Spring 2020

Utah State Magazine, Spring 2020

Utah State University

UtahState

SPRING 2020

UtahStateUniversity®

your giving...

Gives help with the unexpected.

Once in a while, unexpected events take place that are beyond our control and require all of us to come together and give each other strength. This is an especially challenging and disruptive time for our students, some of whom are facing financial hardship as they navigate the unexpected and far-reaching implications of COVID-19. In the tradition of Aggies helping Aggies, we are asking you to help meet the needs of our students.

Here are three ways you can help

Student Emergency Hardship Fund

Directs critical resources to those who find themselves with urgent expenses they're unprepared to meet. Emergency travel and temporary housing for those unable to return home are among the immediate needs for many students.

Counseling and Psychological Services (CAPS)

Amidst the current concerns about COVID-19 and recent USU decisions to move all classes to an online format, CAPS will use this funding to provide telehealth therapy sessions, single-session appointments, one-time consultation appointments, and walk-in crisis appointments to students.

Student Nutritional Access Center (SNAC)

Any Aggie with a valid USU ID in need of food can visit the on-campus food pantry, no questions asked. We are all part of the Aggie family, and our mutual commitment to our university will help many deserving students get through this unprecedented situation.

Help our young Aggies and donate today.

usu.edu/aggiefunded

Photo courtesy of Andrew Diamond.

Together

Dear Aggies, friends, and neighbors,

The COVID-19 pandemic and efforts to mitigate its spread have touched us all. It is likely that the constant news about COVID-19 and rapid changes in response to it have added to your anxiety. For USU, changes came quickly. Academic courses were moved to a remote learning environment on March 18. All spring events and university travel have been cancelled for the time being as part of our effort to "flatten the curve" of COVID-19 cases and ensure health care providers have the capacity to care for those who develop complications and the critically ill.

As we all stay home to prevent the spread of COVID-19, many of our students and their families have financial struggles. We know their financial difficulties today could cost them their education tomorrow.

The USU Student Emergency Hardship fund was created just for these situations, with applications carefully evaluated by the President's office and the Division of Student Affairs. These funds were depleted even before the current public health crisis. If you can, please consider giving to help our students at *aggiefunded.usu.edu*.

Lastly, I want you all to know that we will celebrate the accomplishments of all our graduating Aggies in the future. While USU has cancelled its commencement and convocation events in Logan and throughout the state, an in-person commencement ceremony is scheduled for late August with events at the statewide campuses in the first two weeks of September. The dates of all events are contingent upon public health circumstances. More details will be released in the future.

Please know that our top priority is the health and safety of our Utah State family while we continue to meet our core mission of learning, research, and engagement. Our administration carefully evaluates every decision and considers the impacts it will have on our students, faculty, and staff.

In the face of these challenging times I am asking all members of the Utah State family to support each other. As a message of solidarity and support, the Old Main "A" will be turned blue until further notice. Please stay safe. We will get through this together, as a family.

Noelle Cockett
USU President

Photo by John DeVilbiss.

Conspicuous Absences and Impossible Solutions

We find ourselves at the intersection of a new reality and desire for normal life—a collision that leaves us reeling and disoriented.

Reading through the first layout of this issue, I began to feel my bearings again. I was reminded, as we continue our celebration of the *Year of the Woman*, of the sacrifices made by "the fighting sisters of fighting men" of the First World War highlighted on page 56. It was 1918 and the women of Utah, and our university, stepped up during another equally frightening time. They were in the tail end of a horrific war and in the midst of an unusually deadly influenza pandemic. Today we are fighting again.

It occurs to me that the intersections in which we find ourselves may be new to us, but the conflicts and challenges are much the same from ages past, only the occupants have changed. An ovarian cancer that killed a woman 400 years ago still has no cure (page 52). What does that tell us? We search for the answers, even from those who are gone from us (page 34). We climb the rainforest canopy of Costa Rica for clues to our changing climate that point to another fast-approaching global crisis (page 38).

We humans do not take kindly to being blindsided. We like to control our destinies. Something as simple as being thrown together with new roommates in unfamiliar settings can be highly stressful (page 42). And yet even in that, there are learning experiences to be gained, if we are willing to be open and truly listen (page 26). Education does not always have a clear path. By its nature, it wants us to take roads less traveled that lead us to new crossings and onto better paths (page 15).

The new reality of an empty campus in the middle of a busy semester is as stark as it is disturbing. It rattles perception (page 30). We look about and what we see does not match what we expect—vacant cafes, basketball arenas gone silent, abandoned classrooms. We gain new appreciation for leadership that instills trust, leaders who inform, and even comfort (page 3). But we have been at this intersection before. Knowledge and science give us our bearings while making possible the eventual achievement of seemingly impossible solutions.

John DeVilbiss
Executive Editor,
Utah State magazine

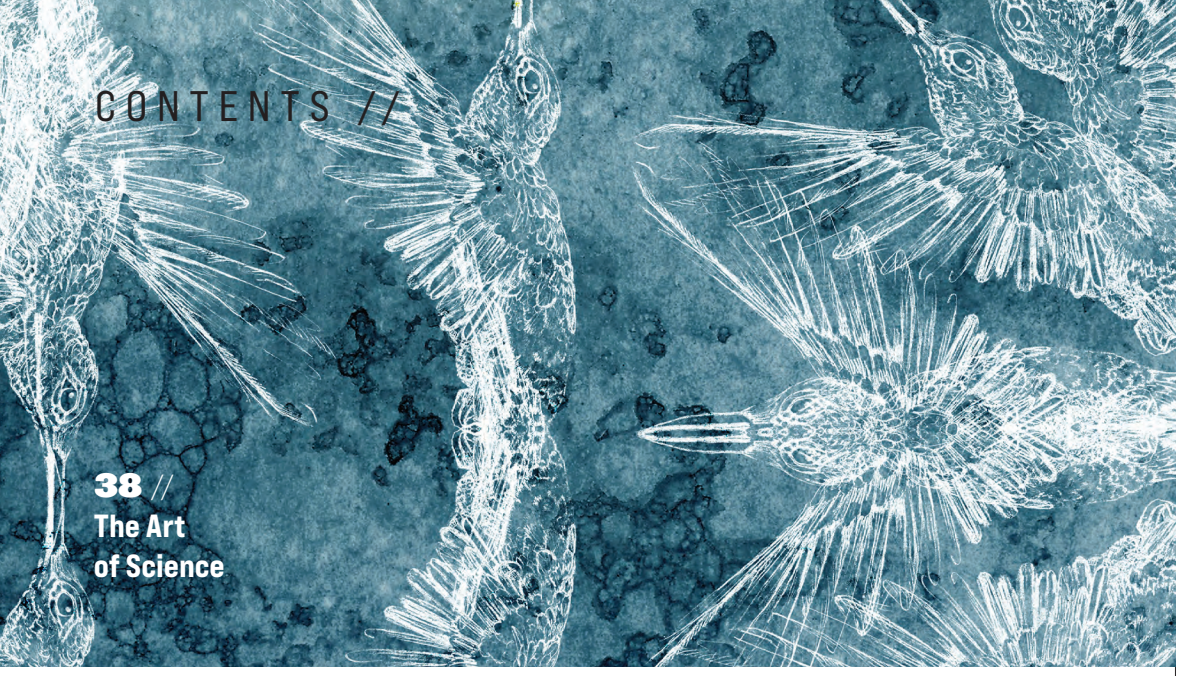

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Illustration by Marissa Devey '20.

