

With thousands of students taking language courses and seeking majors, minors, and certificates, it’s clear they recognize the value of taking language and culture classes that broaden their horizons and provide an idea of the business environment they hope to join.

“Engineering stereotypes — usually we’re not good with talking to people,” said Drew Henson, who graduated in May with a degree in chemical engineering. “This helps people branch out and be a little uncomfortable at times so that they can be comfortable later. It’s super-important to develop these thinking skills to solve problems that sometimes require innovative thinking.”

Henson, who has taken Spanish classes since high school and is also learning Russian, has taken a number of classes taught by Tenorio.

“Professor Tenorio’s classes are a lot more challenging than typical Spanish courses I’ve taken,” he said. “It’s actually a lot more enjoyable because she pushes you to go further in your language development. It’s not your standard homework. You get real practice with it.”


And some courses — like Tenorio’s class on Food and Culture in the Hispanic World — speak to a student’s taste buds.

“I love the class so much because it’s longer than a normal lecture — about 75 minutes — but it’s so much fun that time just seems to fly by,” said Nudhar Bhuiya, who graduated in May with a degree in health science/pre-profession and a minor in Spanish. “There are so many things we’re learning about each country and its cuisine. It’s really nice. They eat a lot of meat in Argentina and have lots of different kinds of barbecues, so that’s on my list to try out whenever I get the chance.”

Another course Bhuiya found compelling was Spanish for Health Professions, which she said informed her on “how to deal with people from different cultures in a health care setting.”

“It was a worthwhile class because I’m starting medical school in the fall, so it was very helpful to learn the vocabulary because I want to be able to communicate with patients who can’t speak English that well,” she said. “I felt it was extremely valuable to learn about the very specific vocabulary that’s involved.”

In an interconnected world, understanding other languages and cultures provides a distinct advantage. And, to that end, the School of Languages and Cultures is dedicated to making sure that when they graduate, Purdue students are able to talk the talk.



LIVING THE DATA LIFE

CONNECTING LIBERAL ARTS AND STEM UNDER ONE ROOF

By Eric Butterman

Data is often called a language — one that few people speak well. On the other hand, those who are proficient with data and technology might not be as effective when it comes to writing a report, giving an oral presentation, or speaking a foreign language.

What if we could change that? The Data Mine project envisions creating a living change — literally. Part of Purdue’s Integrative Data Science Initiative, the learning community will pair STEM and liberal arts students to live together. They will attend many of the same classes to see what happens when students from differing disciplines intermingle.

How connected will the living space be? Down to the office hours in the residence hall, with community members eating dinners, attending seminars, and participating in social activities together.

“So often people in similar majors just stick with each other when it comes to sharing ideas and influencing each other for their future work,” said professor and head of philosophy Christopher Yeomans, a Data Mine team member since its first funding proposal. “But you don’t always grow as much as possible that way. Here, these students could be a support for each other academically, creatively, and even share their problems.”

The Data Mine is an expansion of the college-within-a-college living community concept utilized by thousands of Purdue students. The University cites several benefits of residential learning community participation, including stronger connections with professors and classmates, a broader learning experience, and improved chances of academic success.

More than 20 learning communities, with a total population of approximately 700 students, will live

in Hillenbrand Hall this fall as part of the Data Mine project. The learning community participants will come from academic units across campus — all with the goal of training students in data science and equipping them to find solutions to real-world problems.

LIBERAL ARTS CONNECTION

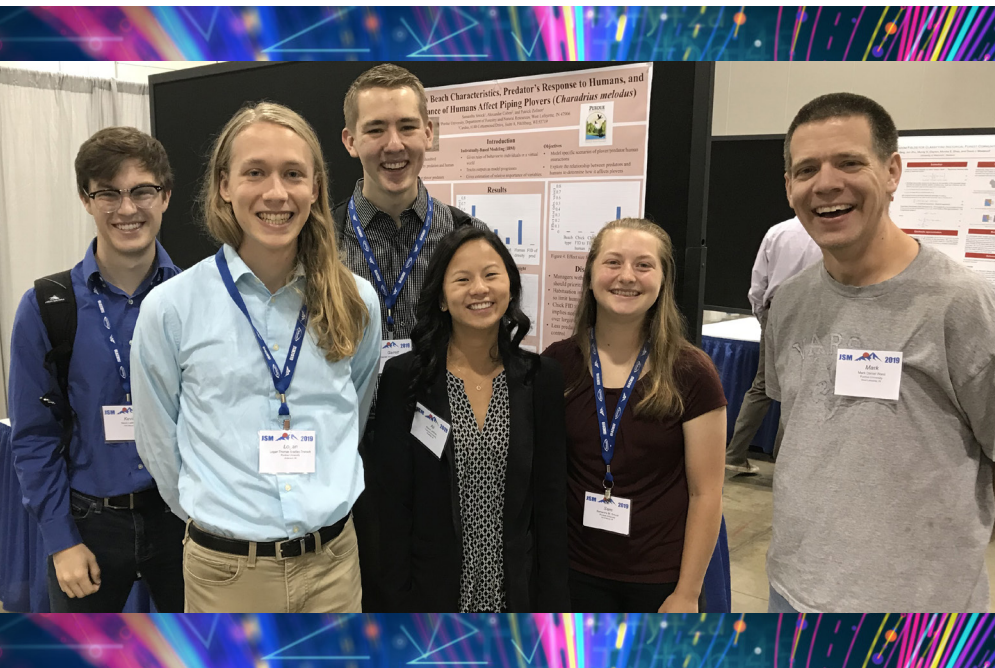
Although the learning communities are open to students from any discipline, four have direct liberal arts ties.

The Liberal Arts learning community will feature significant influence from the Philosophy Department. Philosophy instructors will teach a course that covers critical thinking concepts on the limits of big data, as well as a data visualization course that incorporates geographic information system (GIS) data to track travel routes in *The Aeneid* and *The Odyssey*.

In the Political Science community, professors Jay McCann and Eric Waltenburg will teach introductory U.S. politics and political analysis classes that will also collaborate on a data project.

The Department of English is connected to the Analyzing Digital Gaming and Culture community, with residents taking the English 280 course, Games, Narrative, Culture.

Finally, the College of Liberal Arts’ Department of Anthropology and African American Studies program collaborated with the Honors College and Purdue Libraries on the Critical Data Studies community. With direction from Kendall Roark, assistant professor of library and information science and a courtesy faculty member in anthropology, the Critical Data Studies community will work to create tools and methods that help scholars engage with the public about data science’s societal role.



Students from the Statistics Living Learning Community with Data Mine director Mark Daniel Ward at the Joint Statistical Meetings conference in Denver. Photo courtesy of Mark Daniel Ward.

“WHAT WE HOPE IS THAT WHETHER A STUDENT GOES OUT INTO AGRICULTURE, NURSING, OR SOMETHING ELSE, THEY CAN NOW BE A HELPFUL LEADER IN TERMS OF UNDERSTANDING APPLICATION AND IMPLICATIONS OF DATA.”

— Christopher Yeomans

Finding between 23 and 27 students to participate in each of the communities was, relatively speaking, the easy part. The tougher issue was assembling a curriculum, said Data Mine director Mark Daniel Ward, a professor of statistics.

The challenge was to select subjects that would pull everyone together for discussion and exploration.

For example, organizers of the Liberal Arts learning community participated in a healthy debate before ultimately selecting courses such as Critical Thinking; Philosophy of Data; Statistics and Society; and SCLA 101: Transformative Texts I, the first course in the Cornerstone Integrated

Liberal Arts program curriculum.

In the spring, students will take Ethics in Data Science in the first eight weeks, along with the second level of Transformative Texts, SCLA 102. Students will also have the option of taking Ethics for

Technology, Engineering, and Design.

“We don’t see any optional courses as likely being a problem,” Yeomans said. “Remember, this whole project was optional. The idea is to have all of these students working together so they could understand different modes of thinking and see how they extend in data concepts, learning statistical techniques, and bring them into liberal arts. The question: Over the course of the year, can we build that bridge between all these students?”

SOMETHING TO TALK ABOUT

Ward is excited for the opportunity to teach this mix of learners, with about half of the Data Mine participants coming from the freshman class.

“I can’t wait to hear the kind of debates that come up,” he said. “We may hear the kind of back-and-forth which has been so rare for corporations and universities across the world.”

However, the Data Mine doesn’t exist simply to open minds. Its purpose is also to open career opportunities.

“I think we’re all guilty of having a narrow view of what to teach — it’s just as true of liberal arts and the STEM fields,” Yeomans said. “A lot of data and tech is about the startup culture, where the point is to disrupt and produce something dramatically new. Whenever you do that, you can be looking at areas you may not fully understand, particularly the consequences to society.”

“There are institutional factors, and there’s a real awareness both in liberal arts and in STEM that issues need to be explored for change. This is a service, but it also means jobs. We already see technology surrounding itself in these questions more. Those who can understand technology and the concerns that go with it have a chance to be extremely valuable.”

Right now, there is only a one-year commitment to the program, but the leaders are optimistic about its future.

“We don’t expect, say, every liberal arts student now will necessarily go on to become a data scientist,” Yeomans said. “What we hope is that whether a student goes out into agriculture, nursing, or something else, they can now be a helpful leader in terms of understanding application and implications of data.”

“You could have been a philosophy major and may be more likely to say, ‘OK, this may be popular, but what will this technology do to children? To everyone?’ Many times we don’t know the answers. But, then again, not enough people have been asking the questions.”

Artistic Legacy

LAURA ANNE FRY: Purdue University Professor, Inventor, and Champion of Women Artists

From 1890 until she retired in 1922, Laura Anne Fry developed an arts curriculum that, as Judith Vale Newton and Carol Ann Weiss assert in *Skirting the Issue: Stories of Indiana’s Historical Women Artists*, attracted “so many students to the art department and the university as a whole that [Purdue’s] enrollment outnumbered their primary in-state competition, Indiana University.”

