In which we discuss

STUDY ABROAD AMBASSADORS · THE HOMEMADE BREEDER REACTOR · FLOW

Also *The Weston Game Lab* · *Philosophers' huts* · Star Wars *and Religion* · *Butterbeer* · Strange Planet

The CORE

THE COLLEGE MAGAZINE

Summer 2019 Supplement to
The University of Chicago Magazine

Chris Miller, AB'89 (right) and Yucong Jiang look at a display of student publications, T-shirts, and other memorabilia during an Alumni Weekend donation event at Special Collections. To learn more about the specific items that Special Collections is seeking, see the final paragraph of "For future reference," opposite.

Photography by John Zich

INSIDE

Front cover: Photo courtesy International Swimming Hall of Fame
Back cover: UChicago Photographic Archive, University of Chicago Library.

From the editor

FOR FUTURE REFERENCE

Many years ago when I visited home, a high-school friend was cleaning out the house of a beloved elderly aunt. She had lived alone in a small ranch house across the street from the state college's library, where she was employed as a reference librarian. Weeks into his cleaning project, there were mountains of books and newspapers everywhere, separated by narrow, precarious canyon paths. Reference librarian, obsessive hoarder: the line between the two seemed both arbitrary and permeable.

In one pile I discovered a telephone book from the early 1960s. I looked up my dad (since usually only men's names were in phone books then). There was my parents' old number and the address of their first tiny house. Surprisingly, the listing also included my dad's occupation and employer: junior agronomist, Colorado State University.

What a goldmine this would have been for an economic historian, or anyone with an interest in local history. But my friend was overwhelmed. Off it went to the landfill.

I thought of that lost book during Alumni Weekend, when Special Collections held a donation event for alumni. Here's the kind of item that would spark joy for the archivists: UChicago T-shirts, buttons, posters, programs, flyers, journals, scrapbooks, photographs, and other College memorabilia. To learn more, visit https://mag.uchicago.edu/donation.

—Carrie Golus, AB'91, AM'93

THE CORE · *Supplement to the Summer 2019 issue of the* University of Chicago Magazine

EDITOR
Carrie Golus, AB'91, AM'93

ART DIRECTOR
Guido Mendez

DESIGNER
Michael Vendiola

CONTRIBUTING WRITERS
Susie Allen, AB'09
Jeanie Chung

COPY EDITOR
Sam Edsill

CONTRIBUTING EDITORS
Laura Demanski, AM'94
Amy Braverman Puma
Mary Ruth Yoe

773.702.2163 (phone)
773.702.0495 (fax)
uchicago-magazine@uchicago.edu
mag.uchicago.edu/thecore

The *Core* is published twice a year as a supplement to the *University of Chicago Magazine* by the University of Chicago.

Science

THERE'S A PLANE IN MY HAIR

It's the ninth week of spring quarter. Phoenix Biology and 10 other science clubs have gathered on the main quad for Sciencepalooza, a celebration of science and engineering.

Pau Oliveres, SB'19 (above, in white T-shirt) of chemistry club Benzene is making dairy-free coconut ice cream with a canister of liquid nitrogen, which has a temperature of 77 Kelvin, or negative 200 Celsius. "It will cause deep tissue damage if you stick your hand in it," Naomi Yamamoto, SB'19, explains nonchalantly.

"It's only dangerous if you dunk your hand in," Oliveres reassures a student waiting for ice cream. "See, it just got on my hand. It's fine."

There's also regular chocolate ice cream. As Alex Feistritzer, Class of 2020, (above, in black) is pouring it out, a paper airplane from the Engineering Club circles through the treetops and wedges itself in his hair. The propeller, driven by a tiny motor, buzzes softly. "I thought it was a cicada," Feistritzer says.

At the Paleo Club table, Marianna Karagiannis, Class of 2021, (above, right) shows off a cast of a velociraptor skull. Casts are often more useful than the original specimens, she explains, because you can take a cast apart and study the morphology.

Asked about her *T. rex* jewelry, Karagiannis notes that *T. rex* skeletons had traditionally been put together incorrectly, with the ulna and the radius reversed. *T. rex*'s tiny arms didn't stick up uselessly in the front; they stuck out (still a little uselessly) to the side.

—Carrie Golus, AB'91, AM'93

Scenes from Sciencepalooza, clockwise from top: Passing students stop to fold planes with the Engineering Club; Marianna Karagiannis, '21, and velociraptor skull; Alex Feistritzer, '20, (in black) stirring ice cream moments before a stray airplane settled among his locks.

Photography by Anne Ryan

What's new in the College

YOU SAY YOU WANT AN EVOLUTION

Summer research program in the Galapagos

Most people associate the Galapagos Islands with Charles Darwin, evolution, and a natural ecosystem of incredible biodiversity. But the archipelago is urbanizing rapidly—what were once small fishing villages are now dense towns with populations in the tens of thousands, and show no signs of slowing growth. This isolated environment presents a unique opportunity for urban scientists to measure the relationship between human development and the natural environment.

This summer the Mansueto Institute for Urban Innovation is partnering with the Universidad San Francisco de Quito (Ecuador) and the Melbourne School of Design (Australia) to conduct the 2019 Galapagos Urbanization and Sustainable Development Study. Four undergrads will spend a month on the islands doing research for the project: **Ryan Cutter**,'21; **Sam Joyce**,'20; **Jein Park,**'20; and **Amy Tian**,'21.

Quantrell Awards

Five faculty members were honored with the Llewellyn John and Harriet Manchester Quantrell Award for undergraduate teaching: **Albert Bendelac**, A. N. Pritzker Distinguished Service Professor of Pathology; **Claudia Brittenham**, associate professor of art history; **Berthold Hoeckner**, professor of music and the humanities; **Maryanthe Malliaris**, associate professor of mathematics; and **Mauricio Tenorio-Trillo**, Samuel N. Harper Professor of History and Romance Languages and Literatures.

Careers in the Humanities

The College's inaugural **Careers in the Humanities Day** in April immersed students in the highly diverse range of careers available to humanists. Students talked with alumni and employers representing digital media, film, journalism, music, publishing, theater, and more. The mentors in attendance had professional experience with more than 30 organizations, including Browne and Miller Literary Associates, Disney, Electronic Arts, Google, Netflix, Turner Networks, Warner Brothers Records, and W. W. Norton Publishers.

In the Galapagos (named after the Spanish word for tortoise), student research assistants will gather and analyze satellite, drone, and street-level imagery. Watch a short video about the project at https://mag.uchicago.edu/galapagos.

Photography by paulacobleigh


WESTON
GAME
LAB


ZELDA'S


CTRLS
Standard Interface

Gaming

PLAY TO THE CROWD

The Weston Game Lab—part of the new Media Arts, Data, and Design Center in Crerar Library—was dedicated in May. The 3,800-square-foot space is designed for the research and development of digital, board, card, and alternate reality games.

Top row, left to right: Playing Tetris with Octopads, modified Nintendo controllers that turn single-player games into group games; winners of the T-shirt design contest, including red shirt by *Core* designer Michael Vendiola; Dean John W. Boyer, AM'69, PhD'75, addresses the crowd; the lab's large collection of board and other traditional games, including an oversized Jenga set.

Middle: Students play *Super Smash Bros. Ultimate.* The lab hosts a weekly tournament that's streamed on the Weston Game Lab Twitch channel.

Bottom: Mocktails inspired by the red and blue potions in *The Legend of Zelda*; artist talk with Patrick LeMieux and Stephanie Boluk, authors of *Metagaming* (University of Minnesota Press, 2017); cookies shaped like a power-up mushroom from the Mario game series; playing *Soulcalibur VI*.

Photography by Gritanni Creative

Music?

GOODNIGHT TUNE

The bells of Mitchell Tower have inspired, or irritated, Hyde Parkers for more than a century.

The installation of the Alice Freeman Palmer Bells in the Reynolds Club's Mitchell Tower in 1908 delighted much of the campus community. Athletic director and Yale alum Amos Alonzo Stagg donated some money toward the bells' installation and upkeep, in part because of his fond memories of the bells in Yale's Battell Chapel ringing at 10 o'clock each night. Stagg requested a similar "good night chime" in Hyde Park for the University's athletes, "to speak to them of love and loyalty and sacrifice for their University, and of hope and inspiration and endeavor for the morrow."

But, as with everything at UChicago, there were mixed reactions. An anonymous letter received later that year complained about the "miserable clanging bells," calling them "a damned nuisance" and warning, "there surely will be an uprising in the neighborhood and an endeavor made to have your unseemly ding-donging stopped for all time" (Read the full letter online at https://mag.uchicago.edu/ding-dong).

As the uprising did not materialize, the ding-donging did not stop. Today, however, the UChicago Guild of Change Ringers limits its audible ringing to daylight hours once a month. The group's motto: *Crescat campanologia* (campanology meaning the study of bells).

Change-ringing is most common in England, where it's been practiced for centuries at churches, schools, and other institutions. Bell towers for change-ringing usually have six to 10 large bells, each rung by one person pulling a rope. Like the tower at Oxford's Magdalen College on which it is modeled, Mitchell Tower has 10 bells.

Change-ringing doesn't produce recognizable melodies as much as patterns: bells, each at a different pitch, ring in different sequences, organized in different combinations. The sequences change—hence the name. A signal achievement in a change-ringer's career is to take part in a peal: 5,040 changes rung on six bells, running through each of the 720 permutations seven times in varying order. A peal takes about three hours to complete and requires intense concentration from all participants.

It's the combination of teamwork, mental focus, and artistry that draws change-ringers like UChicago guild president Isabella Scott, SM'18, a graduate student in math who started change-ringing as an undergraduate at the University of St. Andrews in Scotland. The bells were a factor in her decision to pursue her doctorate at UChicago.

Prospective ringers don't need any special skills, but ringing does take practice. Novices learn timing on hand bells. "It was a couple of months before people were comfortable letting me ring a tower bell," Scott says.

The most common mistake new ringers make is to look up when they're ringing. In Mitchell Tower, as elsewhere, the bells hang above a ceiling and are not visible to the ringers as they're moving. But also, because change ringers work as a group, Scott says they need to be able to make eye contact as they ring.

During UChicago's practices, held Monday evenings, the bells

(Left to right) Change ringers Tom Farthing; Eric Stubley, SM'17; Timothy Black, SM'13; and Isabella Scott, SM'18, pose with the bells after a practice session in April.