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www.utahstate.usu.edu

Where is This?

Photo by Jeremy Jensen '04, BFA '14.

First right answer wins Aggie gear. And while you're at it, letters to the editor are always welcome!

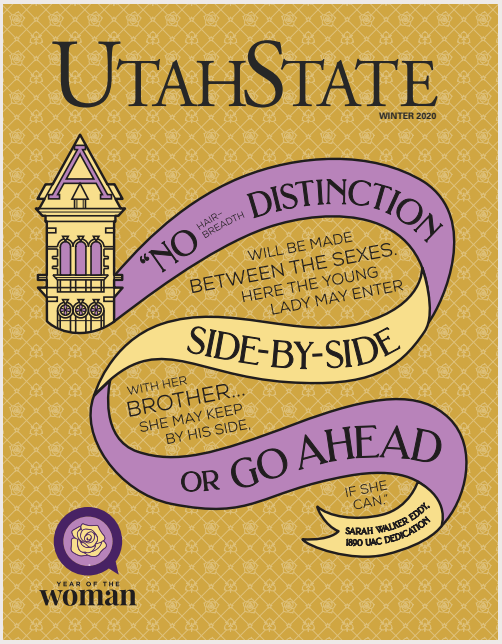
mageditor@usu.edu

UTAH STATE (ISSN 1542-2712) is published three times a year by Utah State University, 0500 Old Main Hill, Logan UT 84322–0500. Postage paid at Salt Lake City, UT.

POSTMASTER: Send address changes to Utah State University, Development Records, 1522 Old Main Hill, Logan UT 84322–1522.

On the Cover: Justin Hodges, left, and Koy Chaston are both freshmen runners on the USU men's track team. They are a roommate success story. Tips on making living with strangers—and friends—work. Photo by John Goodman.

From Twitter



Wonderings

Beautiful cover on your magazine @USUAggies! I'm truly proud to be an Aggie.

— Diane Frances Walter '99 @48thRule

The university's symbol in the bottom left of the cover designates stories and events that are part of USU's Year of the Woman *campaign. A yellow rose and the color purple were common symbols of the women's suffrage movement.* usu.edu/year-of-the-woman

A Wonderful Job

I want to thank you, and particularly Lynnette Harris, for the beautiful article you did on my Dad's (Bill Varga) work with native plants. It was so exciting for me to get it in the mail today. I live in the Hudson Valley of New York, but I remain a loyal Aggie, as do my 4 siblings and most of my in-laws (and now a next generation of grandkids. One is even going into plant science!). Appreciation for the work of faculty, alumni, and students, and such beautiful recognition of that work is a big part of cementing loyalty over the years and decades, and I think you do a wonderful job at the magazine. While I was, of course, particularly excited about this issue, I always look forward to getting it and reading about the amazing things that are happening at Utah State. Thanks for all of your hard work.

—Andrea Varga '96
Associate Professor of Theatre Design, SUNY New Paltz

A Fascinating Read

Thank you so very much for the Winter 2020 issue. Kristen Munson's article about LaJean Lawson's seminal research into sports bras was the first to capture my attention, and I have shared it through my social media accounts. As a fairly sporty woman, I found this article fascinating. I quickly read—and thoroughly enjoyed—the rest of the issue as well. Kudos to you, Kristen, and the rest of your staff!!

— Kelly Kopp, Ph.D.
Professor and Extension Specialist, Department of Plants, Soils & Climate

High Praise

Great articles. Best issue ever. Thanks.

—Kenneth Traveller '71

Connecting Over Comments

What are the odds? You published two letters from old friends that had lost touch for many years. Right above my letter on ink was Rey LeRoy Barnes letter of fond memories and two degrees from USU. He called me on the phone last night, and took an hour to catch up.

I never went to USU. Four of our children and many grandchildren have loved it. I got in on the action because of a donation of my father's material on Bluff, Monumental Highway, and Natural Bridges to Daniel Davis in Special Collections of Merrill Cazier Library. He did a website with the material that has really put my father's dream on the map (*ref:* exhibits.lib.usu.edu/exhibits/show/dolph-andrus-s-monumental-high). Kudos to your selection of what to print and where. More to USU than just Aggie Ice Cream. Who cares about ink and toner anymore. Thanks for the connections.

PS: My wife Virginia Woolley and I both graduated from the U, but we met in a conjoint at BYU. Share is our motto.

—Berwyn J. Andrus
Bountiful, Utah

An Awkward Symbol

I enjoyed the fine articles in the Winter edition that I received only yesterday. I do have two comments. The rose protected by a heavy border is an awkward symbol for the Year of the Woman. What about a runner (for LaJean Lawson), a rocket (for Dr. Robinson and Dr. Cleave), or a pioneer sun bonnet (for Nadene LeCheminant), each transcending the globe? I also find it surprising that Dr. Robinson's kitten heels were mentioned in the first sentence. What kind of shoes does Brian Daines wear?

I look forward to reading more stories about remarkable USU women in coming issues.

—Diane Smith, '75

We welcome your thoughts. Please email letters to mageditor@usu.edu or mail to Utah State Magazine Editor, 0500 Old Main Hill, Logan, UT 84322–0500. Please include full name, address, phone number, and email, if available. We reserve the right to edit for length and clarity.

A Great Legacy

The Winter 2020 cover of *Utah State* magazine struck a chord with me. The quote by Sarah Walker Eddy at the 1890 UAC Dedication, "No hair-breadth distinction will be made... here the young lady may enter side-by-side with her brother..."

My great-grandfather, Rasmus Oluf Larsen, worked at the Logan Campus for over 50 years, beginning before this dedication. The 1918 *Buzzer* lists him as the Superintendent of Buildings. Rasmus Oluf Larsen and his wife Anna Jorgine Sorensen Larsen had three daughters, Estella, Naomi, and Lucille, all of whom graduated from UAC.

My grandmother, Naomi Larsen Baker graduated in 1919 from UAC, and had five children, all of whom attended UAC. One son and my mother, Joan Baker Hughes graduated. My mother and my father, Vernon Marion Hughes, graduated together from UAC in 1952. My father's father, Jonathan Marion Hughes graduated from UAC in 1918. All of my grandfather's five children attended UAC.