A ceramicist, woodcarver, chemist, and entrepreneur who designed pottery for Rookwood in Cincinnati prior to arriving at Purdue, Fry taught Boilermakers when the Arts and Crafts movement — and American Art Pottery especially — reached the zenith of international renown.

“The fashion for art pottery lasted just a short while — from the 1870s until just after World War I — but it became so popular that it was manufactured in the United States. Several serious and innovative potteries were founded in that period, the largest and most famous of which was the Rookwood Pottery of Cincinnati,” noted Carol Prisant in *Antiques Roadshow Primer*.

Together with St. Louis’ Scott Joplin ragtime piano, Chicago publisher and editor Harriet Monroe’s *Poetry: A Magazine of Verse*, Frank Lloyd Wright’s prairie homes, Louis Sullivan’s steel-frame skyscrapers in Chicago and St. Louis, and Wisconsin-born Gustav Stickley’s Mission-style furniture, Rookwood ceramics placed Midwestern culture on the world stage in the late 19th and early 20th century.

As we celebrate our sesquicentennial, it is appropriate to remember Laura Anne Fry, a prominent artist and faculty member when Purdue was young. To learn more about her life and work, I contacted Laura F. Fry. Besides her role as senior curator of art at Tulsa’s Gilcrease Museum, and author of a master’s thesis on Laura Anne, Laura F. Fry is also the great-great-niece of her namesake and her family’s unofficial historian.

— Daniel Morris, Professor of English



Earthenware with various glazes, ca. 1882. New York Metropolitan Museum of Art Collection, Mary Ellen Ball Gift.

FOR MORE INFORMATION, VISIT DATAMINE.PURDUE.EDU

Q: Please respond to the following passage about your ancestor that appeared in Robert W. Topping's *A Century and Beyond: The History of Purdue University*:

Another early faculty member in the [Purdue President Winthrop E.] Stone administration was Professor Laura Anne Fry. Though she had none of the conventional degrees, Professor Fry was an extremely talented New Yorker who had been a pupil of William H. Fry in wood carving, William Chase in painting, Kenyon Cox in drawing, and Lewis T. Rebisso in sculpture. She lived in Ladies Hall, the name given to what had been known originally as the Boarding Hall and what had become essentially the woman students' residence.

Why do Purdue histories emphasize Laura Anne Fry's training with male artists, and why is Fry incorrectly listed as a "New Yorker"?

A: In 1890, Laura Anne Fry became a professor of

industrial arts at Purdue University. She was 33 years old, a leading American ceramic artist, inventor, and teacher. She had helped found the American Art Pottery movement in Cincinnati in the 1880s, had shown her artwork in national exhibitions, and had earned a U.S. patent for a new spray technique of applying glaze colors to pottery.

Fry was a successful professional artist in an era when women were actively discouraged from pursuing any profession at all. However, Fry's art career also laid bare the gender biases of the late 19th century. Through personal experience, she fully understood that American society tended to value men's work far more than work by women, and as a result, Fry became a fierce advocate for her fellow women artists.

Although she had no formal college degree, Fry's varied training and professional experience qualified her to teach at a university level. While she had studied art with several female artists and started her art career in Cincinnati, in Purdue's *Debris* yearbook Fry instead listed her training with male artists and noted her membership with the Art Students' League of New York — perhaps recognizing that these qualifications would earn greater respect from the academic community.

As a result, a Purdue historian in 1988 incorrectly assumed that Fry was a "New Yorker" when, in fact, she was born in Indiana and spent the vast majority of her life and career in Indiana and Ohio. Today, I hope to set the record straight for my own great-great-aunt and namesake.

Q: What role did Laura Anne Fry's family play in fostering her arts training and supporting her art career?

A: Like many women artists from across Western art history, Laura Anne Fry was first

introduced to art through her family. Her father, William Henry Fry, and grandfather, Henry Lindley Fry, provided her earliest artistic training and encouraged Fry to pursue a professional career.

Henry and William were both trained as woodworkers and cabinet-makers in England, and both embraced social reform issues and were members of the Swedenborgian Church — a noted denomination for many 19th-century intellectuals. They emigrated from England to Cincinnati in 1850, where they established a woodcarving studio and eventually a woodcarving school in the 1870s.

Most of their students were women, and the Frys actively supported women's rights in the late 19th century.

Laura's family recognized and encouraged her early artistic talent. Her father and grandfather trained her in woodcarving, following design principles established by the English Arts and Crafts movement — seeking inspiration in the natural world and in a variety of historical styles, and prizing hand craftsmanship over industrial mass production.

Although she had nine siblings, she became the only one to pursue a professional career in the arts with the full support of her father and grandfather.

Q: Laura, your namesake led the industrial art department at Purdue when the Arts and Crafts movement and the American Art Pottery movement were at the height of their national and international prominence. Why were decorative arts products (such as Rookwood Pottery) a critical element of the Arts and Crafts movement? How did women artists affect the Arts and Crafts movement, and how did 19th-century understandings of gender roles affect Fry's art career in particular?

A: If I may, I've never liked the term "decorative arts" because it sounds so insubstantial — it devalues art that was traditionally made by women and is a very Euro-centric concept. Artists in other areas of the world generally do not draw a hierarchical distinction between painting and ceramics, for example. However, the term remains commonly used today to refer to "utilitarian" works including ceramics, woodworking, silver, glass, and textiles.

The Arts and Crafts movement initially emerged in England and the United States in the late 19th century as a response to the increasing industrialization and uniform mass-production of modern life. Rapid industrial growth gave rise to crowded, unsanitary boomtowns with poor living standards — a familiar setting from Charles Dickens' novels.

As a reaction against the negative impacts of industrialization, Arts and Crafts leaders such as William Morris in England encouraged a return to creating individually handcrafted household products — today often referred to as "decorative arts." Morris promoted handcrafted items as a positive influence on society, a means for arts to contribute to fulfilling, everyday work.

Many Arts and Crafts makers were women, some creating items for their own households and some forging incomes and careers working with textiles, metalsmithing, ceramics, and other media.

In the United States, small pottery companies like Rookwood Pottery in Cincinnati followed the ideals of the Arts and Crafts movement and emphasized the handcrafted, individual creativity of each item — inviting artists to sign each piece and promoting their pottery as a high art form. Laura Anne Fry became one

of the earliest employees of Rookwood in 1881.

While most women in the studio were employed as pottery decorators, Fry also experimented with new glazing techniques and ultimately invented a new method of spraying underglaze colors on pottery with an atomizer. Her male supervisors initially scoffed at her invention — but nevertheless she persisted.

In the end, Fry's atomizer technique provided Rookwood with new blended colors that helped propel the pottery to international fame at the 1889 Exposition Universelle in Paris. That same year, she was awarded a U.S. patent for an "Improvement in the Art of Decorating Pottery-Ware."

While Fry's invention undoubtedly contributed to Rookwood's rise to fame and increased profitability, the manager of Rookwood Pottery was reluctant to recognize her distinct impact on the pottery's success. He refused to honor Fry's patent, and, in 1892, she sued Rookwood Pottery for patent infringement. The lawsuit split the Cincinnati art community in two, with several prominent artists, art dealers, and museums taking sides in a debate around the business of art.

None other than Judge William Howard Taft issued a final opinion in the case in 1898 — in Rookwood's favor. Fry had fought for years to protect her idea, likely hoping that licensing her patented invention could contribute to her income and potentially give her the means to begin her own studio.

Perhaps in response to her own struggles for credit and professional recognition, Fry continued to avidly support other female artists. In her writings and public lectures, she championed women who spearheaded new developments and experiments in American ceramics, raising amateur "decorative arts" into a professional art form.

Q: How does Laura Anne Fry's legacy of working with Rookwood and American ceramics resonate today?

A: In tandem with other ceramics artists in the late 19th century, Fry's efforts to raise pottery to a high art form helped influence the founding of the earliest university programs for ceramic arts in the United States in the 1890s. Today, spray booths can be found in any well-equipped ceramic studio, and many contemporary ceramic artists continue to utilize a similar technique to Fry's patented "improvement" in decorating pottery.

Fry's efforts to support her fellow artists continue to impact the Lafayette community. In 1909, she led the founding of the Lafayette Art Association to provide a venue to exhibit and collect work by local and regional artists. She led the organization until 1924, and it became the basis for the Art Museum of Greater Lafayette.

Like many women today, Fry simply sought equal recognition for her work. Her struggle to earn recognition for her own ideas continues to resonate, as women still strive to earn equal pay for equal work, and for equal representation in leadership roles throughout education, business, government, and the arts.



Laura Anne Fry's paint box, ca. 1880s. Lisa Unger Baskin Collection, Rubenstein Rare Book & Manuscript Library at Duke University.

Glazed earthenware vase, 1883. 2013 Brooklyn Museum exhibit. Photo by Daderot.



Franciful Footwear

By Kirsten Gibson

INDIANA NATIVE BRINGS SHOE DESIGN TO THE 21ST CENTURY

Chris Francis used to jump trains and shine shoes. He traveled the United States extensively using this economical technique, but decided to settle down in Los Angeles as moving about by train grew more difficult. There, Francis began to dabble in making clothes, eventually turning to one of the most critical aspects of the wardrobe: shoes. However, his path toward becoming a celebrity shoe designer, praised by the likes of *Vogue* magazine, was not a series of steps along a straight line. While the Kokomo, Indiana native's core identity as an artist was always apparent, the timeline of his development as an artist and designer is much more complex.

"When I met Chris, I made two very important decisions," said Jim Sondergrath, Francis' high school art teacher. "One was to get him into the art department at Kokomo High School, and the other was to get out of his way and watch him soar."

And soar he did. Today, Francis makes custom shoes for the likes of country music legend Dolly Parton, and his creations were featured in a solo exhibition at the Craft & Folk Art Museum in Los Angeles.

Francis' shoes will make their Purdue debut this fall, with the exhibit *To-The-Last: 21st Century Shoe Designs* set to run from Oct. 21 through Nov. 15 at the Patti and Rusty Rueff Galleries in Pao Hall. Francis will also visit campus in early November to give a workshop and talk.