Photography by John Zich

are silenced—their clappers are immobilized, but a sensor on each bell activates a computer-simulated chime so the ringers can hear it via speaker. The bells ring "open," audible to the surrounding area, between noon and 1 p.m. on the first Saturday of each month. Peals are rare at Mitchell Tower: the first took place March 22, 1975, and tower master Tom Farthing, who trains new ringers, estimates it's been at least 10 years since the last one.

With only 42 towers in the United States—and just three in the Midwest—guild members have driven up to seven hours to ring in Mitchell Tower. But Scott hopes to attract more participants closer to home. She's working on a change-ringing talk geared toward undergraduate math students, drawing on her work studying dynamical systems.

That mathematical rigor helped lure Greg Watson, AB'92, who began ringing as a first-year after hearing about the bells during Prospie Weekend. He enjoyed "the different patterns and different rules of how you move through the changes. You have these constraints in a way: How do you get to different combinations without repeating or without breaking the rules?" As a nonmusician, he also says it was his only real opportunity "to make a lot of noise publicly."

Once Watson started, he was hooked. He'd ring while home on breaks in the Washington, DC, area, which has four bell towers. One of the few College students to study abroad in those days, he spent his third year at the London School of Economics and joined the University of London Society of Change Ringers. With several bell towers in the London area, on Sundays the group often did a circuit of different churches.

Watson is still ringing 31 years later—he has rung across the US and Canada, as well as in Great Britain and as far as Sydney and Adelaide, Australia. A non-ringing family and a full-time job as a health care policy consultant in Northern Virginia limit him to a couple of times a month nowadays.

A highlight for him was ringing at St. Bartholomew the Great back in his London days, with its original bells reputed to be from 1510. Although the English ringers were used to ringing bells that old or older, Watson still marvels at the idea.

"How many other things can you use that are several hundred years old," he says, "that you're using for their original purpose in their original way?"

—Jeanie Chung

Fashion

MODEL STUDENTS

Photography by Alexandra Nisenoff, ’21

At MODA’s sold-out fashion show in February at Theater on the Lake, student models showed off the work of student designers.

MODA, the fashion club at UChicago, runs a Designer Boot Camp program where students learn sewing and construction in weekly workshops with a School of the Art Institute professor. During the camp, designers create three looks for the annual fashion show. See more photos, and read about the designers’ inspirations, at https://mag.uchicago.edu/moda2019.

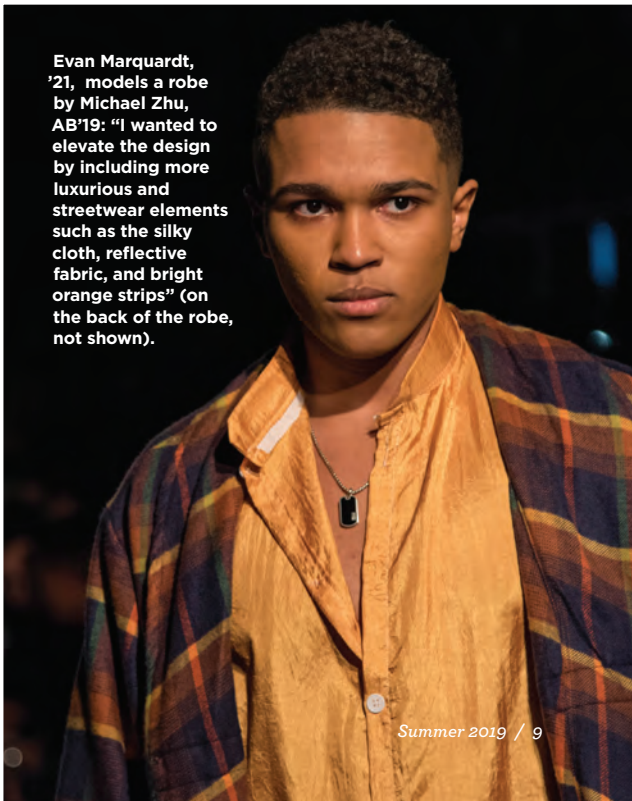
—Carrie Golus, AB’91, AM’93

Daria Shifrina, ’22, models the work of Kathryn Hicks, SB’19. The bolero jacket is made of drinking straws cut in thirds and strung together with floral wire.

Ella Trotter, '22, models a top designed by Sophie Harding-Jackson, AB'19. Inspired by striped shirts, she says, the design uses "fabric folds rather than shifts in color."

Yoo Jung Hah, AB'19, AM'19, wears a design by Talia Friedland, AB'19. Her collection's theme: "millennial trends that were a little cliché," such as the palm frond pattern, fanny packs, and the color "neo mint," one contender for the next millennial pink.

Ashanti Owusu-Brafi, '21, models a dress by Sophie Harding-Jackson, AB'19, inspired by the large intestine: "I liked the idea of using things that are definitely supposed to stay inside the human body as protection and decoration for it."



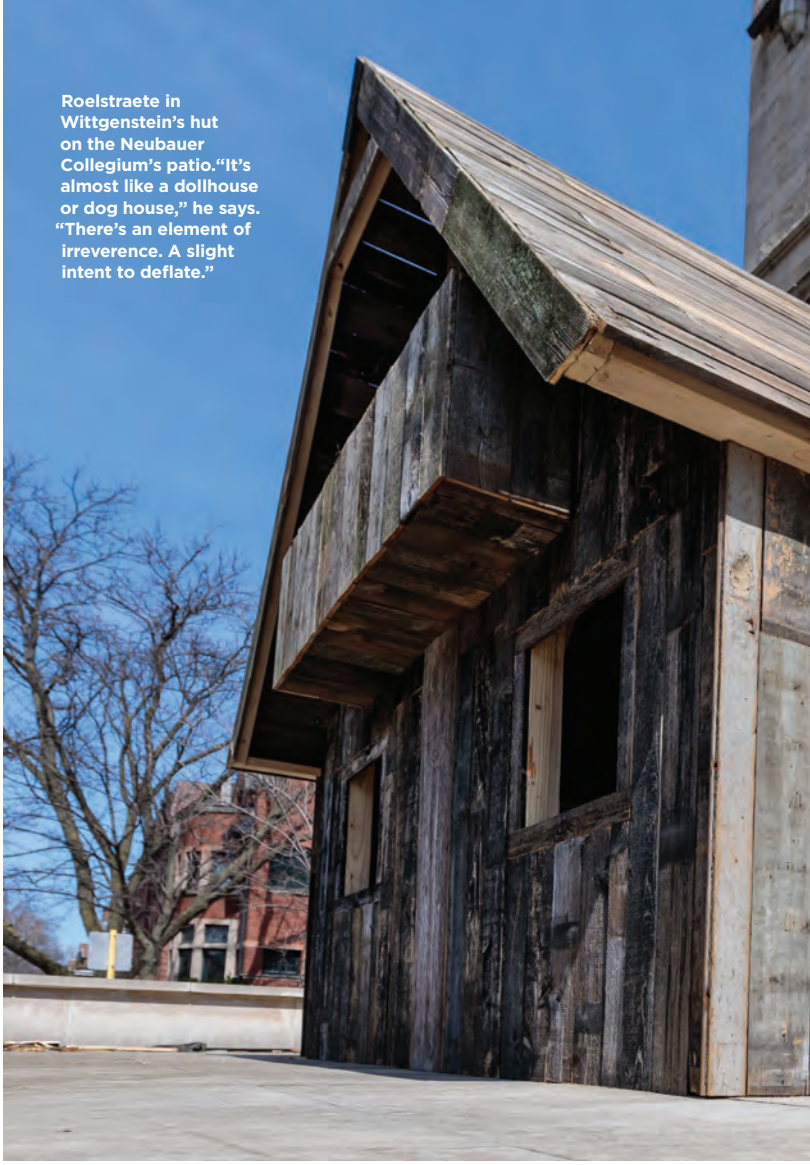
Evan Marquardt, '21, models a robe by Michael Zhu, AB'19: "I wanted to elevate the design by including more luxurious and streetwear elements such as the silky cloth, reflective fabric, and bright orange strips" (on the back of the robe, not shown).

Some of these images ran first in the *Chicago Maroon*.

Seen and Heard

A HUT OF ONE'S OWN

Dieter Roelstraete on philosophers and their man-caves.



Roelstraete in Wittgenstein's hut on the Neubauer Collegium's patio."It's almost like a dollhouse or dog house," he says. "There's an element of irreverence. A slight intent to deflate."

In April, two curious wooden structures materialized outside the Neubauer Collegium. On the patio, overlooking the busy corner of 57th Street and Woodlawn Avenue, is a scaled-down model of Ludwig Wittgenstein's remote hut near Skjolden, Norway. In the backyard stands a similarly diminutive replica of Martin Heidegger's Black Forest hut near Todtnauberg, Germany.

The huts, built by artist John Preus, MFA'05, are part of Hutopia, *a "compressed version" of an exhibition that curator Dieter Roelstraete organized for the 2018 Venice architecture biennial. During spring quarter Roelstraete taught an art history course, A Curating Case-Study: The Hut, about (and occasionally in) the exhibition. Read more in the Summer/19* University of Chicago Magazine.

How did you come up with this idea?

It's an old dream. I studied philosophy at the University of Ghent in the early '90s. The three philosophers who are the heart of this exhibition, [Theodor] Adorno, Heidegger, and Wittgenstein, have all shaped my curatorial practice and my writing practice. They're my guys.

Wittgenstein and Heidegger were born months apart in 1889. Both of these bizarre characters built themselves huts around the same time. When you go to the village in Norway that Wittgenstein escaped to, you understand that here is somebody who is turning his back to the world. When you go to the village in the Black Forest that Heidegger so very dramatically retired to, you understand it's more of a performance, which is interesting for the philosopher of authenticity.

Heidegger's hut is still standing. It's in the hands of the Heidegger family, who are notoriously reclusive.

His family is reclusive, but he wasn't?

He *acted* the hermit. He died in 1976. His children then inherited this holiday home. I think it's now primarily used by the grandchildren.

There's no emailing or calling the Heidegger family to try to get access to this hut, which is a very important structure where he hashed out *Being and Time* (1927). It's puzzling that the family should be so inhospitable, but it has to do with his Nazi past.

I believe where you think shapes what you think. It seems self-evident, but there's a long history in the philosophical discipline of mistrusting biography.