I had a great legacy at USU to follow. I graduated from USU in 1974 as a third generation Aggie. One of my sons graduated from USU in 2012, another son and his wife will graduate from USU in 2021. We are all proud to be Aggies.

—Valorie Joan Hughes Black, St George, Utah, '74

Quad Memories

I remember while in the sixth grade ... roller skating across the Quad .... from Old Main to the library and then back to the center.... then north to the creamery and south to the commons and engineering buildings. What great memories of the Quad. And we did it more than once! Sure enjoy your magazine. GO AGGIES.

—Tom Pocock '62

Go Aggies

Greetings John and staff, I just finished reading the Winter edition of the *Utah State* magazine. Excellent as always. Go Aggies.

—Bob Wassom, '73

Some Classes Perhaps?

I always enjoy reading the latest issues of *Utah State*. The Winter 2020 issue highlighting the "Year of the Woman" was especially timely. However, it contained two disturbing letters that parroted discredited right wing conspiracy theories. In one, the writer, who says "I am no climate scientist," disagrees with 97% of actual climate scientists when he suggests that climate change is similar to the "Elvis Lives" theory. Why? He reminds us that dinosaurs did not utilize internal combustion engines.

The second writer suggests that the mainstream media are "perpetrators or at least abettors" of "fake news." His proof? One broadcaster who told his audience that the story he was reporting had not yet been verified and later retracted it and apologized when it turned out to not be correct. That's exactly what professional journalists are supposed to do. I suggest that both of these letter writing Aggies would benefit from auditing some classes offered by USU. The College of Agriculture and Applied Sciences believes that "climate change is the most important environmental issue of our time" and offers a climate science degree wherein students "gain a comprehensive understanding of climate change as we face it." And the award winning Department of Journalism and Communication prepares students for important roles in the honorable and often unfairly vilified mainstream media.

—William Tennent '71, '75, MS '80 Port Townsend, WA

From the Website

Rethinking Video Games

Congratulations to all three [bioengineering students]. Michael, my grandson has always talked about NASA. And I thought it was his way to play games. Grandparents are not always right Michael. Best of luck in reaching your goals.

—Jack Einreinhof

A Remarkable Person

Thank you for the great article about Ione Bennion. My wife, Caroline, and I had the great privilege of knowing her the four years we worked at USU in the mid-1980s. I was a junior faculty member in the College of Natural Resources, and my wife was a graduate student in the history department, so we also knew a number of the people mentioned in the article who were close associates of Ione. She was one of the kindest, most generous, and wisest people my wife and I have ever known, truly a remarkable person and an inspiration.

—Paul Mohai, Assistant Professor 1983–87

Mitigating Hunger

About student food-insecurity: To realize this is happening is a heartbreaking thing. I was an Aggie at a time when I could work five months fighting forest fires, and almost have enough money to get through a whole year. A student loan didn't murder me with debt, and a small part-time dishwashing job kept me well out of the 'hungry' category. But I know that financial circumstances for these young people have seriously changed. I see evidence of it here in Los Angeles too, as I have been auditioning for and performing in university student films. These are fancy, well-known colleges with high entrance requirements where I thought only rich kids went. It is a big enough and common enough problem that I decided long ago that I would never take fees or money from the student directors, not even for gas. I am so glad that USU is recognizing it and taking some mitigating measures as many of these universities have been doing. I hope we all keep this in mind as a society. A college food-pantry would be a great donation for all of us.

—George Harvey Dabling '73 Forestry, Theatre minor

When Politics Collide:

A Ringside View of Impeachment

by John DeVilbiss

Photo by Bistra Bogoev.

When Yana Bogoev went to Washington D.C., last August as an intern for U.S. Representative Ben McAdams, of Utah, she knew it would be memorable. It turned historical.

After Speaker Nancy Pelosi announced Sept. 24 that the House would begin a formal impeachment inquiry into President Donald J. Trump, phone calls from McAdams' constituents spiked and Bogoev, a junior in the Jon M. Huntsman School of Business, began to get earfuls of democracy. Loud, heated, passionate earfuls, with phrases and wording strangely similar to what she was hearing on Fox News and CNN.

"But being there at such a monumental point in history, and realizing that you're in the middle of it, was amazing and really heightened my experience—the number of calls and interactions were all just much greater because of that," Bogoev says.

With calls from ardent constituents still ringing in her ears, it dawned on her that the phone messages she was taking seemed less linear across the political spectrum and more circular—identical facts were being employed by both sides of the aisle in making each of their cases. "They would use the same piece of evidence," she says. "It's just the way you interpret it, which is really difficult because if you can get very clear, unbiased information, essentially, you can twist it any way you want, which makes it more of a circle."

> *Thoughts and views are always going to be accepted here.*
>
> **— Yana Bogoev**

Or a merry-go-round, or a dog chasing its tail, or any other image that connotes endless circling, which, she says, is somewhat comforting. Because for all the fighting and disagreements at the very axis of American government, it is the spin of democracy that keeps the top upright.

A bit wobbly, at times, considering the human aspects. "Congress is just a culmination of fairly ordinary people who, for the most part, are trying their best to make decisions," she says. "And even if they're not the best decisions, at least they are trying."

As a daughter of parents who grew up under communist rule in Bulgaria, what encouraged her most is what she did not see more than what she saw during those intense days of impeachment hearings. As singular as the experience was, it was oddly, too, just another day. It did not turn the city into bedlam, she says. "The biggest difference was that there was absolutely no difference in D.C."

And out in front of the White House, the same camp of protesters was still there, "and they were yelling terrible slurs, but no one shuts them down," she says. "Because it's essential. It is something we value. Thoughts and views are always going to be accepted here, and that's what it comes down to." **A**

LISTEN UP

What you don't know can hurt you or those you love. **Utah Public Radio** and the **Tribal and Rural Opioid Initiative** are launching a 12-episode podcast "DEBUNKED" to address opioid use myths. "DEBUNKED" is hosted by USU student Timothy Light and Health and Wellness USU Extension Specialist Sandra Sulzer.

Ever need advice giving advice to your undergraduate? "Aggie Parent and Family Podcast" can help. The podcast includes practical information on topics including campus safety and supporting students as they enter their second semester. *The podcasts are available on Spotify, Apple Podcasts, or through* usu.edu/parents/newsletter. *Visit* www.upr.org/programs/debunked *for more information.*

RELATIONSHIPS

> *Talk more, use your phone less, and be where you are.*
>
> **— David Schramm,**
> Utah State University Extension family life specialist

Do you use your cell phone at the kitchen table?

What about in bed? **David Schramm,** Utah State University Extension family life specialist, is on a mission to safeguard these two important areas to help strengthen couple and parent-child relationships. He recently surveyed 631 parents across the country about "technoference," the way technology use interferes with face-to-face interactions with others, and found that 62 percent admit it's a problem in their family. More than half of parents report that they are on their phones too much. And nearly a quarter feel that their partner's use of technology in bed interferes with their sexual relationship.