Many people are solely concerned with the functional aspects of their footwear. Shoes are to hike in, to keep toes protected on the factory floor, to run in, or to allow wearers' feet to breathe on a hot day.

For others, shoes are a matter of function and form. Dolly Parton can't, for example, throw on a pair of Keds and call it a day, nor can a member of legendary punk rock group the Sex Pistols.

Performers such as these must be able to make a statement when they cross



"Super City Boot" (2018), suede, hand-painted leather, metallic leather

CELEBRITY & ROCKSTAR SHOE DESIGNER CHRIS FRANCIS, FROM KOKOMO, IND., WILL RETURN TO INDIANA THIS FALL FOR HIS EXHIBIT, "TO-THE-LAST: 21ST CENTURY SHOE DESIGNS," AT THE PATTI & RUSTY RUEFF GALLERIES IN PAO HALL.

the stage to communicate their artistic identity. Francis' ability to marry color and sculptural form has resulted in collaborations with many celebrities — but especially musicians.

His grandfather was a carpenter and his grandmother a seamstress. Because of that combination, perhaps shoemaking was an inevitable outcome for Francis. But back when he was a new artist, his raw talent was what stood out.

"All of his paintings always had this interesting combination of colors; it's what set him apart from the others," Sondergrath said. "It would all just sing with color."

As he practiced making shoes, Francis increasingly relied on math and geometry to develop architectural forms. His shoes look like delicate sculptures that might be unable to sustain a human's weight, but the beauty is that they are fully capable of doing so.

"It's striking to see an object treated with such artistry that is normally perceived as functional," said Charles Gick, professor of fine arts in the Rueff School of Design, Art, and Performance.

Shoes, Gick said, are a way to demonstrate the importance of design in our everyday lives. He hopes Francis' exhibit will bring awareness to how anyone can find art in the most unusual places, perhaps by simply looking down.

As head of the apparel design and technology concentration in the College of Health and Human Sciences, Kristofer Chang Alexander also hopes to show his students how the marriage of art and design can be as playful as a pair of Bauhaus shoes and as simple as a smokestack in a small town.

"When I tell people I grew up in a small town in South Dakota, they can't understand how I got into fashion," said Chang Alexander, a continuing lecturer in the College's Division of Consumer Science. "But fashion inspires people from all over the world, even Kokomo, Indiana."



Images courtesy of Chris Francis



"Maracas" (2015), hand-painted wood, hand-painted leather

BROADENING PERSPECTIVES

By David Ching

An American Studies program could easily become an exercise in navel-gazing, with U.S.-born scholars and students examining the nation's role as a global leader. Purdue's 55-year-old American Studies program — one of the oldest of its kind — does not take that approach. It prides itself on its international ties, with multiple faculty members who have worked overseas on Fulbright scholarships and a partnership with the American Studies program at East China Normal University in Shanghai.

Through these influences, and with input from its numerous international students, the interdisciplinary program is able to incorporate many different viewpoints that examine the United States' various spheres of influence.

"I think that's the beauty of this program, because we all come from different backgrounds and with very different research interests that really encourage us to discuss issues from very different perspectives," said Annagul Yaryyeva, a Ph.D. student from Turkmenistan. "I really hope I learn a lot about the United States through the perspective of U.S. nationals in the program, as well as other international students who study the United States and its impact."

Yaryyeva grew interested in studying U.S. influence after observing the way American culture shaped life in Eastern Europe following the Soviet Union's collapse in the early 1990s. Other students in the program — including natives of the Middle East, Germany, and China — also examine America's impact on their homelands.

For example, Ph.D. candidate Ozgun Basmaz studied English language and literature as an undergraduate and is now examining the Cold War relationship between the U.S. and her native Turkey, focusing specifically on its effect on Turkish cinema.

"I think part of what motivates some of these students is they live in countries that may have an antagonistic relationship with the United States," American Studies director Rayvon Fouché said. "I think they're trying to understand what that all means because the United States has such a large presence globally, from the

perception of media, military, and economics. I think they're really fascinated by how it influences the countries in which they live."

A Purdue faculty member's influence is actually what drew Basmaz to West Lafayette. She struck up a friendship with American Studies faculty affiliate and associate professor of women's, gender, and sexuality studies TJ Boisseau 15 years ago while attending her American pop culture course at Germany's University of Bayreuth, where Boisseau was working as a Fulbright Senior Scholar. Basmaz later studied under Boisseau at the University of Akron and has once again enrolled at a university where Boisseau teaches.

In fact, Basmaz credits Boisseau for convincing her to resurrect the Turkish film study after she nearly dropped it and settled for life in the working world.

"I really regard her as my mentor," Basmaz said. "I feel emotionally indebted to her because she really opened a path for me. Sometimes I was like, 'OK, I'm not coming to the United States.' I was really pessimistic. 'I'm almost 40 years old. I'll just call it (quits). I couldn't do it. I'm OK with this failure.' But she never let me drop this project, and now after spending one year here thinking about my theme, writing about it, talking to other professors, I just see it as a wise decision to come here."

Although both Ph.D. students participated in American Studies and English-language programs overseas, they admit that they still had a lot to learn about U.S. culture when they traveled stateside. Basmaz discovered Americans' Thanksgiving traditions after accepting Boisseau's invitation to spend the holiday with her family. Meanwhile, Yaryyeva recalls being stunned as a high school exchange student in Athens, Tennessee, by

the way students in the cafeteria would segregate along racial and class lines.

"The United States exports this image as a very racially diverse and integrated society. At least that's the image that the United States is trying to sell abroad," Yaryyeva said. "However, when I got to the United States, I saw the way people in the cafeteria would separate from each other — segregate based on race and class, because I saw high school cheerleaders and football players sitting away from lower-class white students. And then you have black students sitting separately from the rest of the group, and Hispanics and international students, as well. To me, that was very unexpected."

Yaryyeva's hope while attending Purdue is that she will develop skills that will allow her to facilitate understanding and empathy between Americans and citizens in her home country, a former Russian republic. Tensions have peaked between Russia and the U.S. in recent years, heightened by Russia's alleged interference in the 2016 U.S. election and its military conflict in Ukraine.

"I'm pretty sure a lot of Americans are paying attention, but the post-Soviet communities especially are paying a lot of attention to what is going on between the two countries politically," Yaryyeva said. "But there is never really a conversation about the post-Soviet population and how they are impacted by this hostile environment between the two nation-states at this moment."

She hopes to someday use her academic training in university administration or at a non-profit organization — two of the most common career paths for American Studies students according to Fouché.

Basmaz also hopes to work in academia, perhaps teaching

film studies, cultural studies, or American Studies. Where she will do that is a more complicated matter.

While she would like to teach in America after completing her dissertation, she also expressed hope that she will eventually teach in Turkey, where she could be closer to family and friends. However, attitudes toward Americans and academics are decidedly poisonous lately in her volatile homeland, and Basmaz is unsure when it might be safe to move home.

"At one point, yeah, I would like to go back, but I don't know," she said. "I also don't want to end up in prison. I just want to be able to say what I think. I don't want to restrict myself. I can't be in an environment that requires me to censor myself."



SPACE WALKING

By David Ching

A student project to highlight Purdue's distinguished history in space exploration includes little-known facts that hold an element of surprise for everyone — even members of one of the University's most prominent NASA families.

Amy Ross (BSME 1994, MSME 1996) — a NASA spacesuit designer and daughter of Purdue astronaut alumnus Jerry Ross (BSME 1970, MSME 1972) — proved that to Angelica Duran's ENGL 413 (Studies in Literature and History: From the Heavens to Outer Space) students this spring.

As part of their coursework, 14 students created a series of walking tours to help visitors locate campus landmarks that illustrate why Purdue is known as the "Cradle of Astronauts." When Ross visited campus in April to participate in a panel discussion, she took a beta version of the students' "Purdue Space Walks" map out for a spin.

"She went on some of the walks and said that when she was a student here, those buildings were there and she had never known that some of the

things existed. It was very exciting," said Duran, a professor of English, comparative literature, and religious studies. "If that had been the only thing that happened, that we did that for her, I would have been golden."

This summer, the first published versions of the maps became available to all, coinciding with the 50th anniversary of the Apollo 11 mission when Purdue alumnus Neil Armstrong became the first human to set foot on the lunar surface.

The tours direct visitors to some of Purdue's best-known space sites, like the moon-boot footprints and statue outside the Neil Armstrong Hall of Engineering, the Voss Model — a massive, scaled model of the solar system located in Discovery Park — and the Purdue Airport.

"We had to get people out to the airport because that's where Neil Armstrong first arrived for his campus visit," said Duran, who served on the University's Apollo 11 50th anniversary planning committee ahead of its July celebration of Armstrong's original "Giant Leap." "He didn't have a

PURDUE SPACE WALK TOURS DIRECT VISITORS TO SOME OF THE MOST NOTABLE SPACE SITES ACROSS CAMPUS

car driver's license, so he flew because he had his plane license. This is a thing you find out in the archives. And just so many of our astronauts did their training there."

The tours also take visitors to spots that are not so famous, like the locations of the five "shuttle gum trees" donated by astronaut alumnus Charles Walker, all of which germinated aboard space shuttle Discovery in 1984.

"There were things that I'd vaguely heard about, like there are these 'shuttle gum trees' on campus," Duran said. "I was like, 'Well, what are those?' It's all on the map. I have passed one of those trees on my walk to campus probably for at least 10 of my 19 years here."

Students in Duran's course focused on a broad range of space-related topics — such as selected readings from Milton's *Paradise Lost* and Galileo's *Starry Messenger*, plus other creative works influenced by the lunar landing — and also put their creative abilities to use in a pair of projects.

They conducted research in Purdue's Barron Hilton Flight and Space Exploration Archives in order to create gallery labels for Purdue Galleries' spring exhibition, *Return to Entry*, at the Robert L. Ringel Gallery. The three artists who contributed to the exhibition — Frances Gallardo, Michael Oatman, and Jennifer Scheuer — were inspired by their own research in the Hilton Archives.