How does Adorno fit in?

Probably 10 years ago, I was leafing through a history of installation art, and I came across this picture of a peculiar sculpture by Scottish artist Ian Hamilton Finlay, *Adorno's Hut* (1989). Seeing that, a curatorial argument started to fall into place.

The first time I tried to visit Heidegger's hut, I couldn't find it. It proved to be this elusive ghost. I finally managed in 2017. You have to make your way underneath barbed

Photography by John Zich

wire. Literally hundreds of people go see this hut every year and do the same thing—basically trespass.

I went to visit Skjolden. Wittgenstein's hut no longer exists. I also traveled to LA to see where Adorno lived in exile in the 1940s after the Nazis seized power.

What was that like?

A nondescript bungalow in Brentwood. A photograph will be in the exhibition.

Of course there's a variety of reasons why I'm interested in these huts.

Like what?

On the surface—and this is why it originated in the lap of the architecture biennial—it's about a very primitive architectural form. The blueprint of the hut is the source of all architecture, right?

It's also about the mirage of escape. The dream of withdrawal. Which we all crave. Who wouldn't want to be in the woods for a week? But escapism is an irresponsible stance.

We all know the philosopher's hut is a man-cave. These men are intellectual giants, philosophical giants, but they were also humans, and, it seems, terrible failures at being human. So this is not a celebration of these huts. It's also not a denunciation.

Where do you do your own thinking?

This sounds corny, but I like to walk, which is a very philosophical enjoyment. Nietzsche was a famous walker. Kant, Schopenhauer, Rousseau. Not just anywhere—not on some freeway in LA or something.

Can people go in the huts to philosophize?

You can. Wittgenstein's hut is going to have two chairs in it. Probably wooden chairs from Chicago Public Schools, courtesy of John Preus, who has a massive stack of them in his studio. [In 2013, then-Mayor Rahm Emanuel closed nearly 50 CPS schools; Preus salvaged some of the furniture.] For those who want to think about the fate of public education, they're welcome to do so in Wittgenstein's hut.

Why two chairs? Shouldn't there be one?

This is a train of thought I owe to Finnish philosopher Thomas Wallgren. His critique of *Machines à penser* [the exhibition at the Venice architecture biennial] was there is inevitably an element of celebration in highlighting isolation. True philosophical thought is dialogical.

Obviously the corner of 57th and South Woodlawn is incomparable to the village in Norway where this hut arose, but you can just sit there and ponder if you want.

Do you have to make a reservation?

No. With Heidegger's hut, you can walk in from the street. It is technically available for homeless people. We'll see. This is an exhibition about shelter and seeking shelter for thought. A door and a lock would have felt wrong.

These huts are very rudimentary remakes. They're platonic reductions. My hope is that philosophy nerds will walk by and say, "Hey! That's Heidegger's hut!"

—Carrie Golus, AB'91, AM'93

When Kornfeld first started competing in 1987, backstroke was one of the two strokes she knew. Now she's an international record holder.

Sports

"IF YOU CAN'T OUTSWIM THEM, OUTLIVE THEM"

A Hutchins-era graduate exercises her way into the record books.

Photo courtesy International Swimming Hall of Fame

Maurine Kornfeld, AB'42, AM'48, wishes she could make it back for more reunions, but they tend to conflict with her swim meets.

Kornfeld, who set her first world record at 90, was inducted into the International Masters Swimming Hall of Fame in 2018. She has set seven long-course and 20 short-course international masters records in the individual medley, freestyle, and backstroke. (A long-course, or Olympic-size pool, is 50 meters; a short-course pool is 25 yards.) At the 2017 World Masters Championships in Budapest, the then 95-year-old was the oldest woman competing in the meet, setting a world record in the 95–99 age group in the 800-meter freestyle. In four world championships, she has won 14 gold and four silver medals.

But when she started competing in 1987, she was just trying to find a time to work out. Her full-time job as a social worker left her Saturday mornings free, but when she went to the pool at the YMCA in Glendale, California, the staff told her it was closed for masters swimming practice. If she wanted to swim at that time, she'd have to join the team.

Despite having no competitive experience at all, she called the coach.

"He said, 'What's your stroke?' and I said, 'None in particular.'"

At her first practice, she had no idea what the coach meant when he told her to swim a 50. "Fortunately he pointed to the end of the pool and back," she says—25 yards each way. "He kept shouting at me, 'put your face down.' I didn't know anything about goggles. I just liked to swim."

She stuck with it, and two months later the coach told her she'd be swimming in her first meet. As the only swimmer in the 65–69-year-old novice division, she won two blue ribbons: in the 50-yard freestyle and the 50-yard backstroke, which were the only strokes she knew.

Today she swims with the Rose Bowl Aquatics team in Pasadena, driving four times a week from her home in the Hollywood Hills. Her favorite event is the 200-meter backstroke, but a greater attraction for her is the camaraderie.

"I want to get up at five in the morning to see my swim pals," she says. "Meeting and connecting with people who are different from oneself, who are younger, different ethnic backgrounds, all kinds of occupations—it's both amazing and wonderful. It's a little like being back at the University of Chicago."

Her studies at UChicago made as big of an impression on Kornfeld as her fellow students. She remembers taking The History of Ideas with University president Robert Maynard Hutchins and Mortimer Adler: "It was a pretty heady experience."

UChicago fostered a love of literature, evident at her Hall of Fame induction ceremony last September when she quoted Robert Browning's poem "Rabbi Ben Ezra": "Grow old along with me! / The best is yet to be, / The last of life, for which the first is made." Later in the speech she mused, "I'm so glad they say it's healthy to swim, because even if it weren't, I'd do it."

When she's not swimming, Kornfeld works as a docent at the Los Angeles County Museum of Art—a role she stumbled into when she was there doing research for an art history course she was taking. She also gives tours at Los Angeles's Union Station, the Frank Lloyd Wright–designed Hollyhock House, and the House of Blues. Her only frustration: "There are always more things to do than there's time to do them."

—Jeanie Chung

MAY THE COURSE BE WITH YOU

In Star Wars *and Religion, Russell Johnson, AM'15, PhD'19, uses the famous franchise to teach comparative religious ethics.*

Illustration by Michael Vendiola

Not very long ago (spring quarter), in a classroom not very far away (Swift Hall 106), Russell Johnson, AM'15, PhD'19, is explaining Joseph Campbell's notion of the hero's journey. The words "Story Structure" are on the slide behind him, along with the Death Star and the *Star Wars* logo.

The old-fashioned, wood-paneled lecture hall, filled with row after row of wooden desks, is more evocative of the classroom scenes in *Indiana Jones*, George Lucas's other blockbuster series, than *Star Wars*. As in Dr. Jones's classes, every seat is taken.

Star Wars and Religion, according to the course description, "is an introduction to comparative religious ethics, using the *Star Wars* film franchise as a point of reference to discuss different conceptions of heroism." Lucas borrowed from a number of religious traditions—Buddhism, Christianity, Taoism—to create the world of *Star Wars*, he's said in interviews. Johnson, a doctoral student in Divinity (now PhD'19), designed the course to look more closely at those influences.

The 17-stage hero's journey that mythologist Campbell developed is "weird and complicated," Johnson tells the class. Although *The Hero with a Thousand Faces* (Pantheon Books, 1949) is an assigned text, today's lecture focuses on the story circle, a simpler, eight-step version of Campbell's monomyth created by screenwriter Dan Harmon in the early 2000s.

At the top of the circle, the character begins in a zone of comfort. They want something; they enter an unfamiliar situation; they adapt to it. At the bottom of the circle, they get what they want; they pay a heavy price for it; they return to their familiar situation. Back at the top again, the character has changed. "The audience has an instinctive taste" for stories structured like this, says Johnson.

"Harmon says everyone can have a story arc," he continues. In the original *Star Wars* films, for example, Luke Skywalker has a story arc—but so does Han Solo. "C3PO has a really interesting arc," Johnson points out; in fact he and R2D2 are the first characters we meet in the original 1977 film. "Maybe C3PO is the main hero."

The change at the end of a story is what sets truly compelling narratives apart from, say, *James Bond* movies. "James Bond isn't really a hero, because he doesn't change," says Johnson. "He's the ultimate suave badass. He goes to all these fantastic-looking foreign countries. There's cleverness, violence, and seduction. And at the end, he's still the ultimate suave badass."

Luke Skywalker: "What do you know about the Force?"

Rey: "It's a power that Jedi have that lets them control people and make things float."

Luke: "Impressive. Every word in that sentence was wrong."

(from Star Wars: Episode VIII—The Last Jedi*)*

A few weeks later, Johnson has graded the students' first papers, a four-page analysis of the Force in *Episodes IV–VI*, in response to Rey's "wrong" definition. The students' conceptions "were probably a lot more different than you would realize," he tells the class. "The text supports a wide array of diverse interpretations, like the book we're reading today."

That book is the *Tao te Ching*, as translated by science fiction author Ursula K. Le Guin. (The success of her widely praised version is all the more striking because Le Guin didn't speak Chinese. She put it together based on earlier translations, the Chinese alphabet, and consultations with scholar J. P. Seaton.)

There's a "general consensus among historians" that Jesus and Mohammad existed, Johnson explains, "but opinions are more skeptical on Laozi." The name means "Old Master"; perhaps the text attributed to him came from a school of thinkers. "Textual evidence seems to support this theory."

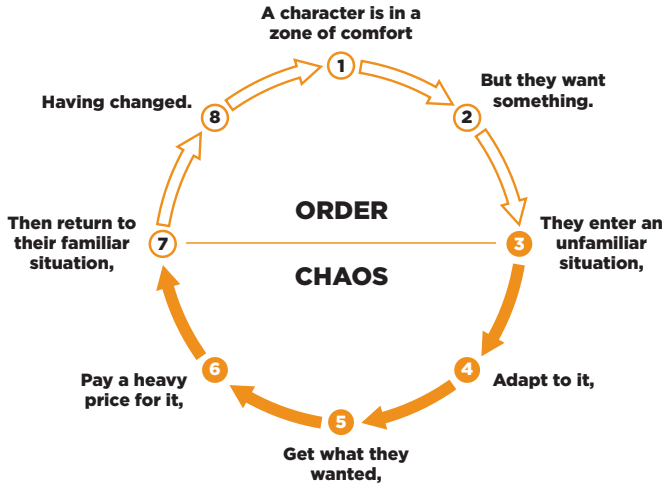
Johnson goes over a slide of key terms in Taoism: *tao/dao* means way; *te* is power, virtue, excellence, charismatic force; *wu-wei* is not-acting. "Clearly these concepts are rich enough to allow for a lot of different ways of being read," he says. "It's not that the *Tao te Ching* makes perfect sense in Chinese. If anything, Le Guin tightened it up a little bit."