More Survey Findings:

- **70%** reported that technology interrupts family time at least occasionally.
- **40%** consider technology a big problem in their marriage.
- **55%** feel their spouse/partner spends too much time on their cell phone.
- **48%** wish their significant other would spend less time on their cell phone and more time with their children.
- **40%** of adults are concerned about the influence technology has on their relationship with their children.

BY THE NUMBERS

134,000+

The number of students from all 29 Utah counties, 50 U.S. states, and 55 countries who have taken **USU Online courses** and pursued more than 60 degrees and certificates since USU became the first Utah university to offer online education 25 years ago.

134

The number of cadets in USU's **Air Force ROTC.** They boast the third-highest GPA of all 145 university detachments across the country. A good dose of pride comes with the recognition, said new commander Lt. Col. Richard Reed "because we compete in everything in the military."

No. 23

USU's ranking among **best online bachelor's programs in the nation** in 2020 by *U.S. News & World Report*. USU also ranked sixth in the nation for its online master's education program and was ranked on the online MBA list for the first time.

102,942

The number of downloads of **Colter Hollingshead's thesis** "Discharge Coefficient Performance of Venturi, Standard Concentric Orifice Plate, V-Cone, and Wedge Flow Meters at Small Reynolds Numbers." The 93-page study from 2011 is the most-downloaded research manuscript at USU.

DOJ Agreement Signed

In February, Utah State University signed an agreement with the **United States Department of Justice** after a review of the university's Title IX compliance between 2013 and early 2017. The DOJ reviewed USU's policies and practices for responding to incidents of sexual misconduct involving students and found university-wide failures in addressing sexual misconduct, says USU President Noelle Cockett. "We've made sweeping changes since 2016, and this agreement further lays out a series of steps we will take to prevent sexual misconduct and respond to it appropriately when it does occur."

Among the actions laid out in the agreement, Utah State will update and revise the sexual misconduct policy and the procedures for investigation and disciplinary action and require all incoming students to complete training regarding sexual misconduct prevention beginning fall 2020. Since 2016, USU has overhauled Title IX oversight and compliance; increased staffing in the Office of Equity; and trained more than 10,000 students in bystander intervention. *For a complete list of actions visit* www.usu.edu/sexual-assault/timeline/index.

Cedric Mannie '20.

Healthy Connections

Cedric Mannie grew up in the community of Kinlichee on the Navajo Reservation. The closest grocery store was an hour away, and the only access he had to the internet was at his school. The senior computer science major recently developed a cost-effective health monitoring wristband, and taught American Indian children living on reservations how to build their own. He also partnered with fellow Native American student Kameica Yazzie, a kinesiology and health science major, to lead a workshop called, "We Got the Beat," to introduce Native American children to technology and higher education.

> *The environment I grew up in, I would go into town and see people intoxicated or on drugs, and it made me want to try and make a change.* **— Cedric Mannie**

Advancing Aviation Safety

Two Utah State University alumni helped develop Autoland, a new flight control system for general aviation aircraft released by Garmin International that allows aircraft to safely land without human intervention in case of pilot emergencies.

Autoland controls and lands an aircraft at the nearest suitable airport. **Bailey Scheel** ('14 Mechanical and Aerospace Engineering) and **Eric Sargent** ('09 Aviation) spent two years working as part of a team at Garmin to create the technology. Scheel, who learned to fly an airplane before driving a car, served as Autoland project manager and systems engineer. Sargent was the Autoland test pilot for the Piper M600 aircraft.

Alumni Eric Sargent, left, and Bailey Scheel, right, helped Garmin International create the Autoland flight control system.

AWARDS

Teaching Honors for STEM Teachers

Three Aggies, **Deborah Stringham Morgan** ('02, Geology), **Orson "Mike" Spencer** ('07, Mathematics; M.Ed.'12), and **Rachel Checketts Reeder**, a doctoral student in mathematics education, are among four Utahns selected for the national Presidential Teaching Award for Excellence in Mathematics and Science Teaching. The recognition is the nation's highest honor for K–12 teachers of science, technology, engineering, mathematics, and computer science. It is awarded by the White House and the National Science Foundation.

◀ Accolades for Agronomy

Idowu Atoloye, a doctoral student in the Department of Plants, Soils and Climate, was awarded the Nelson Yield-Limiting Factors Graduate Student Scholarship by the American Society of Agronomy. Honorees are selected for their research on aspects of soil and climate that limit crop production, as well as their long-term personal goals. Atoloye aims to help farmers in Sub-Saharan Africa to adopt sustainable practices that conserve or improve soil health, increase farm productivity, and share technical expertise and training.

Extension Nets Boost for Remote Work

Utah Governor's Office of Economic Development awarded **Utah State University Extension**, Garfield County and Panguitch City a grant to create a rural co-working and innovation center to act as an incubator for small businesses and startups. The center will provide co-working space and equipment for rural residents to participate in the remote workforce, including a new commercial kitchen to allow entrepreneurs to create food products to promote local food tourism or online food sales. "Creating this innovation center in Garfield County will certainly boost the local economy," says Callie Ward, USU Extension family and consumer sciences assistant professor. "This will allow people who moved away from their rural communities because of work to return to their hometowns."

> *Most of the time the bus is accessible—you can get on the bus and you can get off the bus...the part that we're most concerned about: is it actually usable? Can you participate in community life using the bus?*
>
> **— Keith Christensen,** USU associate professor of Landscape Architecture and Environmental Planning

Beyond Accessibility

Not all neighborhoods promote social interaction. Some neighborhoods feel safer to be outside. People with disabilities are less likely to live in these neighborhoods, says **Keith Christensen.** He and **Ziqi Song,** a civil engineering professor, were awarded a five-year $2.5 million grant by the National Institute on Disability, Independent Living, and Rehabilitation Research to examine community planning and policies throughout communities on Utah's Wasatch Front. The team will assess the costs in resources, energy, and time for individuals with disabilities to participate in daily life and aims to produce a community infrastructure planning tool and model policies that allow people to live independently, pursue meaningful careers, and enjoy full inclusion in their communities.

Photo by Rick Parker.

Ten centimeters. That's all the space gymnasts get to spin, tumble, and dance across the balance beam. And for Autumn DeHarde, that's all the space she needs to fly. On Valentine's Day, the Utah State University junior won both the beam and floor exercise titles during the Aggies' defeat of No. 20 Southern Utah University. The Sussex, Wisconsin, native is currently tied for second all-time in school history with 10 career beam titles to date. But it was her strength on floor—DeHarde's favorite event—that recently helped her lead the Aggies to edge out Boise State after an eight-year drought against the Broncos.