Among the notable Ringel Gallery visitors who reviewed the students' work after the April 5 *Apollo in the Archives* reception: Amy Ross; Armstrong's widow, Carol; former NASA administrator and Under Secretary of Defense for Research and Engineering Michael Griffin; and the three *Return to Entry* artists.

"I had never used the archives prior to this class," said Sascha Nixon, a junior in English. "In our final paper, one of our required sources is from the Neil Armstrong Collection in the archives, so I got to go back and find my own stuff in the collection that I wanted to look at, which was really cool because I got to pull stuff and look through it all. It was really cool to hold it all and be like, 'This is stuff (Armstrong) had.'"

The students' three "Purdue Space Walks" maps are each named after a prominent Boilermaker astronaut. There are 20-minute walks called the "Armstrong Mission" and "Grissom Orbit," plus the expansive "Voss Giant Leaps" that recommends visitors allot 45 minutes to complete on a bicycle.

"I learned a lot more than I expected, especially about Purdue's history with space, and especially doing the map and having to go find all the different things and learn about all the different astronauts from Purdue," said Antonia Neckopulos, who graduated in May with a degree in English. "You always hear about Armstrong, but there is (Gus) Grissom, and (Roger) Chaffee, and all of that. It was really interesting."

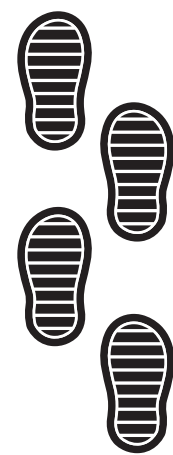
Now that the first versions of the printed maps are available to visitors, Duran plans to build upon her ENGL 413 students' work over time. This fall, students in her two SCLA 101 courses in the Cornerstone Integrated Liberal Arts program will develop expanded versions of all three "Purdue Space Walks" maps.

The milestone dates that Purdue is celebrating this year made this a perfect time for Duran and her students to identify the landmarks that are a vital part of the University's identity.

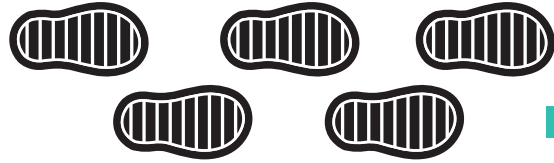
"I have long known and been looking forward to the 50th-year anniversary of the lunar landing, and here we are at the Cradle of Astronauts," Duran said. "The whole campus is like a living laboratory, so I thought this is the time to put it together and see what happens."



Artist Michael Oatman and Carol Armstrong view Neil Armstrong's file labels on display at the *Return to Entry* exhibit. At right is Under Secretary of Defense for Research and Engineering Michael Griffin, a former NASA administrator. Photo by Christina Cichra/Purdue Galleries



SPACE WALKING



ARMSTRONG MISSION 20 minutes, estimated travel time, moderate walking speed

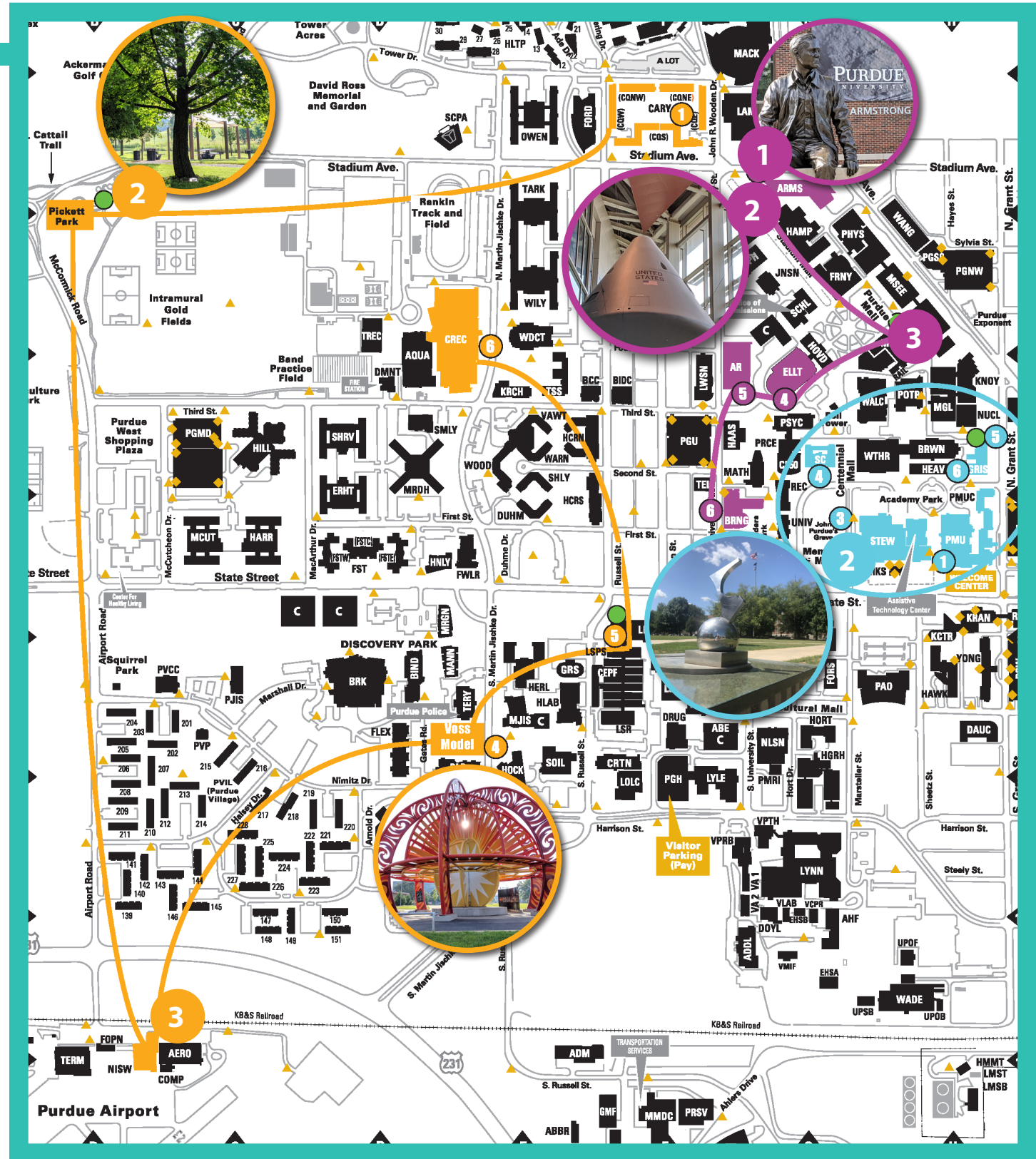
- 1 Armstrong Memorials, Armstrong Hall (G-5, ARMS), outdoors**
At the northwest entrance of Armstrong Hall is a statue of Neil Armstrong, to 1.25 scale. In the grassy area of that entrance (to the west of the statue) are 20 moon-boot footprints, to exact scale, from his iconic Apollo 11 (1969) moon landing. The footprints show the unique effect of gravity on the moon.
- 2 Outer Space Memorabilia, Armstrong Hall (G-5, ARMS), 1st and 3rd floors**
Enter the northwest doors and look up at the replica of the Apollo 1 (1967) capsule, commanded by Class of 1950's Virgil I. "Gus" Grissom. Down the hall to the right is a portion of the moon rock from Apollo 17 (1972), commanded by Class of 1956's Eugene Cernan. On the 3rd floor are photos of Purdue astronaut-alums, the Apollo 8 (1968) heat shield plug, and more.
- 3 Outer Space Tree, Mechanical Engineering Bldg. (H-6, ME), outdoors**
One of the 5 "shuttle gum" trees donated by astronaut-alum Charles Walker (B.S., Aeronautical & Astronautical Engineering, 1971), this sweet gum tree — at the north tip of the ME building — earned its nickname because it was germinated aboard the space shuttle Discovery (1984). See the ground-level 10- x 14-inch plaque for more information.
- 4 Armstrong's Kappa Kappa Psi Pin, Elliott Hall (G-6, ELLT), basement level**
Baritone-horn player Armstrong donated his Kappa Kappa Psi pin, a symbol of his honorary membership in the Purdue All-American Marching Band fraternity (1965). He wore the pin on Apollo 11 (1969). The small pin is in a glass case in the band lounge — the 1st room on the right after you go down the 3rd St. entrance staircase and turn right.
- 5 ROTC Honoree Plaque, Armory (G-6), foyer and Room 101**
The names of Purdue alums, faculty, and staff are commemorated on many plaques, reminding us of the high number of astronauts who served in the ROTC and the military, such as Class of 1957's Roger Chaffee, as well as of the support for air and space exploration across campus. When classes are not in session, you are welcome to see the pictures lining the east wall of Room 101.
- 6 Hubble Telescope Images, Beering Hall (G-7, BRNG), 2nd floor**
In the foyer of rooms 2280 and 2290 are mural-sized color limited-edition Hubble Space Telescope images, a donation from Class of 1964's Peggy Motes McBride. The images are as wondrous as their names: Cigar Galaxy M82, Eagle Nebula M16, Great Orion Nebula M42, Helix Nebula NGC 7293, and Whirlpool Galaxy M51.