In the next class, Johnson lays out a multi-point argument that "the worldview of *The Phantom Menace* is to Taoism as Taco Bell is to Mexican food," he says. "Which is to say, not authentic, but an effort has been made."

For example, Taoist texts are critical of control and planning. Similarly, throughout *Star Wars: Episode I—The Phantom Menace* (1999), Obi-wan Kenobi's mentor Qui-gon Jinn (Liam Neeson), demonstrates calm acceptance of events, good or bad—"somewhat like the Taoist sage,"

Johnson (at far left, dressed as Jedi master Mace Windu) and his students pose for a costume-optional group photo on the last day of class.

Harmon's Story Structure



Johnson says. "Everyone else in the movie is stressed and worried about things, but not Qui-gon."

Johnson gives numerous examples of dialogue that support his argument (including some from that polarizing figure, Jar Jar Binks—recently revealed, incredibly, to be Lucas's favorite *Star Wars* character). When Obi-wan asks what might happen if their plan fails, Qui-gon responds, "Plan? Who said anything about a plan?" The end of the film shows both Anakin and Jar Jar "succeeding through failure," echoing Taoist stories in which success is achieved by accident, by living in the moment rather than trying.

Every year, the Divinity School invites graduate students to pitch ideas for innovative undergraduate courses; Johnson's was one of two that were chosen. In a typical comparative religion class, "one religion is presumed as the standard, usually Christianity," he says. He wanted to try using "something non-religious as a standard of comparison for all of these."

The course attracted some hard-core fans who showed their love by wearing *Star Wars* T-shirts to every class. There were also students who had never seen a single film. So Johnson set ground rules: only the films would be discussed, not television shows, books, or comics. "We had to exclude a lot of material within the canon," he says, smiling at the similarity between fan terminology and religious language.

Johnson grew up watching the original trilogy on VHS. When the first prequel, *The Phantom Menace*, came out, "I, like the rest of America, saw it and was disappointed," he says. His students, however, "have always lived in the world in which the prequels exist." Johnson had to adjust to the younger generation's terminology: "If you were around in 1977, *Star Wars* was just *Star Wars*." But his students know the film by its new name, *Star Wars: Episode IV—A New Hope*, and they don't refer to prequels or sequels, just *Episodes I—VIII*.

Johnson's academic work focuses on communication ethics, especially during social conflict. The overlap between his dissertation and the *Star Wars* course, he says, is an interest in how different religious traditions conceive of good and evil.

Next year, Johnson begins a two-year postdoc in the Divinity School. He'll teach classes in the Humanities Core as well as another course of his own design, Villains: Evil in Philosophy, Religion, and Film. The course—which features Cruella de Vil from *One Hundred and One Dalmations* (1961), Erik Killmonger from *Black Panther* (2018), the shark from *Jaws* (1975), and others—was partly inspired by a quote from screenwriter John Rogers: "You don't really understand an antagonist until you understand why he's a protagonist in his own version of the world." That's exactly what got Johnson interested in ethics and philosophy, he says: "the irony that tremendous suffering can result not from malice, but from people trying to do the right thing as they understand it."

Asked for his favorite *Star Wars* film, Johnson says, "*The Empire Strikes Back* [1981] is the best of the *Star Wars* movies. That is not a controversial view." But it also doesn't answer the question. "*Return of the Jedi* [1983] was my favorite as a kid. It's still my favorite," he admits. "When I was a little kid, I liked the ewoks, it was funny and bright. I don't know. I'm not 100 percent sure why. I just like it."

—Carrie Golus, AB'91, AM'93

Photography by Charissa Johnson

ASK AN AMBASSADOR

Got questions? Study Abroad's new student ambassadors have answers.

By Carrie Golus, AB'91, AM'93

How much stuff should I bring? How much money? Backpack or rolling suitcase?

"Really logistical questions" are typical, says Study Abroad ambassador Marissa Combs, AB'19, who studied in Pune, India, in 2017. ("Younger people call it Pu-NAY. Older people tend to call it Pu-NUH. I say Pu-NAY.") She estimates that 20 or so undergrads have sought her out to ask advice.

For another common set of questions, "Were you scared? Were you nervous?", Combs has a standard (and inspiring) answer: "Be fearless," she says. "If you approach whatever program you're in with an open mind, you will learn so much about the place you're going to—and yourself and the place you come from. Just lean in." The Core *spoke with Combs and two other ambassadors, Julia Selch and Addison Jeske, both AB'19, about their study abroad experiences and their advice.*

Interviews have been edited and adapted.

Marissa Combs, AB'19

Major: Sociology
Minor: Environmental and Urban Studies
Study Abroad Program: Pune: South Asian Civilization in India

I approached Study Abroad from two perspectives. One was practical: I was looking for a civ program. Secondly, I did not want to go to Europe. It's bor—I don't know. I feel like we spend so much time learning about European civilization, culture, and society. Sure it would be a lot of fun, but it wouldn't be the most informative or transformative experience.

In Pune we lived in a hotel. I was like, who am I, Eloise? We had breakfast together every morning, and we'd practice the language with the staff, and we had dinner every evening. Even though at first it was strange, it ended up being lovely.

The park that we would pass through to get to the UChicago Center in Delhi—which is right next to an Audi dealership—has an enormous homeless population. You are confronted, every single day, with wealth inequality. As a traveler, that's troubling. What's your responsibility to help? I was traveling on a pretty tight budget. In Chicago I can feel overwhelmed by the wealth that some of my peers have, and yet I had the reverse experience there. It was a reflective moment.

The neighborhood where I grew up in New York is 50 percent Indian or of Indian descent. All my best friends were from India. So the music, the food, the customs, I was really familiar with. All the other stuff you learn in civ—political and social and cultural history—was really unfamiliar. When traveling, I always err on the side of being conservative, being quiet, being a listener not a doer at first. That's good practice anywhere.

Fall is a great time to study abroad because you have that built-in summer and winter break time. At the end of the program, my friends and I took almost three weeks to travel independently in India. I was traveling with a core group of five and each of us had a task: planes, trains and automobiles, lodging, food, budget. It was highly planned, but I as an individual didn't have to do a lot of planning.

Indian cuisine is really varied. When you're traveling, don't just get your typical butter chicken or vegetable curry—try something regional. Go easy on the food in the first week, but expose yourself early to street food, because that's where all the good stuff is. The best meal for lunch in Pune is a pav bhaji, which is a loose light airy bread with a vegetable or chicken curry. It's the best thing in the world. I didn't discover the pav bhaji until sixth week, and then I think had one every day. I wish I could bring the food back with me.

Combs on a group trip to the Taj Mahal, after weeks of studying Indo-Islamic Mughal architecture: "It was one of those places where you expect to be overwhelmed and amazed, yet it somehow manages to be even more spectacular and breathtaking than you had imagined."

Photo courtesy Marissa Combs, AB'19

Selch at Kinkaku-ji (the Golden Pavilion), a Zen Buddhist temple in Kyoto.

Julia Selch, AB'19

Major: History and East Asian Languages and Civilizations
Study Abroad Program: Kyoto Consortium for Japanese Studies Direct Enrollment

I was planning on doing this program since high school, and had studied Japanese for six years. But when I first got to Japan, I was so focused on being grammatically correct that I would not say anything. I realized I had to learn the language anew—to speak practically, not from a textbook. It's better to make a mistake than just be silent.

I lived with a host family, which I would recommend. I had friends who lived in apartments by themselves. When they got home from school, they would be like, "It's English time!" but I tried to make my entire life Japanese. I would listen to Japanese music, watch Japanese TV, just inundate myself with Japanese material. By the time I left, I was fluent.

Every day was a challenge. Sometimes after dinner I was so tired from school, I would pass out on the couch in the living room while my host family was watching TV. My brain had just been on fire the entire day. I got to a point in the year where I didn't have English anymore. I had some American friends, but we would speak in Japanglish.

In my town I was the only person who was not Japanese. They all knew me, so if I did anything wrong, it would be very awkward. You go through periods of it bothering you, and it just being comical. Comical because I could be the token American girl in places, and I would make friends by virtue of that. I could practice Japanese anywhere.

In Japan, you defer to your speaking partner. You protect the feelings of the group a lot. People are hesitant to say their individual opinions—they're very cognizant of the group and not injuring anyone else's viewpoints. That was very different from my college experience here, where everyone just says whatever they want with no regard to other people.

As an American, you'll be excused for a lot of mistakes, but they'll internally judge you a lot. You can't jaywalk ever. I'm from New York and it's a necessity. One time, a few months in, I was so frustrated. There were no cars, and I knew I wasn't supposed to, but I was burning up inside. As I was crossing the street, I saw a woman teaching her child: "You see this American girl? Don't do what she's doing."

One thing I did not realize is that in Japan, you use cash everywhere. Also, people still use CDs and fax machines. It's really advanced in some ways and backwards in other ways.

My advice would be, think long and hard about whether you want to be gone for an entire year. Also, every hour that you're there counts. When you're walking around, read everything, listen to everything, do everything. Don't take this opportunity for granted.

Jeske at the Villa del Balbianello on Lake Como during a weekend trip to Milan.

Addison Jeske, AB'19

Majors: Public Policy and Economics
Minor: History
Study Abroad Program: Rome: Antiquity to the Baroque

I'm pretty involved with RSOs on campus: Ballroom and Latin Dance Association, Catholic Students Association, peer ministry at Calvert House, I play the carillon. For me, Study Abroad gave me the opportunity to take a step back. If you don't, it feels like you're trying to live your life on campus while you're abroad, and that is wasting the chance.

I was the only practicing Catholic in the program. I made sure I went to Mass when traveling, which was most weekends. Before study abroad, I would just disappear for an hour. But when you're traveling, you need to know where everyone is. Finding a Catholic church in Italy is not a hard thing, but being able to talk with your friends about your faith openly and honestly, and making sure they understand why it's so important to you—that was sometimes challenging. The advice I would give is, if you're going to live your faith, live your faith.