CELEBRATING FIRSTS

The graduating class of 2020 started a scholarship to honor people who are "the first" of something. The scholarship will be named after Utah State University President Noelle Cockett, the university's first female president, and **Sami Ahmed,** the 2019–2020 USU student body president. The scholarship recognizes students who blaze trails for countless others to follow. "I think this is especially great for first-generation college students," Ahmed says.

SPORTS

One Last First

Senior **Sam Merrill** was walking to practice when he heard the news that his USU basketball career was over. He read on his phone that the annual NCAA Tournament was cancelled to prevent the spread of COVID-19.

While the USU players were mentally preparing for an early end to their season, the official announcement was gut wrenching, the senior guard says.

Merrill led the Aggies to their second straight Mountain West tournament title and sank a 3-pointer with 2.5 seconds left in the championship game to break a tie against San Diego State—a shot that won the game and punched USU's ticket to The Big Dance.

The team clawed back to a 26-8 record after a disappointing start to their conference play. "We needed to be knocked down to come back up," Merrill says. "We fixed ourselves, looked in the mirror, and ended it the perfect way possible." Nearly a storybook ending, but with the final pages ripped out.

"We wish there was more," he admits. "I feel for those spring sports that were just getting started."

HONORS

Rose Hu, professor of electrical engineering, was named a fellow of the Institute of Electrical and Electronics Engineers, the world's largest association of technical professionals, for her contributions to the design and analysis of mobile wireless communications systems.

The Carnegie Foundation for the Advancement of Teaching named Utah State University a Carnegie Community Engagement Classification, the highest level of recognition for community engagement.

Love the Outdoors? Get to Work.

Utah State University, the University of Colorado Boulder, and Western Colorado University recently launched online, self-paced, non-credit certificates in three areas of **Outdoor Industry Business**: public policy, increasing outdoor participation, and sustainable business innovation. USU's Outdoor Industry Business Certificate will focus on sustainability in product design and supply chain.

For more information about Outdoor Business Certificates, visit outdoorindustry.org/OIBC.

Designing for People

There is a deficit of skilled IT workers in Utah and a new online bachelor's degree program in **Human Experience Design and Interaction (HEDI)** aims to meet the growing need. Students will learn human-centered design skills necessary for fields such as game studies, new venture management, multimedia, product development, user experience and interface design, and data analysis. Students can select an emphasis in instructional design, video game design, product design, or multimedia design. The first cohort at USU will begin this fall.

> *We are surrounded by design that has been created by people, but often not with people in mind. Whether it's an app, a car dashboard, or even a product, we deserve to interact with software, tools, and spaces that make sense for us.*
>
> **— Andy Walker,** Instructional Technology and Learning Science department head

Nurses Wanted

Utah faces a nursing shortage that Utah State University is working to address in its new **Registered Nurse (RN)** to **Bachelor of Science in Nursing (BSN)** completion program. The RN to BSN completion program is designed for licensed RNs who want to pursue their degree while balancing work and other life responsibilities.

RESEARCH

Buried Secrets

In 1960, as the Cold War heated up, the U.S. Army launched "Project Iceworm," a top-secret effort to build a network of mobile nuclear launch sites under the Greenland Ice Sheet. Hampered by brutal blizzards and unstable ice conditions, the project, located at Camp Century in northwestern Greenland, was canceled in 1966.

A curious remnant of the doomed project—sediment collected at the bottom of a 1.3-kilometer-long ice core extracted from the site—languished in storage for years at New York's University of Buffalo. Largely forgotten for decades, the sub-ice samples, which captured a rare slice of dirt from beneath the ice sheet, have recently sparked intense, multi-university, multinational study. Among the experts tapped to analyze the precious specimens is Utah State University geoscientist Tammy Rittenour who directs the USU Luminescence Laboratory.

Stored in 28 "cookie jars" and currently held at Denmark's University of Copenhagen, the muddy sediment collected from beneath Camp Century provides an extraordinary glimpse into the past, she says. "Very few ice cores taken from Greenland have reached under the ice sheet. Why the samples are significant is they provide clues to when Greenland's ice-covered terrain was last exposed and ice-free."

A declassified photo from the early 1960s of the U.S. Army's abandoned 'Project Iceworm' at Camp Century in Greenland. Photo from the U.S. Army.

Such information could answer questions about Earth's future global climate and sea level under warmer conditions. Preliminary findings from Rittenour's lab using OSL dating of the samples suggest the site was free of ice as recently as 400,000 years ago during a warm period between ice ages, she says. This challenges long-held assumptions the Greenland Ice Sheet has covered Camp Century's site, without interruption, for more than two million years.

"The Greenland ice sheet may be more sensitive to climate change than we realize," Rittenour says. "This has important ramifications because if the sheet melts, sea level will rise significantly and drown coasts globally." A

—Mary-Ann Muffoletto

ENVIRONMENT

A More Sustainable USU

In 2007, then-USU President Stan Albrecht signed the American College and University Presidents' Climate Agreement, setting goals to reduce the university's carbon footprint. Between 2007 and 2017, USU's emissions fell approximately **30 percent** per square foot.

USU President Noelle Cockett expands this commitment with implementation of new recommendations from USU's Greenhouse Gas Reduction Steering Committee that will lead to greater sustainability, cost savings, and improvements to USU facilities and culture.

Among the actions adopted:

- **Dedicate up to $60,000** annually in ongoing funds to allow USU Facilities to purchase a renewable energy portfolio from an external power provider.
- **USU Facilities will invest $500,000 each year** toward improving building energy efficiencies.
- **Create a $10 per trip carbon fee** on all university-sponsored airline flights that will be used to invest in on-campus projects that reduce USU's carbon footprint.
- **Enhance academic programs** to raise awareness of sustainability and climate change for all USU students.

Back on Track

by Kristen Munson

"My life went sideways and never really got back on track."

At least, that's how it felt for Lisa after she left a bad marriage and needed to raise her young daughter on her own. (Lisa has asked that her last name not be disclosed.) Without a college degree or much work experience, Lisa worked low-paying jobs to pay rent and purchase food. Finishing the degree she started at Utah State University in 2001 seemed like an impossible expense to add. Then in 2019, Lisa, tired of facing an uncertain future and "hovering at the poverty line," decided it was time to finish her degree.

"I was raised to be a mom," she says. College was the first time Lisa realized that school could be fun and that she could handle the work. But she swerved from that path with marriage and motherhood.

"Now I will finish. It might take until I am 60," she laughs, "but I will finish."

The Student Emergency Hardship Fund allowed her to begin course correcting her life. Since 2015, the fund has awarded scholarships to 225 USU students facing unexpected circumstances such as job or housing loss, the death a family member, divorce, or medical bills that could disrupt their education. In 2018–19, the average scholarship awarded was $1,877.45. This emergency funding can make the difference between a student staying in school or dropping out.

"I never would have started school [without it]," Lisa says.