GRISSOM ORBIT 20 minutes, estimated travel time, moderate walking speed

- 1 Armstrong Mural, Purdue Memorial Union (PMU, H-7), sub-basement level**
Take a journey into the depths of PMU to find the mural of Neil Armstrong in his space suit. Starting from the southwest entrance, go down the three sets of stairs. Then, walk through the hallway and through the first door, before turning left. The mural is on the left wall about 6 feet past the "Boilermaker train" hallway on the left.
- 2 Purdue Archives & Special Collections, Stewart Hall (G-7, STEW), 4th floor**
Scholars, students, and visitors can explore the Barron Hilton Flight & Space Exploration Archives, with its artifacts, family scrapbooks, mission logs, and other memorabilia from astronaut-alums Armstrong and Eugene Cernan, as well as aviator and student advisor Amelia Earhart, to name a few. Enter the HSSE Library for access to this part of the 4th floor.
- 3 Phoenix Sundial, Memorial Mall (G-7), northeast sidewalk**
Purdue's Aeronautical, Astronautical, and Engineering Sciences Department donated this small metal Phoenix Sundial, which stands atop of a 3-ft. tall stone block. Looking at this sundial's shadows reminds us of the amazing discoveries about outer space that have been made with sundials since at least the 13th-century B.C.E.
- 4 Earth Mural, Stanley Coulter Hall (G-7, SC), 2nd floor outside Room 249**
Installed in 1994, this 50-ft. mural of the Earth, clouds, classical columns, and the moon that covers the whole south-facing wall outside Room 249 represents the global nature of Purdue's School of Languages and Cultures, which teaches 15 languages, including Russian. Also in 1994, Sergei Krikalev became the first Russian cosmonaut to fly on a U.S. space shuttle.
- 5 Outer Space Tree, Grissom Hall (H-7, GRIS), outdoors**
One of the 5 "shuttle gum" trees donated by astronaut-alum Charles Walker (B.S., Aeronautical & Astronautical Engineering, 1971), this sweet gum tree — north of the picnic tables on the northwest side of Grissom Hall — earned its nickname because it was germinated aboard the space shuttle Discovery (1984). See the ground-level 10- x 14-inch plaque for more information.
- 6 Memorial Posters, Grissom Hall (H-7, GRIS), 1st floor**
Named after Class of 1950's Virgil I. "Gus" Grissom, the east and west entries to Grissom Hall showcase informative memorial posters honoring Grissom and other Purdue alum-astronauts. Redesigned from 2014-2015, the upgraded lights and spacious study areas are invaluable for undergraduate and graduate student collaboration.

VOSS GIANT LEAPS 45 minutes, estimated travel time, moderate walking speed

- 1 Cary Quadrangle (F-4, CARY), 5 mins. biking from Grant St. Garage**
One of the oldest campus buildings, "Cary Quad" (est. 1928) has been the residence for many astronaut-alums, including Neil Armstrong (B.S., Aeronautical Engineering, 1955), Eugene Cernan (B.S., Electrical Engineering, 1956), and Andrew Feustel (M.S., Geophysics, 1991). See the plaque in the center of the Quad for more information about the building.
- 2 Outer Space Tree, Pickett Park (B-5), 5 mins. biking from Cary Quadrangle**
One of the 5 "shuttle gum" trees donated by astronaut-alum Charles Walker (B.S., Aeronautical & Astronautical Engineering, 1971), this sweet gum tree — south of the first picnic area west of the parking lot — earned its nickname because it was germinated aboard the space shuttle Discovery (1984). See the ground-level 10- x 14-inch plaque for more information.
- 3 Purdue Airport (B-11, NISW), 15 mins. biking from Pickett Park**
Opened in 1930 as the first university-owned airport in the U. S., Niswonger Hall of Aviation Technology trains pilots and engineers for futures in flight, including astronaut-alum Neil Armstrong. For more information and a display of NASA and other awards, look at the glass case to the left of the main entrance.
- 4 Voss Model (D-9, between DLR & TERY), 10 mins. biking from Purdue Airport**
This eye-catching to-scale model of the solar system is dedicated to astronaut-alum Janice Voss (B.S., Engineering, 1975), whose work in astronomy inspired the model, based on the Fibonacci spiral or golden spiral. For every foot traveled in the spiral, walkers would travel about 5.4 million miles in outer space.
- 5 Outer Space Tree, Lilly Hall (F-8, LILY), 5 mins. biking from Voss Model**
In 1990, astronaut-alum Jerry Ross (B.S. Mechanical Engineering, 1970; M.S. Mechanical Engineering, 1972) planted this "Sycamore (American Planetree)" as it is identified on a small brown label at its base, on the northwest side of Lilly Hall. The tree, which was germinated aboard the space shuttle Atlantis (1988), commemorates the 60th anniversary of Purdue Extension.
- 6 Córdova Recreation Center (D-6, CREC), 5 mins. biking from Lilly Hall**
This multimillion-dollar sports center honors Purdue's first woman president (2007-2012), France A. Córdova (B.A., English, 1969; Ph.D., Physics, 1979), who earned the NASA Distinguished Service Medal in 1996. The Center, spanning 355,000 sq. ft., includes a cafe open to visitors, and great facilities, including 2 tracks, where students and members can run all the orbits they want.



NOTE: Buildings and classroom are subject to closure and may be in use.

Purdue is known as "the cradle of astronauts" for the many alums, researchers, and administrators who have contributed to outer space exploration, including the 24 astronaut-alums who have traveled in outer space in the first 50 years since the Class of 1955's Neil Armstrong took "one small step for a man, one giant leap for mankind" on the moon in July 1969. Take one or all three routes named after Purdue astronaut-alums, each with six campus sites reflecting Purdue's role in outer space exploration.



YVONNE PITTS
MURPHY AWARD WINNER
ASSOCIATE PROFESSOR
DEPARTMENT OF HISTORY

Photo by Mark Simons, Purdue Marketing & Media

Q: Do you remember when you decided to become a teacher and what motivated that interest?

A: I think it's been an organic process. I found myself, even at a very young age, wanting to tell people what I knew. But I was also fascinated by the process of how do we learn something new and make choices or decisions based upon that.

I wanted to be able to take that skill and share it with other people in things that I was passionate about, which happened to be things like thinking about democracy, thinking about civics, thinking about the rights and liberties that we as Americans have, and how we engage each other.

So it happened not only through a process of my areas of interest — that I wanted to study them — but I'm also the kind of person that wants to share that information with others in a way that informs them so that they can then go out and do the thinking, or the research, or whatever to make their own choices.

Q: Who do you look up to in the teaching profession?

A: Well, I have so many great colleagues.

Melinda Zook, who's doing Cornerstone. I've watched her build that program from the ground up. I've learned something about the inside part of program building for creating this integrated liberal arts program. It's not the part about sitting in the classroom, but it's the part about conceptualizing the program itself and how it's going to fit in within the broader structure of curriculum in education. So, she's been a huge mentor and I have so much admiration for what she's done.

I look at people on the national stage like Michelle Obama, the education that she did with youth and the way that she talks to people about issues. I think that she's a fantastic kind of public intellectual — and national figure, as well, who herself is not a politician, so she's not caught in some of the crossfire that elected politicians are.

If you want to get classical, Cicero. Cicero's ability to explain things to people as an orator, his ability to communicate ideas when I'm thinking about rhetoric. Or

when I'm thinking about, for instance, how to persuade someone, I think about the great works of Cicero. So there's three for you.

Q: What do you find most rewarding about being an educator?

A: Seeing the light bulb go on. Knowing that a person walks away from a classroom, or a course, or even a conversation, thinking in new ways or having a new interest that they themselves are going to pursue.

Q: What is the main rule you try to follow as an educator?

A: Keep an open mind. Let the unexpected happen. That's when new things happen. That's when the imaginative, the innovative, the creative happen, and that's when we put two concepts together that otherwise would never have been put together and create a new way of thinking or a new understanding.

I have to remember to pull back and sometimes let my students lead me in terms of what they do know — because they know a lot, but they don't realize that they know it. So excavating that and showing them how they can use the tools that they have and the knowledge that they have towards things like an ability to ask a good, focused question that's going to get a useful response. They have the information, but they don't know how to ask the question. So, in those terms, it's a very methodological approach, but that's why I say to let the unexpected happen.

Q: What does winning the Murphy Award mean to you?

A: Having won some of the other teaching awards, I had recognized it as the highest honor that we offer at Purdue, but I wasn't convinced that I was at that place yet where I had the achievements to be recognized. This is such an honor, and it's also humbling because I realize some of the people who I now will be listed alongside, have been these iconic and great teachers and leaders — not just here, but nationally. It was really a very, very satisfying, humbling, inspirational moment because it inspires me to keep doing what I'm doing.



DEREK PACHECO
MURPHY AWARD WINNER
ASSOCIATE PROFESSOR
DEPARTMENT OF ENGLISH

Photo by John Underwood, Purdue Marketing & Media

Q: Do you remember when you decided to become a teacher? What motivated that interest?

A: I can remember the first time I wanted to teach literature, back when I was an undergraduate. I took a seminar on Nathaniel Hawthorne and discovered that he wrote several children's books, including *A Wonder Book for Girls and Boys* (1852). In it, he retells classic Greek myths as fairy tales for children. I remember being really surprised to learn that he wrote more than just novels like *The Scarlet Letter*. There was so much joy and pleasure in that adaptation; I needed to share it. To this day, I still find the prose style in these books so compelling, relatable, and enjoyable.

For scholars of children's literature, there's an important difference between simple and simplistic writing. Simple is thought provoking and elegant, while simplistic is just shallow. In his preface to *A Wonder Book*, Hawthorne says, "Children possess an unestimated sensibility to whatever is deep or high, in imagination or feeling, so long as it is simple, likewise." That's a lot like teaching. Effective instruction is making complex material seem simple, never simplistic.

Q: Who do you look up to in the teaching profession?

A: Over the years, there have been a few people who've really inspired me: my 12th-grade English teacher, Mr. Trevisani, who blew my mind by reciting lines from *Beowulf* (in Old English) and by acting out scenes from *Macbeth*; my undergraduate advisor, Michael Colacurcio, who loved puns and always kept his office hours; my graduate adviser, Barbara Packer, who made reading and discussing 19th-century literature feel like reminiscing with old family friends; and my partner, Nush Powell, who's responsible for 90% of all my good ideas, and none of the bad ones.

Q: What do you find most rewarding about being an educator?

A: I love being up in front of the classroom, telling stories, talking about things I love with kids I like, always learning new things. One time, a student wrote to me, "I hope that I can follow your example and teach others to be curious about and even come to love those things that at first seem daunting to them." It doesn't get much better than that.