Often I went to Mass in Italian. I was in intermediate Italian for the program, because I had taken a year on campus—that doesn't mean I'm good at Italian. If you put most Catholics in a mass in any language, they'd be fine. I went to one Latin pre-Vatican II Mass in Salzburg, which was interesting.

When you're choosing where to study abroad, obviously location is important—not just the country you're staying in, but its proximity to other places. For example, if you're studying in Pune, it's unlikely that you're going to travel outside India during that program. The second thing is, what does UChicago have there? In Paris, there's a big center and you live in a dorm. Some places you stay in homestay, some places in apartments. The differences between those are pretty big. That was something I didn't think about at all, but I was totally fine with living in an apartment with other students.

I had a Metcalf internship in Chicago and worked two other jobs to make sure I had money to go. I saved money for eating out on weekends by making the same one-euro meal every day during the week. I bought a few bags of pasta, marinara sauce, red peppers—and if I was feeling super splurgy, ground beef—with onions and garlic. I made a huge bowl of pasta with marinara sauce and veggies and some cheese on top. It was a very nice, wholesome Italian meal.

I did eight different trips on weekends, spending half of that in Italy. Ideally I spent less than 50 euros total for travel. I visited Pisa, Lucca, and Orvieto on my own, which was really nice. I traveled to Dublin over Thanksgiving, and after the program I went to Salzburg, Nuremberg, and Munich. Before the program I went to London and had a brief stint in Paris.

For budget travel, doing research in advance is the most important thing. The times when I had the worst meals were the times when all the restaurants I had picked out were closed. You can pay a lot in time to save money in dollars.

Photos courtesy Julia Selch, AB'19; Addison Jeske, AB'19

Souvenirs

1,000 WORDS

Every year Study Abroad sponsors a photography contest for undergrads. The rules encourage photos that "capture locally characteristic phenomena, scenes, and people without falling back on the picture postcard monuments that we all know only too well." Here is a selection of winners and honorable mentions from past years.

Clockwise from top left: Yoga on the Grand Bazaar in Istanbul, Turkey (Angela Shen, AB'16); *correfoc*, or "fire-run," in Barcelona, Spain (Sahil Chatterji, AB'18); a youth dance troupe in Johannesburg, South Africa (Liz Adetiba, AB'17); hiking at Wadi Rum, Jordan (Maggie Bader, '20).

Clockwise from top left: Mount Huangshan, China (Madison Lo, AB'18); Alta Acqua Libreria in Venice, Italy (Annabella Pinton, '20); "Les Baguettes Volantes" at Château de Vaux-le-Vicomte near Paris (Ioanna Aguilar Mendez, AB'16); camel racetrack in Al Ain, United Arab Emirates (Laura Naccarato, AB'11).

STUDY ABROAD BY THE NUMBERS

In 1983–84, the College took its first tentative steps toward offering study abroad programs. This year, it hit a milestone: 10,000 students who have studied abroad.

Programs offered in 1983–84:

2

Programs offered in 2018–19:

60

Undergrads studying abroad in 1983–84:

2

Undergrads studying abroad in 2018–19:

620

Faculty who have taught abroad since 1997, when faculty-led programs were introduced:

382

Programs offered in a language other than English:

12

Next academic year brings another option: three-week September courses before autumn quarter begins. These include Florence: Living with History; Paris: Law, Letters, and Society; and Hong Kong: Human Rights in Asia.

THE HOMEMADE BREEDER REACTOR

An excerpt from *We Made Uranium! And Other True Stories from the University of Chicago's Extraordinary Scavenger Hunt*

By Fred Niell, AB'99

Photography by Buffy Wajvoda, SB'01

***Item 240.* A breeder reactor built in a shed, and the boy scout badge to prove credit was given where boy scout credit was due. [500 points]**

It was spring quarter 1999. Justin Kasper [AB'99] and I were roommates and physics majors, and we had just sent our acceptances to graduate school. We were looking forward to coasting for the last three months of college and we weren't really concentrating on our studies. We were too busy . . . "accessing" the physics department after hours for our assorted nefarious purposes. Once I assembled a 1.2GW (that's right, gigawatt) pulse power system for—well, let's be honest. It was for blowing stuff up. Justin (J for short) and I had stolen some parts and bought others, used the machine shop at all hours, and basically hewn this thing from the primordial forces of nature herself. It was amazing, and in the following weeks we blew up whatever we could get our hands on. We vaporized apples and made water explode like dynamite. We were gods in the lab from eleven at night until six in the morning. We cleared out before any of the staff arrived to open up.

We were misbehaving, but not in a malevolent way. We were applying

Apparently it is not dangerous to smoke near a nuclear reactor. The radiation bunny suits were "just theater," Niell says.

what we had learned in our advanced lab classes in a practical setting. In essence, we were being good experimentalists. The faculty may even have known this, but plausible deniability, in the words of one of my favorite physicists, goes a long way.

This paradise, this Eden of partying and blowing stuff up for class credit while breaking as many university rules as possible, lasted for a few months. Then the 1999 Scav Hunt came along.

Initially, I wasn't interested in putting much time or effort into Scav that year. I was by then working full time at the Fermilab, a Department of Energy national lab near Chicago specializing in high-energy particle physics, while also taking a full load of those core classes I was supposed to have already finished. Every night I brought home cheap beer, and J and I blasted techno from our embarrassingly large and complex stereo system and threw parties in our dorm room. Cocktail parties and Tuesday parties and "day-of-the-week-ending-in-Y" parties. Why would I plug into the frenetic energy required by the Hunt when I was already burning the candle at both ends and dousing it with gasoline? On the night of List Release, I skipped the midnight reading. I went downtown instead and had some fun with my friends.

The next morning, in the dining hall, I was minding my own business (working the newspaper Jumble) when Connor Coyne [AB'01] ran up to me and threw down his tray. He nearly spilled his breakfast on me, grinning like an idiot and saying something about "the reactor."

"What?" I said.

"There's a nuclear reactor on the List!" he said. "There's an article about him—the Nuclear Boy Scout. You have to go look it up! You know how to make a nuclear reactor, right?"

I figured that Connor had slept maybe thirty minutes in the last seventy-two hours, and it was only Thursday morning. His tone bounced somewhere between desperate and manic. I explained that a nuclear reactor is a complex device, and that the physics involved is too complicated for a Scav Hunt item. He answered that the item was worth, like, infinity points and that if we (Justin and I) built something, Mathews would totally win. Back then, Mathews House was its own team, and all forty-five or so of us faced the barbarian hordes alone. I told Connor that I would look into it, but I still didn't believe that there could be something as insane as a nuclear reactor on the List. I mean, really, how irresponsible were the Judges, and how lame were the "reactors" that other teams put together going to be?

After work I stopped at the library and found an article in *Harper's* about David Hahn, "the Nuclear Boy Scout," who had built a modest but plausibly functioning nuclear reactor in a shed in his backyard. Much has been written about David (RIP) in the intervening twenty-plus years, but in the end he did accomplish something in his garden shed. He had assembled a neutron source of some impressive strength for a total amateur, and when unleashed, it met the loosest definition of a nuclear reactor one can imagine. Then the Environmental Protection Agency got involved—but that's another story. An idea was seeded in my brain. On the way home, I ran into Geoff Fischer [AB'00], a friend and a Judge. No hello or anything. "Are you guys really going to build a nuclear reactor?" he asked. The rumor mill was already in full swing.

I told him I'd need a little clarification on what they meant by "nuclear reactor," and Geoff put me on the phone with Tom Howe, the Head Judge. "A net-power-positive nuclear reactor that could power a city or even a hair dryer is incredibly dangerous and insane," I told Tom. "It's certainly not in the spirit of the item." Item 240 said that the Judges would give credit where Boy Scout credit was due. It clearly referenced Hahn's experiment and not the type of multimegawatt fuel-recycling reactor that Connor and Geoff seemed to be envisioning.

The breeder cycle, for those of you who don't know, creates a larger amount of fissionable fuel material than it uses. By recycling this product, it is able to efficiently generate a large amount of nuclear power, which is why these reactors were popular in the first place. "We can demonstrate the breeder cycle," I told Tom. "We can turn thorium into uranium and uranium into plutonium."

"That's all we want," said Tom, "but we'll have experts there to make sure you're not jerking us around. So be prepared." And he hung up.

By now it was Thursday night. J came home from work and we talked about the idea over a few beers. We agreed that we could use a simple, highly active alpha source to create a weak neutron howitzer that could, in turn, create thermal neutrons. Just like what we used in our physics lab experiments. From there we could make small quantities of whatever isotopes we wanted.

Top to bottom: Niell during a nighttime experimentation session. Setting up an experiment with zinc. Niell's notes on the results: "Fine zinc powder hit with roughly 25kA of current. Immediate explosion, rapid oxidation. Loud." Read more at https://mag.uchicago.edu/niell.

With thorium[1], it's only a double capture up to uranium with a big cross section.

From there it's another capture up to plutonium, but whatever. We had all weekend, man.

All we needed was a proportional tube and a pulse height analyzer, a NIM crate with preamps and high-voltage power supply, and a few check sources to do a rock-solid calibration. I already had a good alpha source (a few microcuries of radium from World War II–surplus aircraft gauges) and thorium dioxide (from the inside of junk vacuum tubes from old TVs that we had salvaged). All we really needed was analytical equipment to verify that it all worked.

The next day, Justin and I visited our favorite lab coordinator, Van Bistro, and asked him ever so nicely if we could borrow a pulse height analyzer, proportional tube, and all the other stuff we needed "for an experiment." Plausible deniability in full effect, Van even loaned us some check sources so we could do an appropriate calibration. All told, we probably signed out on the order of $20,000 worth of highly sensitive equipment. Van basically told us that if anyone so much as sniffed in his direction, he'd claim it was all stolen. And that he had photos of the thieves. We thanked him and carted the junk off to our dorm room.

That night, Justin and I went out to Fermilab to pick up some radiation bunny suits before disappearing into the machine shop. We soldered together some pieces of scrap metal to make an appropriate holder for the radium and thermalizing carbon sheets. It was mostly built of aluminum scrap pieces, but you know—even a boring piece of aluminum I-beam looks impressive with a bit of ingenuity and some face milling. We assembled the main reactor around eight or nine on Saturday night.