The night before classes began, she went online to look up room numbers and saw a blank screen. Her financial aid hadn't come through yet. Lisa spent the next day in her adviser's office stitching together a schedule.

"Everything was a wreck," she says. "I couldn't even buy gas."

It took weeks to sort out. In the interim, she was directed to the Vice President for Student Affairs office and told about the Student Emergency Hardship Fund. The money allowed Lisa to buy books, pay off a computer she purchased for school, and covered some medical expenses.

"It gave me my start when there wasn't anything else. And I am so grateful," she says.

Lisa is now solidly in the groove of school. She knows what she is doing. And she knows a brighter future exists. Her daughter, now 20, has just enrolled at Snow College.

"I feel like I let her down in so many ways," Lisa says. "But she really wants to go to college. I'm dialed in. I can help with that."

With her own graduation still a few semesters away, Lisa knows it's possible and she is excited for the future "to have a career," she says. "Something that will be meaningful to me, that will pay the bills, and just to say 'I did it.'" **A**

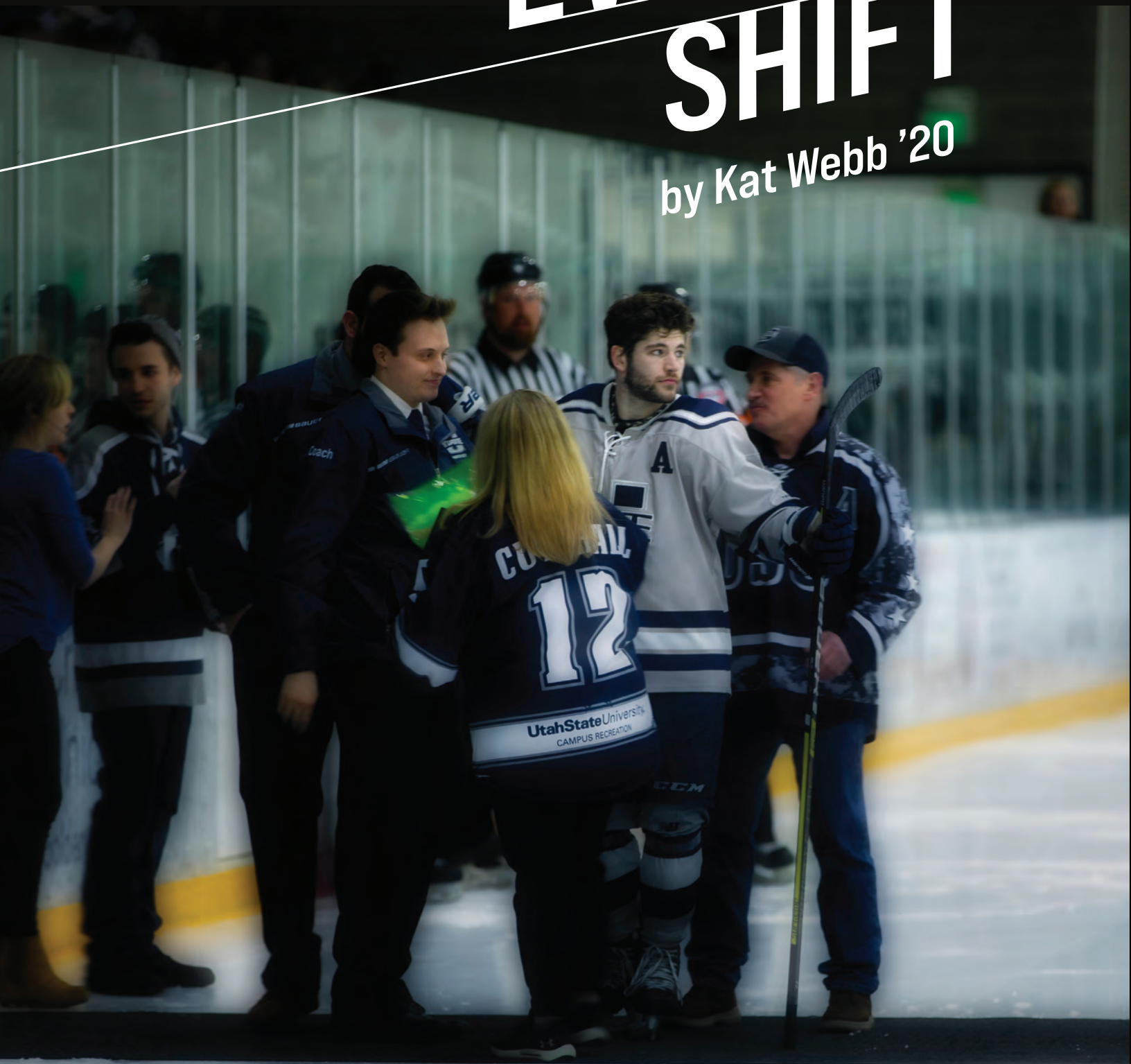
For information about the Student Emergency Hardship Fund or to give to the scholarship, visit studentaffairs.usu.edu/scholarships/eh-donate.

Photo courtesy of University Advancement.

The Student Emergency Hardship Fund helps students like Lisa who face unexpected financial obligations that could disrupt their ability to finish school.

EVERY SHIFT

by Kat Webb '20



Twenty-one years of hard work have led to this. That's what senior Chris "Cudi" Cutshall kept telling himself.

The normally packed barn of the George S. Eccles Ice Center in North Logan was nowhere near its 2,400-person capacity, but Cutshall understood. It was a Thursday night game the week before Thanksgiving. It wasn't a rivalry game against another Utah team and one the Aggies were expected to win against the Northern Arizona IceJacks. (And they did, thanks to an assist from Cutshall in the final four minutes.)

But the night was special for Cutshall. It was the first of four games in four days that make up the annual Beehive Showcase. His family and friends from Alaska were waiting in the lobby for him to get cleaned up so they could head out to eat.

But they weren't the only ones waiting.

Cutshall emerged from the locker room to see dozens of fans gathered in the lobby, waiting for a chance to shake No. 12's hand. He smiled for pictures, flashing his trademark missing tooth. He signed autographs. He stood there for another 40 minutes while employees worked around him to clean up the rink before it would all repeat the next day. And he did it without showing an ounce of exhaustion or pain.

The bursitis in his knee made it excruciating to stand for more than 15 minutes—especially after playing on the ice. He signed posters and shirts while his right hand and wrist throbbed. And he'd do it again. Every day, for the next four days.

Cutshall refused to miss a single game that weekend. He had to play. His dad and childhood best friends had come to town to watch him displace one of the top teams in the division. But it was more than that. Cutshall had to play because, after the American Collegiate Hockey Association Nationals in March, the 24-year-old senior may never play competitive hockey again.

"I'm preparing for that moment, for that last time I touch the ice as an Aggie," says the 5-foot-7 Anchorage native. "I don't want to be weeping, wishing I had more time."