Secret confession?

I love receiving thank-you notes. It doesn't matter if I'm recruiting prospective students to English, or writing a letter of recommendation for a graduating senior. I really appreciate it. First of all, thank-you notes are a lost art. They're sociable, but personal, the opposite of social media. They take time. Handwriting is slow, too slow. People don't have the patience for it anymore. So, when a student — a digital native — takes the time to handwrite a note? That's special. That tells me our interaction meant something.

Q: What is the main rule you try to follow as a teacher?

A: I have two:

1. Thorin's dying words in *The Hobbit* (a book I love to teach): "If more of us valued food and cheer and song above hoarded gold, it would be a merrier world."

2. British Romantic poet Percy Shelley's assertion, written to a friend who urged the best minds of the day to study economics and science rather than write poetry, which sounds a lot like the constant refrains about STEM today, "Poets are the unacknowledged legislators of the World."

In other words, he teaches students not only that authors wield great power through the invisible influence they exert, but also that they must maintain responsible stewardship of this power. Teaching literature is a chance to show students that the liberal arts matter, that ethical thinking, respect for diversity, appreciation for the complex, and the capacity to explain complexities as accessibly as possible are indispensable skills, that, in an age of intensifying technological automation, empathy and humanity are our biggest strengths.

Q: What does winning the Murphy Award mean to you?

A: It's very gratifying. I'm a kid from a working-class, immigrant family. I was one of the first to graduate from college. My father never made it past sixth grade. He worked as a college janitor to get his kids free tuition. So, education was a big deal for him. When I told my mom and dad about the Murphy Teaching Award, they were so proud — prouder than when I earned my Ph.D., even. They shared the news on Facebook, and random Portuguese people from all over the world congratulated them.

A SAFE APPROACH

By Eric Butterman

Emily Haas has long had a passion for safety. That passion took her to the mining community as a senior research behavioral scientist for the Centers for Disease Control's National Institute for Occupational Safety and Health.

During her time at Purdue, her safety efforts focused on motorcycle riders.

"She was my right-hand person on the motorcycle safety campaign research team, and she was so motivated," said Marifran Mattson, head of the Brian Lamb School of Communication. "We both had related experiences. I lost my leg in a motorcycle accident, and there was a death of someone close to her from another motorcycle accident. When the work led to the first motorcycle caution sign going up, it was a great accomplishment and a great feeling."

For Haas — who completed a Ph.D. in health communication at Purdue in 2012 — that small sign symbolized what can be accomplished by combining research, effort, and a genuine concern for others. And it was only the beginning.

Through a former colleague of Mattson's, Haas landed an interview with the National Institute for Occupational Safety and Health, which led to a job offer.

While motorcycling and mining might not seem to have much in common, for Haas it was all about safety — and the needs of others.

"There was a gap that existed in this particular

industry," she said.

Though the mining industry has gone through its share of changes, the most recent data from the Mine Safety and Health Administration indicates that there were nearly 200,000 employees in 2017 at approximately 13,000 operating mines. In other words, research is still vital to ensure safety for this hard-working community.

Haas received new miner training and went on to receive annual field training, and much of that education was voluntary.

"It doesn't make you a miner, but it helps you learn what miners go through," she said. "A lot of my day is going through a research process involving data collection, and ultimately communicating with companies and stakeholders to disseminate what the research findings are and what it means to them and workers."

Her research has focused on everything from the effect of dust assessment technology to the importance of employee communication.

Haas' work, which has taken her to roughly 50 mines in 25 states, has revealed something that might come as a surprise.

"I have been underground dozens of times when it comes to mines," she said. "What I learned, and what many people don't know, is it's actually a safe industry and safer than people think. Companies are improving their systems and processes and really making an effort."

Haas finds going to the mine sites a valuable learning experience, particularly seeing the different mining processes that exist depending on the commodity involved: clay versus coal, coal versus gold, and so on. Each is different, and each sector carries its own risks.

Haas also benefits from spending time with mine workers and getting a sense of their concerns.

"Whenever I deal with them, it's humbling because they work in a dynamic environment where they have to adjust and have foresight," she said. "People don't understand all of the checks they go through before they start their day. It's not just industry safety precautions, but worker awareness that makes the difference."

In the six years she has worked for the National Institute for Occupational Safety and Health, Haas has been proud to see her contributions help companies make sustainable changes to safety culture at mine sites. "We have found that the biggest predictor of following rules is an intervention by a co-worker," she said. "It's about assessing what the communication is on site and where can it be improved. ... Another topic focused on is giving workers more autonomy on the job to make decisions."

Her work was even recognized in June 2018

with an Arthur S. Flemming Award in the category of Social Science, Clinical Trials, and Translational Research. Presented by the Trachtenberg School of Public Policy and Public Administration at George Washington University, the prestigious award recognizes outstanding federal government employees.



In accepting the Flemming Award, Haas joined a list of recipients that includes pioneering physicians, award-winning journalists, senators, and Purdue's most famous alumnus, astronaut Neil Armstrong.

"It was unexpected and exciting to be recognized," Haas said. "Where I work it's about 90% engineers, but much of my job is about explaining things, and it's not about developing technology. It's contributing to health and safety, but in a different way. It felt great that an external committee recognized the years of travel and work."

Even as time passes, Haas still feels a strong connection to her Purdue days — particularly to mentors like Mattson.

Through their partnership conducting motorcycle research, she learned a valuable lesson that still applies to her work today. Maybe they did not see a total behavior change as a result of their findings, but they did observe improvements in knowledge and awareness.

To Mattson, Haas' approach to mining research encouragingly reminds her of what she saw during their work on that project.

"She loved that kind of work because she could really see the difference she was making, but there was also still research associated with it."

“
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”

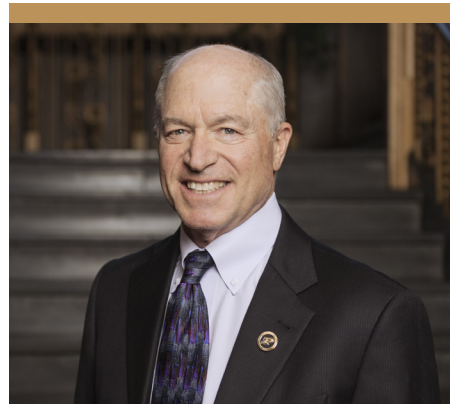
— Emily Haas

PROGRESSIONS

Distinguished

Alumni

Since 1986, the College of Liberal Arts has recognized the outstanding achievements of its graduates through the Distinguished Alumni Awards program. Recipients of this award have made significant contributions to society, and their accomplishments, affiliations, and careers honor the legacy of excellence at Purdue University and in the College of Liberal Arts.



ROBERT HEIBER

BA 1973, Communication

Film sound preservationist and president of The Rick Chace Foundation, whose mission is “to break the silence on the history, art, and technology” of motion picture sound.

“The beauty of going to college is you meet a lot of people from all kinds of different backgrounds, and they’re all doing different things. In this case, I helped a friend out with a project and they were in the School of Communications and it was like, ‘Well, this is fun. You can actually get a degree doing this? Sign me up.’”

Robert Heiber on how he got found his major at Purdue



MELVIN LENZY

BA 1995, Sociology

Accepted a position in June as the NFL’s vice president of global brand and consumer marketing after previously spending 13 years at Nike as senior global brand director. At Nike, he helped design strategic marketing plans for celebrity athletes like LeBron James and Kobe Bryant.

“One of the things is you love your job, you like what you do. It’s about crafting the story and those details and the notes that you take. That’s what Kobe loves. Other people who just play because they’re skilled and talented, but don’t do that, he can’t stand that. So seeing that, I thought, ‘OK, now I understand who he is.’”

Melvin Lenzy on getting to know basketball superstar Kobe Bryant through his role at Nike



KAREN KORELLIS REUTHER

BA 1979, Industrial Design

Vice president and creative director at Reebok who is responsible for creative leadership and design implementation in brand identity, product, retail, and mobile.

“When I look to hire young designers now, they want to do everything right away. They’re like, ‘I want to do what you do.’ It took me 20 years to get to what I do now, and I always tell them, ‘Know what your crazy-mad skill is and just let that shine.’ I often call it their superpower. ‘Let people know what your superpower is, and let them know what they can rely on you to do better than anybody else, and then you’ll be given those other opportunities.’”

Karen Korellis Reuther’s advice for today’s students



CARLOS PAULET

BA 1999, Political Science

CEO of X-Factor Consulting Group, member of the Harvard Business Review Advisory Council, and VP of technology at Alexcel, the Alliance for Leadership Excellence. Paulet and his wife, Carolina, co-founded the non-profit Catalina Art Foundation in honor of their 6-year-old daughter who died from brain cancer in 2015. The foundation manages teams of volunteers in shelters, clinics, and hospitals who bring art and love to children with cancer.

“Losing a child is the most devastating thing that can happen to any human being in the world. A parent simply shouldn’t have to bury their children. We did everything possible to save my daughter until it wasn’t possible, and then went to hospice and rode it through. So I guess bringing smiles to other children and bringing hope in a situation that’s low on that is rewarding in a way of saying thank you to the love my daughter gave me in life.”

Carlos Paulet on why his work with the Catalina Art Foundation is rewarding



SALLY SCHOLZ

MA 1991, PhD 1993, Philosophy

Department chair and professor of philosophy at Villanova University, whose published research includes books on Beauvoir and Rousseau.

“Today we need a lot more philosophers. We need many more invitations to just stop and think and to consider what it means to say certain things, to believe certain things, to act in particular ways. Philosophy is that invitation. So you can live the life of a philosopher doing whatever you do: as a writer, as a journalist, as a social worker, as a banker, as a financial analyst — whatever it is. Love it. Do it because you love it.”