By midnight we had finished the energy calibration of the detector. Since our neutron source (the thing driving the nuclear reactions) was laughably weak, we needed to be able to detect down to a single atom whether or not we had indeed created the reactions associated with a breeder reaction. This is where the $20,000 worth of sensitive equipment and our calibrations came into play. By two or three in the morning we had detected the characteristic radiation from neutron capture of thorium, and from there we knew that it was just a waiting game.

At six in the morning we had a solid 3-sigma signal (> 99.7 percent likelihood) demonstrating the production of 235U. You may have heard of 235U as "weapons-grade uranium." That's right. We had created the highly fissile isotope of uranium from garbage found under our dorm room workbench. It was an amazing, Promethean moment. We ran down the hallway screaming "We did it! We made uranium!" at the top of our lungs—but this was the Sunday morning of Scav Hunt. Nobody was asleep. As the sun came up on Judgment Day, J and I acquired the same statistical evidence for the production of 239Pu. Weapons-grade plutonium.

Mind you, this might all sound scary, but we detected something like 8,000 individual atoms of uranium, and 2,000 atoms of plutonium, or something like 1×10-18 grams, or way, way less than can be detected by typical chemical tests. This is below the threshold of what might be considered detectable, even in good lab conditions. Our experiment detected the radiation emitted when these elements are created instead of detecting them directly. To detect them directly, given the mind-bogglingly small quantities, would have required a considerable investment of time and effort—two things scarce on Scav Hunt budgets.

Realizing that we would need to show the results to the Judges at some point, we decided to jot down some numbers and essentially write up the experiment like we would in any undergrad physics lab. At 8:45 a.m. Tom called to say that he was at the front desk of the dorm and that he had brought some guests. Next thing we knew, our hallway was filled with four Judges and a jovial but somewhat skeptical guy in his forties. He identified himself as a nuclear engineer from the Kansas City nuclear reactor facility, and he would be passing judgment on our apparatus.

We all piled into Justin's room, some of us tripping over the empty cans. Clothes lay strewn everywhere, over and under crumpled beer cans, and piles of cigarette butts and physics textbooks littered the floor. The nuclear engineer, doubtless accustomed to hyper-clean

1. Thorium (atomic number 90) has ninety protons in the nucleus. Transmuting an atom of thorium into uranium (atomic number 92) requires adding two protons. This is accomplished by bombarding a sample of thorium with slow neutrons from a device called a neutron gun. These neutrons can interact with the thorium nucleus and become "captured" there. After a single successful "capture," the atom of thorium becomes a "heavy" isotope, 233Th. This isotope quickly decays into an isotope of protactinium (atomic number 91). A similar capture and decay process brings the atomic number to 92: uranium.

Photography by Justin Kasper, AB'99

Niell and Leila Sales, AB'06, editor of *We Made Uranium!*, after a book launch event at the Seminary Co-op during Scav weekend.

safety gear and class-10-plus cleanrooms, was less than impressed.

But then Justin and I went into full-on thesis defense mode. J presented some numbers on the capture cross sections and explained the entire capture-decay-capture chain, and I showed him our equipment and explained the design of the reactor and the energy calibration that proved the system's functionality. Five minutes into our argument, the engineer's look turned from mild amusement into complete shell shock. After ten minutes, he had a grin on his face. He wanted to hear all the details of the capture cross sections and the energy calibration. Needless to say, he vouched for us with Tom and the other Judges.

Tom told us to show up at Judgment with our apparatus and a shed to get the points. We piled the reactor in my car and headed over. We threw up a six-cubic-foot drywall shed and spent the rest of the day in radiation suits, dancing to techno music. We kept a cooler in the shed for VIPs. Included among them was a writer covering the Hunt for the AP Wire and another for the *New York Times*. The AP guy seemed afraid of us and, frankly, more interested in the keg toss. The *New York Times* guy, on the other hand, was happy to share our bottle of Veuve Clicquot, as was the winner of *College Jeopardy!* from that year.

Mathews House placed second in the Hunt that year, which was quite an accomplishment for a team of that size. The reactor and all of its baby isotopes were disposed of in accordance with all applicable regulations the following week. A few days later, the editor-in-chief of *Scientific American* contacted us but eventually decided that it wasn't a good idea to publish detailed plans for the production of isotopes in an internationally known magazine, no matter how safe the experiment.

The fallout on campus was pretty mild, all told, although the Resident Heads of the neighboring house evidently asked college housing for our expulsion. Fortunately, the head of housing was familiar with our escapades. As far as I know, any university-level complaints ended at her desk. J and I defended ourselves on several online bulletin boards and communities for the first several months, and then the whole thing more or less faded from the zeitgeist. But the nuclear reactor lives on as a Scav Hunt legend, the prime example of just how far Scavvies will go.

Fred Niell *graduated from U of C in 1999 with a degree in physics. He lived all four years in Mathews House and Scavved for that team in 1996 and 1997. After Mathews House's dismal outing in 1997, Niell took a year off from Scav in 1998 (save for a spud gun and small item support). Niell went on to graduate school at the University of Michigan and then a string of start-up companies in Boston. He now runs an electrical engineering design consulting company in Tampa, Florida, specializing in high-power and pulsed applications.*

Photography by Nathan Keay

WHAT'S IN A GAME?

In 1975, Mihaly Csikszentmihalyi, AB'60, PhD'65, came up with the notion of autotelic experience—better known as flow. Forty-five years later, we're still talking about it.

By Carrie Golus, AB'91, AM'93

At a press conference a few days before Super Bowl XXVII in 1993, Dallas Cowboys coach Jimmy Johnson did something strange.

He talked about *Flow: The Psychology of Optimal Experience* (Harper & Row, 1990), telling reporters it had helped him train the team. The book, by then UChicago psychology professor Mihaly Csikszentmihalyi, AB'60, PhD'65, scrutinized flow experiences: moments when you are so focused on a challenging activity—making art, performing surgery, playing a sport—that time seems to stop and all other thoughts drop away.

On Super Bowl Sunday the Cowboys crushed the Buffalo Bills 52–17. "Get used to the Dallas Cowboys, folks, because they're going to be with us for a long time," *Sports Illustrated* observed. Indeed, the Cowboys went on to win two more Super Bowls, in 1994 and 1996; meanwhile Csikszentmihalyi's ideas had been permanently launched into popular culture. During the 1990s, politicians Newt Gingrich, Bill Clinton, and Tony Blair all cited the book as an influence. (It's tempting to indulge in a little counterfactualism and wonder what might have happened if the Cowboys had lost.)

Mihaly Csikszentmihalyi—pronounced, as he explains it, ME-High Chick-SENT-Me-High—published his first book on flow in 1975. *Beyond Boredom and Anxiety: Experiencing Flow in Work and Play* (Jossey-Bass Publishers), was "generally ignored in the professional literature," Csikszentmihalyi wrote in the preface to the 25th anniversary edition. But interest in the notion of flow grew year by year, he wrote, and it's now "a technical term in many languages, from Swedish to Japanese, Hungarian, Spanish, and Chinese."

In *Beyond Boredom and Anxiety*, Csikszentmihalyi and a team of graduate student researchers studied four activities: chess, rock climbing, "rock dancing" (meaning

Illustration by Joan Alturo

freeform dancing to rock music), and surgery. Except for surgery, all of these are "unproductive," according to Csikszentmihalyi: they are forms of adult play. He hoped by studying play, he could learn how work could be made more enjoyable.

Csikszentmihalyi's original term was *autotelic experiences*, from the Greek for self (*auto*) and goal or purpose (*telos*)—that is, activities you want to do for their own sake, as opposed to *exotelic* activities done for a reward. (In passing, Csikszentmihalyi also noted the existence of *autotelic personalities*, people who can enjoy almost any activity.) During team meetings with his researchers, without really intending to, they shifted to saying *flow* instead.

The word was borrowed from an interview with one of their subjects, a poet and mountain climber: "The act of writing justifies poetry. Climbing is the same: recognizing that you are a flow. The purpose of the flow is to keep on flowing, not looking for a peak or utopia but staying in the flow." Reflecting 25 years later, Csikszentmihalyi wrote, "If we had continued to use the precise but cumbersome *autotelic experience*, few people outside the academic community would have paid attention."

Flow was not a universal experience among his research subjects, Csikszentmihalyi acknowledged. Of the climbers in *Beyond Boredom and Anxiety*, for example, only nine of 30 consistently reported flow experiences, and several dismissed the idea entirely:

"Bullshit."

"I just don't feel that."

"I think somebody must be trying to be spectacular."

Csíkszentmihályi Mihály (as his name is written in Hungarian) was born in 1934 in Fiume, then the Kingdom of Italy, now Rijeka, Croatia.

In the 2004 TED Talk *Flow, The Secret to Happiness*—which has been viewed more than five million times—Csikszentmihalyi weaves an origin story with many strands. Growing up during World War II, he was disillusioned by the failures of the adults around him, who seemed unable to "withstand the tragedies that the war visited on them." Elsewhere, Csikszentmihalyi has observed that when he was in a prison camp as a ten-year-old, his only moments of joy came while playing chess.

As a teenager, he studied philosophy, art, and religion, seeking to understand what made life worth living. One evening, since he had no money to see a movie, he decided to attend a free lecture on flying saucers. The speaker, a psychologist, explained that "the psyche of the Europeans had been traumatized by the war, and now they're projecting flying saucers into the sky." Impressed, Csikszentmihalyi decided to read the man's books. "And that was Carl Jung," he says, as the TED audience gasps.

In 1956 Csikszentmihalyi came to the United States to study psychology. Csikszentmihalyi spoke little English (he was fluent in Hungarian, German, and Italian), but he managed to pass the entrance exam for the Chicago branch of the University of Illinois. Later he transferred to UChicago—working nights all the while—where he studied with philosopher Hannah Arendt and Mircea Eliade, historian of religions.

After finishing his bachelor's degree he was accepted into the Committee on Social Thought, "the academic equivalent of St. Peter beckoning you through the pearly gates," he recalled wistfully in the preface to *Beyond Boredom and Anxiety*. But it didn't offer funding. Instead he enrolled in the Committee on Human Development, which gave him a fellowship.

His doctoral thesis focused on creativity. As he observed painters making paintings, Csikszentmihalyi was intrigued by "the almost trancelike state they entered when the work was going well." According to the behavioral psychology then in vogue, their primary motivation should have been the reward of a finished painting. So why, Csikszentmihalyi wondered, were they so indifferent to their completed work? Why did they immediately want to start something new?