Freshman Shea Bryant couldn't say the same.

The first-year rookie was home in Menlo Park, California, watching his teammates through the TV as he recovered from emergency bypass surgery on a blood clot in his popliteal artery. He tried to convince doctors to let him play again, only to be told that if he continued playing competitive hockey, he'd be back in the hospital to have his right leg amputated within the next three years.

Fighting the Odds

No one expected Cutshall to get this far. Not even his father, Jim.

"He was always the smallest one on the team," he says. "But he always had the best work ethic, too."

When his son was 11 years old, Jim took him to the doctor because he was always tired, always getting sick.

"He was a skinny thing," Jim says. "I just thought he was growing, but the doctor was like, 'You ever feed this kid?'"

Cutshall had diabetes. It had gone undiagnosed for so long his body was feeding on its own fat and muscle. He was hospitalized for a week as doctors fought to get his blood sugar under control. Jim slept on the floor by his bed every night.

The day Cutshall was released, still feeling miserable, was a hockey practice day. He insisted he needed to go.

"I probably shouldn't have let him go, but he was convinced he needed to be there," Jim says. "I still didn't really know anything about blood sugar, or the highs and lows, or anything, so I just let him get dressed and skate off."

But Cutshall was dead on his feet within a few minutes and skated back to the bench to talk to his dad. The coach, a former player for Alaska's semi-pro team in Anchorage, went over.

"Having a blow already?" he said.

Cutshall looked up at him, and said "Coach, I'm sorry. I just got out of the hospital today. I just got diagnosed with diabetes. I was in bed for a week."

He turned to Jim, who confirmed the story. A few weeks later, the coach told Jim how glad he was to have his son on the team. Over the years, many

Chris Cutshall looks back at his team during the regular season final against Weber State in late February. He was one of three graduating seniors honored that night. Photos by John DeVilbiss.

people would tell him how much they love his son and how special he is.

But "special" and "destined for success" are two very different things. Jim told his son there would always be room on a team for the hardest working player, and it was advice Cutshall took to heart.

"I just wanted to prove everyone wrong," he says.

The Chance to Play

Bryant knows what it's like to play through pain. "Watching your team go into a game when you can't help them is one of the most difficult feelings in the world," he says.

While attending the prep school Gilmour Academy in Ohio, Bryant played 40 games before his hips gave out. He was diagnosed with femoroacetabular impingement (FAI), often called 'hockey hip,' because it affects 1-in-4 players. It's also highly treatable. With surgery, 90% of NHL players with FAI return to the game within one year and play at the same level as before.

While there was a small chance he wouldn't skate again, Bryant was back on the ice in eight months.

But it was not his first bout with an injury. When he was in high school, Bryant began to feel overly sore in his right shin after practice.

"I just couldn't pull my foot towards me or flex it at all. It was a challenge for skating because skating is really using your foot to flick off the ice and generate power," he says.

Doctors found a blood clot in his popliteal artery caused by Popliteal Artery Entrapment Syndrome—a condition caused when an extra band of muscle compresses the artery. One week before his 16th birthday, Bryant watched, highly sedated, as doctors worked to punch the clot out to avoid bypass surgery. And when his doctor told him there was a chance he couldn't play hockey, Bryant refused to believe him.

Shea Bryant initially thought his aching foot was a bump in the road, but it turned out to be the end of the road for the first-year rookie.

And when he had to have his hips operated on two years later, it also kickstarted his desire to play for a college team rather than taking a year or two off from school to play in Juniors.

"I kind of realized after my hips blew up, I was like, I really gotta put more effort into school, because you only go to school once, and you can play hockey the rest of your life," Bryant says.

The Toll of the Game

In Logan, everyone wants to meet Cutshall's dad. At one of the Beehive games, Jim went to get a hot dog between periods. He came back 20 minutes later, his food untouched.

"Long line?" asked one of Cutshall's best friends, Max Kaercher.

"Nope. But I think I just met all of Logan on the way back up here." Jim replied.

The hard truth is that passion and hard work don't often win out over size and speed. So Cutshall isn't just another hockey player in this northern Utah town.

He is hope.

Whenever Cutshall was rejected, or a coach would underestimate his abilities, Cutshall would ask himself if it was the end of hockey. He'd pray for an answer, but until he got one, he'd keep playing. He wouldn't slow down.

"He's gritty," Kaercher says. "Cutter's one of those kids you love playing with, but hate playing against." Cutshall is the only one of his group of high school friends who still plays competitively.

"In my senior year, I only got about 10 minutes of ice time, and that was in the last game of the season," Cutshall says. "But in that game, me and another kid in the same situation were the only ones to get goals."

He and his dad wondered whether it was worth it to keep trying, but Jim says "doors just kept opening" for Cutshall. A former soccer coach bankrolled a trip to Vegas for a showcase. A coach from Europe at the tournament recruited Cutshall to play in Sweden. And when that fell through, former Utah State University hockey coach Jon Eccles was the first to call to offer him a place on the team in Logan.

"I miss it, I miss the brotherhood," Kaercher reflects. "I always loved the competitiveness of hockey, but it really took a toll on my body with injuries."

Jim says his son is at the same point. "For Chris, the passion's never been stronger, but the body's not healing anymore."

Kaercher and the others nod.

"For me, it got to the point I decided I'd rather keep playing until I'm old," Kaercher says. "It's not as competitive in the men's leagues, but I'm not getting killed either. I hope Cutter sees that, sooner rather than later."

"He could barely get out of the chair after breakfast this morning," Jim says. "The conversation was always, 'How bad do you want it? What do we need to do to get there? Is it possible? So that when you leave, you leave it in your way.'"

USU sport psychology professor Richard Gordin says the emotions an athlete goes through when they're near the end of their career are not dissimilar from the five stages of grief.

Cutshall says those conversations have been instrumental in his outlook,

"Every shift. That's my motto. Every moment, take it in. So even when I'm hitting the ice the last time, I'm not thinking about what I'm losing, but looking at what I've created."

The End

But the knowledge that his career was over blindsided Bryant.

He'd only been an Aggie for three months when he realized something was wrong. He'd been lifting weights and conditioning to build up his strength for the NCAA Division II team. His foot started aching.

"I'd be walking and think, 'Oh, it doesn't feel right, like this kind of feels similar.' I told my parents, but they said 'it's just in your head,'" Bryant says. "We literally thought that because the doctor said there's no way for it to come back."

Then over the next two weeks, the sensation spread up his calf. He flew home to see his doctor, expecting a two-week recovery time after the medical team removed the suspected clot—just like last time. But his muscles had grown so much that he had three clots, an aneurysm, and a damaged artery that could rupture at any minute.

"You can't play hockey anymore," his doctor warned.

"But what if I do?" asked the 19-year-old, who had spent the last 15 years of his life devoted to the sport.