Sally Scholz’s advice for today’s students who are interested in philosophy

Quotes from the Distinguished Alumni Award recipients are from their conversations with THiNK Magazine editor David Ching when they visited campus for the annual awards banquet on March 22, 2019. To read the full Q&A interviews with each recipient, visit cla.purdue.edu/think



Photos by Rebecca Wilcox, Purdue Marketing & Media





WOMEN IN SCIENCE

My first project was in Georgia, in 2013 while I was working on my dissertation. I worked with a group of African-American women in computing — robotics, specifically. I really explored how they approach innovation, but also what it means to be a scientist, particularly for African-American women in the South.

A lot of the women talked about how international research experience helped their identity formation and how they viewed what they did as purposeful. That's how I got connected to looking at cultural variations of knowledge production and technology development.

NEW PROJECTS

I have new projects in Ghana and Nigeria. In Ghana, I'm working with secondary school girls in addition to women working in STEM. One school is in the capital, but the school is under-resourced and the other is an accelerated school for gifted young women from all over the continent. I'm working with the girls there to kind of design what would a science/innovation lab look like within this context? How can we draw on the lived experiences of the young women to co-create a meaningful place for them to innovate, design, produce new knowledge, or just come to sort of understand themselves and their agency in the world?

My research focuses on the experiential knowledge and narratives of women in science within college and university settings. In Nigeria, I'm working with a faculty member at the University of Benin named Professor Dolly Ahbor. She is the former president of the national chapter of the Organization for Women in Science for the Developing World (OWSD). I'm exploring the ways women scientists and technologists, in this organization, navigate and negotiate global and local scientific networks, shifting sociocultural dynamics and their experiences in STEM development initiatives.

VALUE OF STEM KNOWLEDGE

Science and/or STEM knowledges are framed as having capital, particularly for women who have been removed from resources, or access to resources, or educational opportunities in these spaces. Being a scientist or science person, they see it as positioning themselves differently within their local contexts.

I think this is particularly unique because we usually think that students come to science to contribute to science or to the science communities. But they're taking what they're learning and using science as a tool to develop things that are important to them and their local contexts, or even to their family networks, or even just using the positionality of being educated to renegotiate their home environments.

They talk a bit about how the stereotypes and social expectations of what a science person is/does, and how that just does not map onto being an African-American woman, being a black woman, or being a woman. And so, the women I worked with kind of continually reframe themselves in relation to these communities. But what I think is novel is that the women don't necessarily feel like "I don't belong in this community," but more so, "What can I learn from this space for what it is that I want to do in life?"

LESSONS LEARNED

From what I did in Georgia, I think there are some real lessons for the way we tend to rely on ideas of identity in approaching training young people and/or students in STEM fields and their perceptions of science and technology. I think that we can learn different strategies and work toward a more democratized STEM.

One of the things that's really exciting about the context of Ghana is I'm seeing how they are melding together local practices of knowledge production and technology development and challenging notions of what it means to innovate. There is a lot of energy around creating opportunities for young people to be agents of change in addressing challenges such as food insecurity, natural resource management and sustainable development initiatives.

I am working with an educational technologist, Michael Lachney, who specializes culturally situated design tools and technologies to strengthen school-community relationships. We are in the early stages of an exciting project drawing on STEM knowledge embedded in cosmetology practices and natural haircare movements.



PROGRESSIONS CLASS NOTES

1967

MICHAEL TOWNSLEY (BA, Political Science) has published *Steve Hammagan: Prince of the Press Agents and Titan of Modern Public Relations*, a behind-the-scenes look at the newspaper world during the first half of the 20th century.

1971

VIRGINIA MCCONNELL (MA, English) published a murder mystery, *The Belle of Bedford Avenue*.

STEPHANIE SALTER (BA, Political Science) was inducted into Indiana's Journalism Hall of Fame. As a student, Salter was the first female editor-in-chief at the *Exponent* since World War II. After graduation, she worked at *Sports Illustrated* and as a reporter and columnist who investigated clergy abuse at the *San Francisco Examiner*. The Terre Haute native concluded her journalism career as a columnist at her hometown *Tribune-Star*.

DOREEN SIMMONS (BA, Political Science) was selected for inclusion in *The Best Lawyers in America* for 2018. Simmons is the leader of the environmental practice at Hancock Estabrook LLP.

1972

CHARLES "CHAS" KUPPERMAN (BA, Political Science) was appointed as Assistant to the President and Deputy National Security Advisor by President Trump.

1973

DEBORAH HANKINSON (BA, Elementary Education) of Dallas, Texas was selected for inclusion in *D Magazine's* listing of the Best Lawyers in Dallas for appellate law.

CRAIG WHELDEN (BA, Political Science), executive director of the U.S. Marine Corps Forces, Pacific, published *The Art of Inspiring People to Be Their Best*.

1975

KENT SHEETS (BA, Communications — Radio & TV) published *Not Just Any Department of Family Medicine: Telling the Story of the First 40 Years of the University of Michigan, Department of Family Medicine*.

1977

MARTHA ENGLAND (BA, Communication) was promoted to senior vice president of marketing for Sport Clips Haircuts a sports-themed haircutting franchise.

1978

KENNETH LAVENBERG (BA, Communication) passed the Indiana state insurance exam and joined the Ronald Sage Farmers Insurance agency in Zionsville.

1985

JAMES "JIM" PERKINS (BA, Foreign Languages) has been named Vice President of International Sales for Texas-based Dickey's Barbecue Pit. In his new role, Perkins will work with the franchise sales team to grow the Dickey's Barbecue Pit brand internationally.

1986

ELIZABETH COGHILL (BA, Political Science) earned a doctorate in educational leadership at East Carolina University. She serves as the director of the Pirate Academic Success Center at the university.

EARL HESS (PhD, American Studies) published *Fighting for Atlanta: Tactics, Terrain, and Trenches in the Civil War*.

FOCUS IN HER OWN WORDS

Holly Okonkwo studies how race, gender, and place affect the experiences of women scientists and technologists of color. The applied anthropologist has worked with women in both the U.S. and Africa to gain a sense of their place within the science community. Here, in her own words, Okonkwo describes what she has observed:



CASARAE L. GIBSON

(MA 2009, PhD 2015, English) was named in April as the first Lender Faculty Fellow by the Lender Center for Social Justice at Syracuse University. The fellowship supports a two-year research project to explore contemporary social issues and develop innovative, sustainable solutions to these problems.

Gibson and a team of Lender Student Fellows will conduct a research project — titled “The Social Justice #Hashtag Project: A Digital Humanities Study” — where they select social media hashtags that exemplify causes that interest them and then develop approaches to those social justice concerns.

Their work will culminate with the 2021 Lender Symposium, where national guests and experts will discuss the Lender Fellows team’s research and proposals.

Gibson is an assistant professor of African American literature and studies in Syracuse’s College of Arts and Sciences. At Purdue, she studied under the mentorship of Venetria Patton, head of the School of Interdisciplinary Studies and professor of English and African American Studies.

Gibson’s forthcoming book manuscript, *There’s a Riot Going On! Racial Unrest in Black Arts Movement Poetry, Drama, and Fiction*, examines how artists challenged racial inequalities during the civil rights movement.

1989

ROBERT KESSLER (BA, Foreign Language) acquired ownership of Magnetize, a marketing agency in St. Louis, Missouri, that helps companies build brands to attract and retain customers and employees.

JACQUELINE “JACKIE” (LANDRUM)

KRETZ (BA, English) was promoted to manager of advancement communication for Marian University in Indianapolis.

1990

ANDY CAREY (BA, Foreign Languages; MA ’92, Spanish) was recognized by the Mexican government with the Ohtli Award for remarkable social leadership through more than 20 years of philanthropy and dedication to promoting Mexican culture. Andy is the executive director of the U.S.-Mexico Border Philanthropy Partnership.

CHRISTINE LAPPS (BA, Sociology) was appointed deputy commissioner of the Tennessee Department of Revenue. She previously worked in state and local taxation at Ernst and Young.

KENT SHIVELY (BA, Criminal Justice) is a board member of the National Desert Storm War Memorial Association and serves as the deputy director of planning and design.

1991

LOUIS VOELKER III (BA, Sociology) an attorney for Eichorn & Eichorn in Hammond, Indiana, was recently named to the Board of Directors of the Defense Trial Counsel of Indiana.

1992

TOM PRUITT (BA, History) was named a partner at William Blair, a global investment banking investment management and private wealth management firm located in Western Springs, Illinois.

1993

MARIA KEFFLER (BA, English) has published a series of young-adult books: *Drawn, Deo Volente*, and *Daemonia*.

1994

BRENTEN BYRD (BA, Sociology) is a board member of the National Desert Storm War Memorial Association and director of the communications committee.

JULIE (NOSKOWIAK) DUSSLIERE (BA, Russian) was named Chief of Paralympic Sport for the U.S. Olympic Committee in September 2018. Dussliere had been president of the Americas Paralympic Committee and was the first woman and first individual from the U.S. to hold the position.

JENNIFER MEIRING (BA, Communication) of Batavia, Illinois, published *A True Tale of a Chicken-Duck Named Chuck*.

1995

ALYSE (HOLZHAUSEN) KNUDSEN (BA, Communication) opened DukeAndLulus.com, an online shop dedicated to selling handmade home goods by makers in the U.S. Knudsen is the company’s owner, buyer, and marketing director.

STEPHANIE LEWIN (BA, Communication) was named head of global immigration for Envoy Global and is a member of the executive team. She sits on the Corporate Relocation Council of the Chicago Board of Directors and serves as the content committee chair for Worldwide ERC.

RYAN MESSER (BA, Political Science) was elected to the Cincinnati Public Schools Board of Education. He is a regional business director at Johnson & Johnson in Cincinnati, Ohio.

1999

SHAUNA (COLCLASURE) MEADOR (MFA, Costume Design and Technology) was promoted to chair of the Department of Film, Theatre, and Creative Writing at the University of Central Arkansas. She has been a faculty member at UCA since 2003.

2000

MATTHEW WADE (BA, English) published his third novel, *The Burgeoning Heart of Bambi Bazooms*. Matthew now lives in Durham, North Carolina.