Csikszentmihalyi's first teaching job after finishing his doctorate was at Lake Forest College. He returned to UChicago's Committee on Human Development in 1970—giving up his tenure at Lake Forest to do so. Soon afterward he won funding for a study of autotelic experiences, which became *Beyond Boredom and Anxiety*.

The title came from Csikszentmihalyi's model of the flow state: he placed flow between boredom (which occurs when an activity is too easy) and anxiety (when an activity is too difficult). Flow results from the perfect match of challenge and skill.

Many more books on flow followed, including *Creativity: Flow and the Psychology of Discovery and Invention* (Harper Collins,

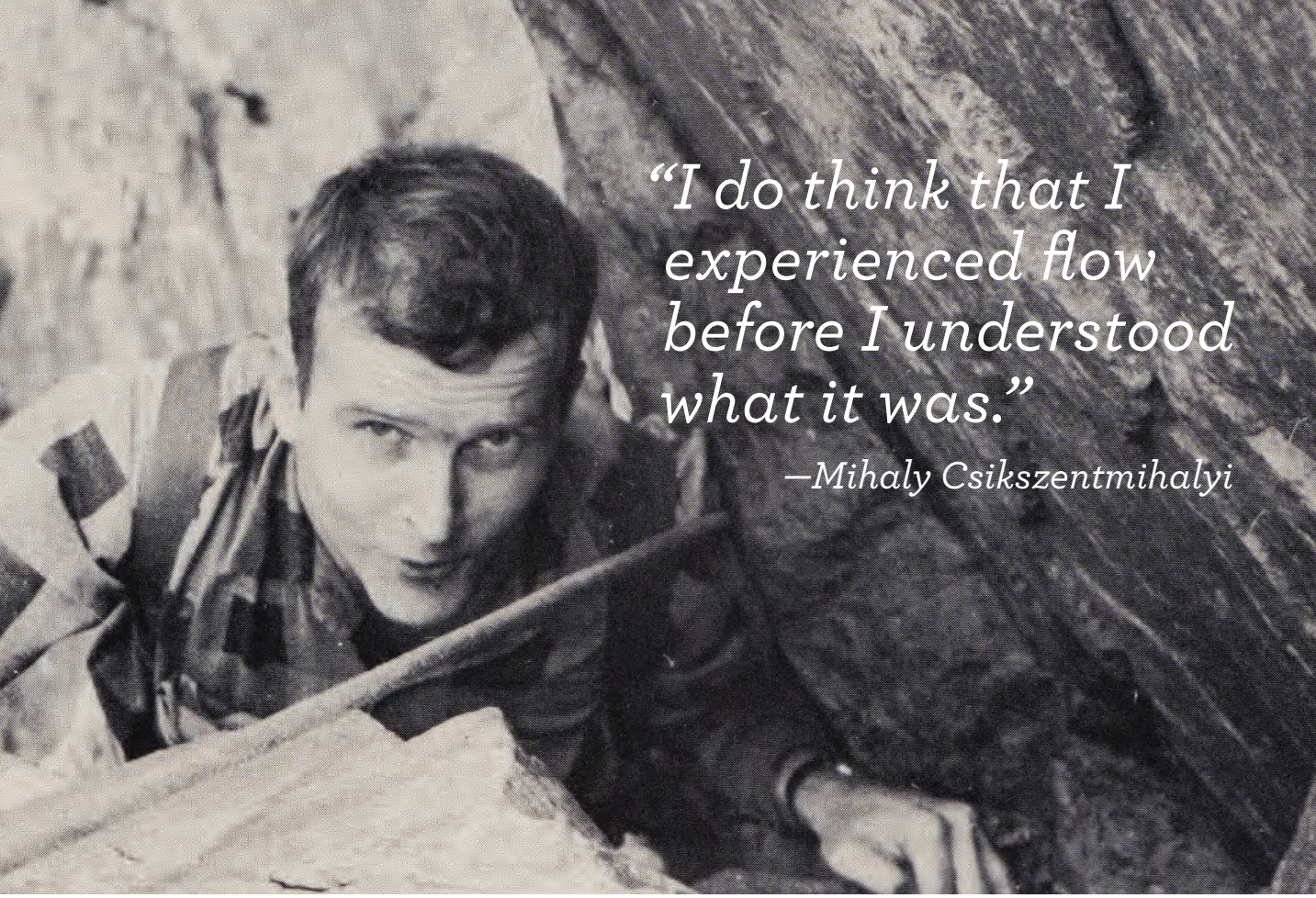


Photo courtesy Mihaly Csikszentmihalyi, AB'60, PhD'65

1996), *Finding Flow: The Psychology of Engagement with Everyday Life* (Basic Books, 1997), and *Good Business: Leadership, Flow, and the Making of Meaning* (Viking, 2003).

Csikszentmihalyi's initial research on flow was based on interviews: subjects had to try to recall how they felt during self-defined peak experiences. When pagers became popular, he came up with the Experience Sampling Method (ESM) to get more accurate data. Eight times a day, at random moments, research subjects were paged. After each page, they wrote down what they were doing and how they were feeling. Using ESM, Csikszentmihalyi discovered "a strange inner conflict": the data showed that his research subjects were most likely to be in flow at work. Nonetheless they preferred leisure.

Many people, Csikszentmihalyi argues in *Flow*, have no idea how to enjoy their free time, choosing passive, escapist pastimes (he is particularly critical of television watching) rather than hobbies that demand skill. "Instead of using our physical and mental resources to experience flow," he notes, "most of us spend many hours each week watching celebrated athletes playing in enormous stadiums." The Dallas Cowboys may be experiencing flow, but the millions of couch potatoes watching them probably are not.

Unfortunately, none of Csikszentmihalyi's books—not even the mass-market paperbacks—spell out clearly how to get into flow if you don't already know. "A joyful life is an individual creation that cannot be copied from a recipe," he writes in *Flow*. But its general principles, along with examples of people who achieve flow often, "should be enough information to make possible the transition from theory to practice."

Csikszentmihalyi retired from the University in 1999, but he's still teaching. At Claremont Graduate University in Claremont, California, he founded the Quality of Life Research Center, which focuses on positive psychology. "This is all voluntary. I can stop any time," says Csikszentmihalyi, who's now 84. But teaching and working with graduate students "is still a major source of flow."

As a young man, he says, "I do think that I experienced flow before I understood what it was," while rock climbing, cooking, painting, and playing chess. As he's gotten older, he's had to make adaptations. He still enjoys hiking, but the difficult, dangerous climbing that used to put him in a flow state has been impossible for many decades. "I suppose it depends on the person," Csikszentmihalyi says. "I get flow from more things, but not as deeply as before."

As a young man Csikszentmihalyi derived flow from rock climbing.

Recipe

READ, DRINK, REPEAT

Amira Makansi, AB'10, has pairing recommendations for more than 150 books.

UChicagoans excel at pairing books and beverages: Durkheim and coffee. Smith and coffee. Foucault and … also coffee. But if you're looking to up your game, you'll find lots of help in Literary Libations: What to Drink with What You Read *(Skyhorse Publishing, 2018) by Amira Makansi, AB'10, which offers pairings for 171 classic titles. (Most of the drinks are alcoholic, but there's a section for kids and teetotalers too.)*

Makansi, a history major, originally planned to become a lawyer but ended up in the wine industry. She's also the coauthor of three Hunger Games-*esque young adult novels, the Seeds trilogy, with her mother and sister.*

How did you get the idea for *Literary Libations*?

My dad and I went to Alinea [chef Grant Achatz's renowned Lincoln Park restaurant] together when I was a student at UChicago. He ordered the wine pairings to go with our meal and it was an absolutely transcendental experience. When you have a good wine that goes perfectly with the food that you're eating, the flavors that you get out of the wine and the food change so much. That experience really highlighted to me the value of putting two things together and seeing how they change each other.

Years later, I was working as a laboratory technician at a winery in California and also writing a blog. I just happened to come up with this concept of pairing wine and books. I wrote a post, kind of spur-of-the-moment, called "What to Drink with What You Read." It was pairing wine styles with genres, like rosé with romance, petite sirah with mysteries and thrillers, and Argentinian Malbec with poetry, but there were no specific titles. People loved it. A few years later I came up with the book proposal and set about trying to get it published.

What does a laboratory technician at a winery do?

There are two seasons in winemaking: there's harvest season and then there's off-season, where you're maintaining the wine that is currently in barrels. You want it to be healthy and stable and not developing any microbiological activity. The lab tech is pulling samples on all of those barrels, assisting in the blending process, and then checking and making sure that everything is healthy and ready to go into bottles.

I didn't know that job existed. When I read that you worked in the wine industry all I could imagine was the person who stomps on grapes with your feet.

I have done a fair amount of grape stomping. There's actually a picture of me on Instagram stomping away on those grapes with very red feet.

Is it as fun as it looks?

It's fun, but you know what, it's actually pretty cold. You want to harvest in the morning, when the grapes are really fresh. So you bring grapes off the vine at about 60 degrees, and when you get your feet in there, it's like, oh my god, that's really, really cold.

Which pairings in the book were easy and which were tricky?

One that I knew immediately was *Dracula*. The pairing is a Bloody Mary. To me it was so easy I didn't even have to think about it. It's so appropriate: a thick red drink with a lot of vodka and horseradish and garlic. What about that doesn't say vampire to you?

The books that I didn't fall in love with as much as I expected to or hoped to were more challenging. *Moby-Dick* was definitely one of those. I was reading it and I was like, this is a massive piece of male American arrogance. The

Photography by Steven Addington

Makansi's first job in the wine industry was a 2010 harvest internship at Benton-Lane Winery in Monroe, Oregon: "During harvest season, you need a lot of labor. It doesn't really matter how skilled it is." Read more about her wine career at https://mag.uchicago.edu/litlibations.

pairing ended up being Napa Valley cabernet sauvignon. I think those two complement each other pretty well, even though you would probably not have a bottle of cab sauv anywhere on that boat.

You've written a YA science-fiction trilogy with your mom and sister. How does it work to write a novel with three authors?

My mom was the idea person. She actually had the original concept for the very first book [*The Sowing* (Layla Dog Press, 2013), set in the dystopian world of the Okarian Sector]. We have two alternating protagonists, Remy and Vale, and my sister wrote for one and I wrote for the other. Every now and then we would switch off if we were feeling creatively blocked or we weren't sure what to do with that character at that point in the story. My mom would go through and edit our chapters.