2002

DIJA (PATHAK) HENRY (BA, Acting) wrote, produced, co-directed, and acted in the film *Breathe*, which examines the effects urban gun violence and poverty have on mental health. The film premiered on July 28 at GQT Hamilton 16 IMAX + GDX in Noblesville.

SCOTT L. JONES (PhD, English) was appointed as Lander University’s Provost and Vice President for Academic Affairs. Jones most recently worked for Indiana University Kokomo.

SEAN O’CONNOR (BA, Secondary English Education) is a literacy instructional specialist with Gwinnett County Public Schools near Atlanta, Georgia. He co-presented at the Southern Regional Education Board’s Making Schools Work Conference in Baltimore, Maryland. The presentation was titled, “Borrowing Best Practices from Basketball Practice: Focusing on Fundamentals and Feedback to Improve Classroom Instruction.”

2004

WILLIAM GREUBEL (BA, Political Science) joined Swanson, Martin & Bell as a lateral partner with a focus on medical negligence and health care.

JENNIFER SCHUSTER (BA, English) started a new position with the Indiana Utility Regulatory Commission as an administrative law judge.

2010

RICHARD SÉVÈRE (PhD, English) co-edited *Out in the Center: Public Controversies and Private Struggles* with Robert Mundy, Liliana M. Naydan, Anna Sicari, and Harry Denny, associate professor of English and director of Purdue’s Writing Lab. Sévère is an associate professor of English at Valparaiso University.

MEGAN WYSS (BA, History; BA, Political Science) joined Boyd Collar Nolen Tuggle & Roddenbery as an associate at their law office in Duluth, Georgia.

2012

EMILY HAAS (PhD, Communication) received an Arthur S. Flemming Award for her work to strengthen the safety culture in mining workplaces. Haas is a research scientist with the Centers for Disease Control and Prevention’s National Institute for Occupational Safety and Health.

LISA HANASONO (PhD, Communication), professor of communication studies at Bowling Green State University, received a “20 under 40” Leadership Recognition Award last fall. The award recognizes individuals in Northwest Ohio and southeast Michigan under 40 who have distinguished themselves in their career and/or the community.

2013

ADDISON BRADFORD (BA, Political Science) joined Hall, Render, Killian, Heath & Lyman in Indianapolis as an attorney focusing on real estate and construction law.

EMILY COX (BA, Fine Arts) was promoted to art director of the Villages in Dora, Florida.

MOLLY E. LONGEST (BA, Communication) had Lala Media Group, Inc., acquired by Her Campus Media. Longest co-founded and served as creative director of social marketing at the Lala, a millennial women-focused website and media company. Her Campus Media, a digital media platform that targets college and 20-something women, planned to rebrand the Lala as Her20s.

KATHERINE SUSEMICHEL (BA, Communication) was named director of project management and coordinator of marketing at Big Machine Label Group in Nashville, Tennessee.

2016

ALLISON KRAFT (BA, Political Science) completed a master’s degree in Museum Studies at IUPUI and started a new job at the Gilder Lehrman Institute of American History in New York City. Kraft is an assistant curator for the Institute.

2017

MAYESHA CHOUDHURY (BA, Corporate Communications) worked for an environmental education non-profit for the last two years, providing resources to educators and students throughout North America to enhance environmental literacy. This fall, she enrolled at Duke University to pursue a master’s degree in public policy with a focus in environmental and energy policy.

2018

SHERRIDAN ATKINSON (BA, Law and Society) was chosen as one of Purdue’s two Athletes of the Year for the 2018-19 school year. Atkinson was an All-American and All-Big Ten honoree for the Purdue volleyball team.

**MOVED?
NEW CAREER?
NEW NAME?**
Let us know about your life updates and professional accomplishments by emailing us at thinkcla@purdue.edu.



LORETTA RUSH

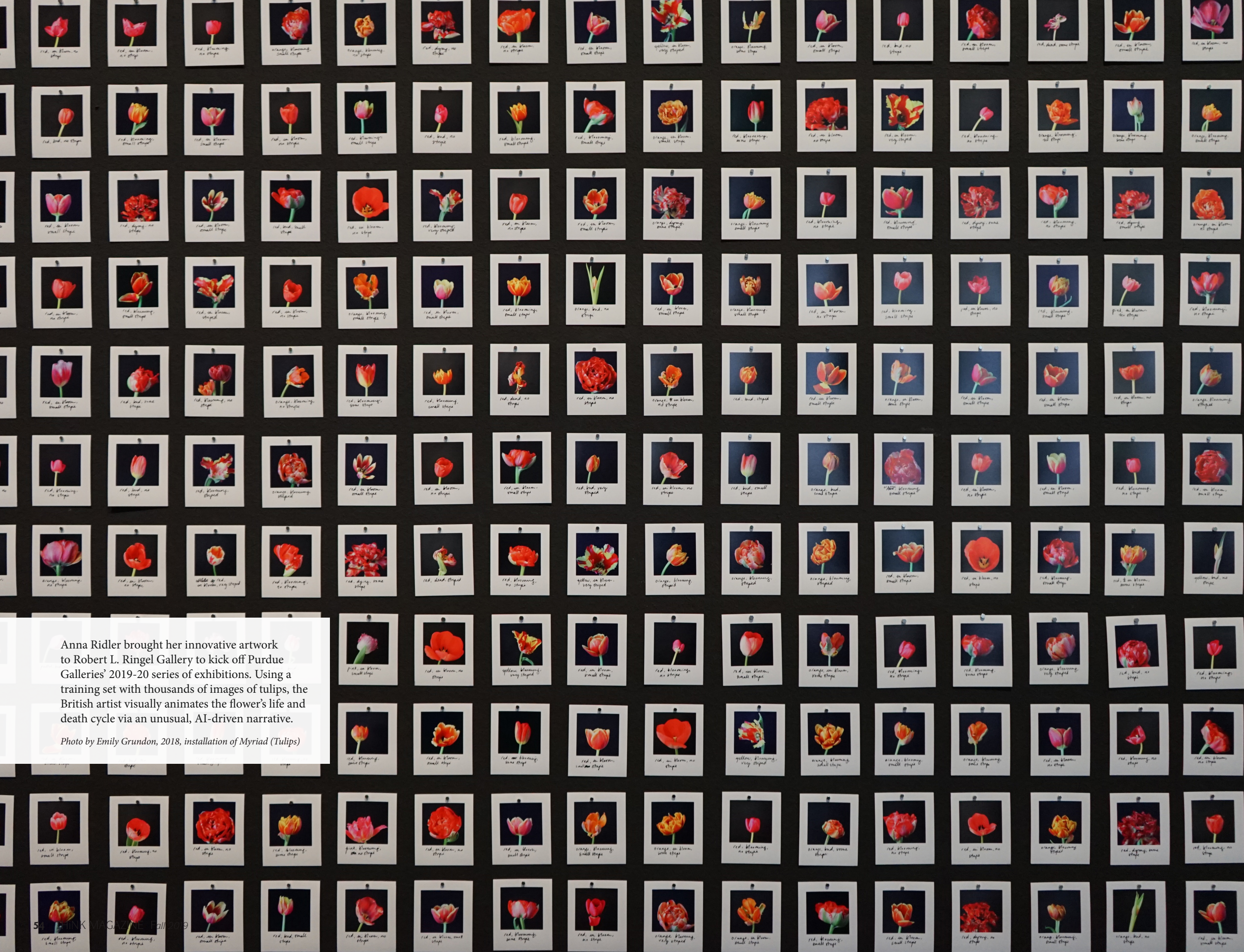
Last November, the Indiana Chamber of Commerce recognized Indiana Supreme Court Chief Justice Loretta Rush (BA 1980, History) as its 2018 Government Leader of the Year.

The business group credited Rush for her efforts to combat Indiana’s opioid abuse epidemic and for expanding the use of technology to improve access and efficiency within the statewide court system. Under her watch, the state’s trial and appellate courts have begun to offer litigants the ability to e-file court documents.

Then-Gov. Mitch Daniels appointed Rush, a 2015 College of Liberal Arts Distinguished Alumni Award recipient, as Indiana’s 108th Supreme Court Justice in 2012. She became just the second woman ever to sit on the state’s high court. Two years later, the Indiana Judicial Nominating Commission selected her for a renewable five-year term as chief justice. The commission reappointed her to another five-year term in August.

Rush currently serves on the Conference of Chief Justices Board of Directors and is co-chair of the National Judicial Opioid Task Force.

Prior to her appointment, Rush was elected Tippecanoe Superior Court 3 judge and served for 14 years. She previously spent 15 years in general legal practice in Lafayette.



Anna Ridler brought her innovative artwork to Robert L. Ringel Gallery to kick off Purdue Galleries' 2019-20 series of exhibitions. Using a training set with thousands of images of tulips, the British artist visually animates the flower's life and death cycle via an unusual, AI-driven narrative.

Photo by Emily Grundon, 2018, installation of *Myriad (Tulips)*



Iranian artist Amir Fallah's exhibition *Symbols*, which will examine the immigrant experience and notions of identity, will be on display at Ringel Gallery from March 30 through May 9.

LOOK ONLINE...

FOR A RUNDOWN OF PURDUE GALLERIES' UPCOMING EVENTS FOR 2019-20, VISIT:

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Purdue University

A stylized logo for the Purdue Online Writing Lab (OWL). The letter "O" is large and white, with a white outline of an owl's head and neck integrated into its shape. The letters "W", "L", and "L" are in a bold, white, sans-serif font to the right of the "O".

OWL

Did you know that the Purdue website that attracts the most traffic is not purdue.edu, nor is it the site for Purdue sports? Nope, it's the Purdue Online Writing Lab, which started 25 years ago as a repository for the Purdue University Writing Lab's wealth of resource documents and instructional material. Since its founding, the OWL has emerged as one of the world's top free online resources for academic and professional writers alike, drawing web traffic from all corners of the globe.

Join us in October at cla.purdue.edu/think as we recognize the invaluable service and training that the OWL has provided to millions of writers over the last 25 years and look ahead to what the site can become in the future.



**THINK BROADLY.
LEAD BOLDLY.®**