Was it a pretty harmonious process?

It was overall as harmonious as can possibly be expected.

—*Susie Allen, AB'09*

WHAT TO DRINK WITH HARRY POTTER?

From the chapter "Can I See Your I.D.? Junior Pairings for Young Adult Books"

Harry Potter and the Sorcerer's Stone

J. K. Rowling | *Pairing: Butterbeer*

If you're reading any of the Harry Potter books, whether you're joining Hagrid in the Leaky Cauldron for the first time or seeking out the Horcruxes scattered across the world, you're going to want some butterbeer. Yes, I know that butterbeer doesn't actually show up until *Harry Potter and the Prisoner of Azkaban*, but let's be honest: it's the most memorable drink from the series (except maybe Polyjuice Potion, and I wouldn't wish that on anyone). Sweet, warming, and mildly alcoholic (in the books—our version is virgin), butterbeer serves as a communal beverage and a relaxing treat. If you, like me, desperately wish you were born not a Muggle but a witch or a wizard, butterbeer is the closest we can come to pretending. In the days after the Universal Studios' Wizarding World opened, their butterbeer recipe was the subject of much discussion. The Associated Press published a recipe that is widely believed to be very similar to the one served at the Leaky Cauldron at Universal Studios. Get your broomstick and wand and knock back a mug of this creamy drink, because there are dark things coming your way, and you'll need your wits about you.

From Literary Libations *by Amira Makansi. © 2018 by Amira Makansi. Reprinted by permission of Skyhorse Publishing.*

BUTTERBEER

(makes 4 servings)

1 c
brown sugar

2 tbsp
water

6 tbsp
butter

½ tsp
salt

½ tsp
apple cider vinegar

¾ c
heavy whipping cream, divided

½ tsp
rum extract

4
(12 oz) bottles cream soda

In a small saucepan, over medium heat, combine the water and brown sugar and bring to a boil. Stir often until the mixture reads 240˚F on a candy thermometer.

Remove from heat and promptly stir in butter, salt, cider vinegar, and 1/4 cup whipping cream. When fully incorporated, set aside to cool.

When mixture has cooled, stir in the rum extract. Combine 2 tbsp. of the brown sugar mixture and the remainder of the heavy cream in a medium mixing bowl. Using an electric mixer or a stand mixer, beat the heavy cream until just thickened, but not completely whipped. This should take 2–3 minutes.

To serve, divide the sugar mixture between 4 tall, chilled glasses. Add 1/4 cup of cream soda and stir to combine. Top with the remainder of the cream soda and spoon the cream over the top.

Illustration by Elena Makansi

Two-minute explanation

WHY STUDY ENDANGERED LANGUAGES?

Alan C. L. Yu, Professor of Linguistics:

It depends on your perspective. For the community members themselves, it's about retaining their culture. Ideas unique to their culture are maybe best expressed in their language rather than via translation. It's a matter of identity-building.

From a linguist's post of view, it's partly about studying language diversity. When a language disappears, you miss all the data that might only be observable in that language and not others.

Every language tells you something new about the human capacity for speaking language.

I study Washo, a Native American language spoken in California and Nevada. One thing that has always impressed me is how they conceptualize knowledge. In English, when you want to say you know something, the base verb is to know. For the Washo, the base verb about knowledge is to not-know something. To know something is to negate not knowing.

—As told to Carrie Golus, AB'91, AM'93

UChicago creatures

HONEY, I'M HOME

The bees are back in town.

Last year, student agriculture club Phoenix Farms kept three hives of bees on the roof of Harper Court, the 53rd Street building where the Core is published. Over the winter, the hives road-tripped to California. Here's a travelogue of their cross-country journey:

October 2018:
Three hives—more than 100,000 bees—leave Harper Court to go to a bee yard in West Chicago, Illinois (a town 35 miles west, near Aurora). There the hives are "staged": sparse

Before you go

GOOD ADVICE RE: BAD ADVICE

"Why would someone who loves you give you bad advice? Because they are desperately trying to protect you. ... Most of my guests [on her podcast "No Limits"] got the worst advice of their lives from a person who cared about them the most."

—Journalist Rebecca Jarvis, AB'03
2019 Class Day speaker

Photography by Stephanie Shih; photography by Joe Sterbenc

hives get more bees, very full hives might have bees taken away.

December 2018:
UChicago's hives, along with 341 others, travel by semi-tractor truck to Los Banos, California.

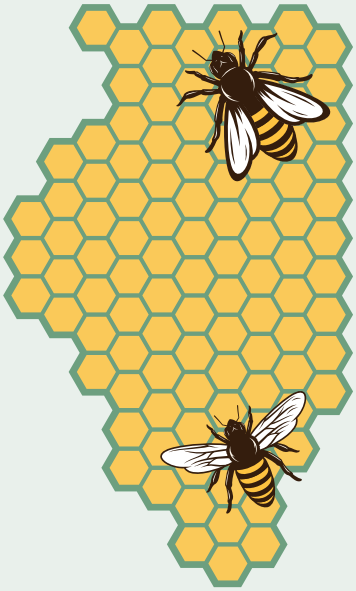
January 2019
The bees arrive to pollinate almond trees in California's San Joaquin Valley.

March 2019:
The hives travel to a bee yard in Eddyville, Kentucky, where they are staged again.

May 2019:
The hives come back to West Chicago. (Worker bees live just six weeks, so the bees are not the same, but the hives are.) They're not returning to Harper Court though. Phoenix Farms director Nick Lyon, AB'16, a current Pritzker School of Medicine student, takes them to Growing Home community farms in Englewood.

Phoenix Farms has also ordered three new hives, as well as three boxes of new bees to put in them, at First Presbyterian Church, 6400 South Kimbark Avenue.

—Jeanie Chung



COLLEGE NEW VENTURE CHALLENGE WINNERS

This year there were six finalists in the College New Venture Challenge (CNVC), a competition for startup ideas. Since 2018, CNVC has been offered as a for-credit class for undergrads.

First place

($15,000)

PODU, the first platform for podcasting in Arabic, led by Wessam Abozeid, AB'19.

Second place

($10,000 each)

Dr. Shake, which makes and delivers smoothies to health-conscious consumers in China's metropolitan areas. Team members include Richard Zhao, Class of 2021; Nancy Xue, Class of 2020; and Jeffrey Zhu, Class of 2022.

Nahvy, an online marketplace for people 65 years and older. Team members include Martin Bolotin, Marley Rosario, Jake Fauske, and Ben Brandt, all Class of 2021.

Honorable mention

($5,000 each)

Besst, an online game where friends predict anything from sports to others' love lives, wagering social media incentives instead of money.

Southsider, hardware that prevents theft of bicycle parts.

WAGR, a platform that allows users to bet on their own performance in online games like *Fortnite* or *League of Legends*.

Illustration by Vladislav Klok and Michael Vendiola; illustration by Michael Vendiola

Poem

Between Autumn Equinox and Winter Solstice, Today

By Emily Jungmin Yoon, AM'18

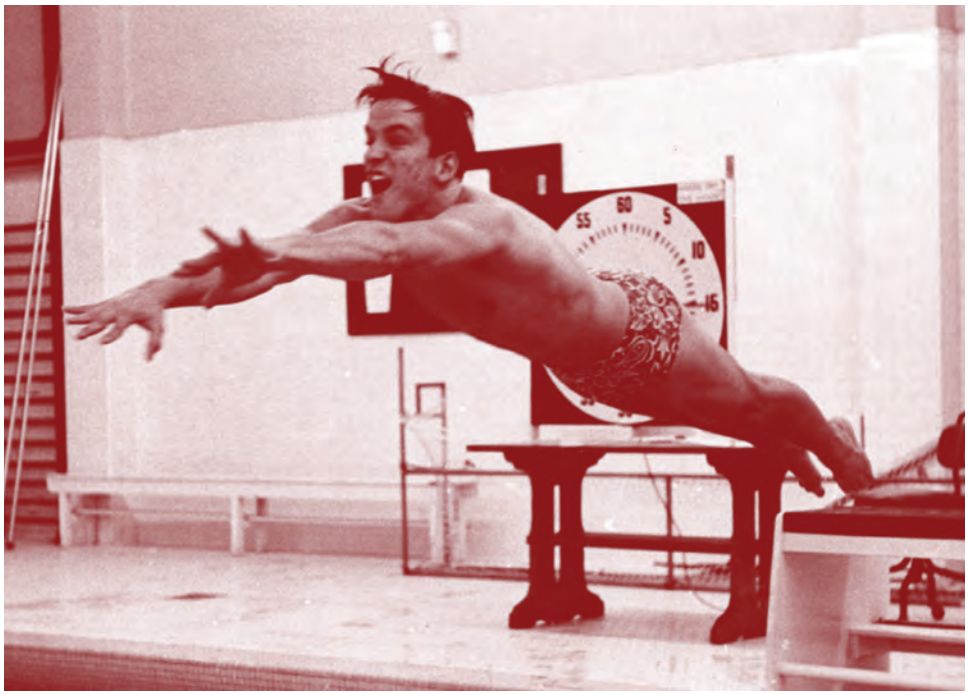
I read a Korean poem
with the line "Today you are the youngest
you will ever be." Today I am the oldest
I have been. Today we drink
buckwheat tea. Today I have heat
in my apartment. Today I think
about the word *chada* in Korean.
It means *cold*. It means *to be filled with*.
It means *to kick*. *To wear.* Today we're worn.
Today you wear the cold. Your chilled skin.
My heart knocks on my skin. Someone said
winter has broken his windows. The heat inside
and the cold outside sent lightning across glass.
Today my heart wears you like curtains. Today
it fills with you. The window in my room
is full of leaves ready to fall. *Chada*, you say. *It's tea.*
We drink. It is cold outside.

Yoon is a graduate student in East Asian Languages and Civilizations and a visiting faculty member in creative writing.

Strange Planet

By Nathan W. Pyle

SWIM TEAM MEMBER TED JOHNSON, AB'73, BARTLETT GYMNASIUM, 1970



Life is nothing more than a stream of experiences—the more widely and deeply you swim in it, the richer your life will be.

—Mihaly Csikszentmihalyi, AB'60, PhD'65,
Creativity: Flow and the Psychology of Discovery and Invention (1996)