"You can't. You can ignore me and play behind my back, but I won't be able to save your leg next time."

Bryant texted the team the news, and while his head understood the process, it didn't feel real for months. He'd left Utah thinking the upcoming surgery would be a bump in the road, but it had turned into the end of the road.

But his Aggie friendships remain. Four months into life without competitive hockey, Bryant sees the team nearly every day. Just like on the ice, the veterans look out for the rookies.

"I had multiple shoulders to lean on," Bryant says. "The support system made a world of a difference, because it's made me feel like I'm not alone.

I still feel like I'm one of the team, and that was extremely key in the recovery mentally and physically."

The day after the showcase, Cutshall was back at the ice rink to keep score for the rec leagues. He didn't joke with the refs or chirp at his former teammates like he had the week before. He huddled at the scorekeeping desk as he sipped Gatorade and tried to get up the motivation to open his laptop and work on the homework he'd neglected all weekend.

He made two airport runs to Salt Lake City in 12 hours. And he wasn't looking forward to driving in more holiday traffic for Thanksgiving two days later.

Cutshall was worn down.

"It hit me when I got to the airport, sending my dad through security was the closure on my last Beehive," he says. "I didn't want to leave, or for him to go, because it makes it 100% official."

"Every year. I've played competitive hockey for the last 21 years," he says. "How do you cope when everything you've done comes to an end?"

As a sport psychology professor and consultant for USU athletics, this is a problem Richard Gordin knows well. He says the emotions an athlete goes through when they're near the end of their career are not dissimilar from the five stages of grief.

"They're going to have emotional upheaval once the athlete realizes it," Gordin says. "When they become aware or they're seriously injured, their emotional state can vacillate seriously, and they can feel disconnected, shock, self-pity."

Gordin says there are four main ways an athletic career can end: an athlete can be cut from the team, they can age-out, freely choose to stop, and—most commonly—they can suffer a career-ending injury.

Cutshall's situation is a blend of the latter three. His right hand hasn't been the same since he broke five bones in it in January. This spring, he is scheduled to undergo two surgeries on his elbows to repair damage on both his median and ulnar nerves.

"I'm already hurting, and the surgeries may make the choice for me," Cutshall says. "With nerves, you never know how they will heal, so I may not be able to handle a stick after that."

Before It's Gone

"Athletes can suffer identity loss if they can't play anymore, and when the sport's been a big part of their life, it's even harder in those people," Gordin says. "They can experience fear and anxiety on whether they'll recover, or where they'll be in the lineup if they do come back. It's quite a complicated area."

And it's complicated even more by athletes choosing to play through injuries.

After overextending his elbow and fracturing the head of his radius at Gilmour, Bryant's doctor advised him to wait a few weeks before playing. Bryant responded: "I'm playing, whether you clear me or not, because in USA Hockey, I know that you only need a doctor's clearance for concussions."

Kendra Gilmore, USU's athletic club trainer, says that over the three years she's been the athletic trainer at USU, more and more players feel comfortable sharing with her that they're injured.

Many athletes want to push through and will fight through a little bit of pain to play, she says "but obviously, with more serious issues like concussions, there's a whole return to play protocol that they have to go through."

"EVERY SHIFT. That's my motto. Every moment, take it in ... I'm not thinking about what I'm losing, but looking at what I've created." — Chris Cutshall

Telling an athlete they need to end their career, even if it's for their health, is one of the worst parts of her job. And she's had to do it multiple times this year.

"The biggest thing is just making sure they understand that you're looking out for their best interests and making sure that they realize the risk, realize the reasons why they're getting pulled out," Gilmore says. "And that it's not only for their health for right now, but for the future. And that was a big thing with this year, talking about how 20 years down the road, we want you to feel

normal, we want you to feel healthy, and be able to do your daily activities."

But that can be a hard message to swallow when playing sports has been your life until that point. Jim says growing up in Alaska makes it hard to see life beyond hockey.

"It's supposed to be fun, especially when they're young," Jim says. "I try to tell all the parents who come up to me that it's not life or death. One day they won't want to play anymore, and that's fine. Life's more than hockey. But I don't know if they listen."

His own son continues to struggle with this. In Cutshall's spare time, he volunteer coaches for the valley's U12s, and he gives private skating and hockey lessons. Even on nights when he's working as a score-keeper for the rec games at the rink, he makes time to do the team's laundry so it's fresh for game days.

Alison Meifert, USU's team manager, says no one on the team spends more time at the Eccles Ice Center than Cutshall. "He literally doesn't do anything else. If he's not at school, he's at the rink."

His roommates say "He's never home."

But Cutshall doesn't see it that way.

Because, to him, hockey is home.

The shattered teeth, the third-degree tear in his olecranon joint, the bursitis, the carpal tunnel, the tight hip flexors—it all adds up, but it doesn't matter. Because his time at USU has an expiration date.

"I'll stay late and do the team's laundry, or I'll hang fliers in the freezing cold until midnight, but I'm not gonna hate it," he says. "Because one day, I won't be here, and even these nights are ones I'm gonna miss."

That's why he plays like he's fighting for a spot in the next stage, even though he knows he's probably not.

Every shift.

Every moment.

Before it's gone. **A**

An earlier, shorter version of this story appeared in the Logan Herald Journal.

Chris Cutshall's life was a blur between school and rink. And while his love of the game and playing for USU was boundless, he knew it came with an expiration date.

YEAR OF THE woman

Behind the Mask

By Janelle Hyatt

As a graduate student, poet Shanan Ballam '97, MS '00 found herself staring at a blank page. She wanted to express her regrets and the growth arising from sinkholes in her life: the shadow cast by an angry, alcoholic father, a sister stalked and menaced by a former husband, a brother's suicide.

And also, the occasional oasis, like a grandmother who cherished the young Shanan, but whose light had been muted by a restrictive culture.

But, no words came.

Her mentor at the University of Nebraska sat her down, remembers Ballam. "She told me, 'If you're not able to write, why don't you try a persona or a mask.'"

And so Ballam took Red Riding Hood as her voice. The ancient fairy tale neatly dovetailed with the three major characters circling in her own mind: the naive, uncertain Red herself, a caring grandmother, and a predator.

> "The way I approach it is, everybody has something that they want to express ... and poetry is a very economical way to do that."
>
> —Shanan Ballam

Ballam's first poems as Red, published in the 2010 chapbook *The Red Riding Hood Papers*, were fraught, sometimes bleak and tinged with violence. In 2019 she revisited her life as Red in a second collection, *Inside the Animal: The Collected Red Riding Hood Poems*. The new poems describe how Red and her world, like Ballam herself, have shifted and enlarged.

In August, she was inaugurated as the new Logan City Poet Laureate. Ballam, a senior lecturer in the English department, is the second poet to hold the post, following the path set by Star Coulbrooke, who was appointed in 2014. Coulbrooke '96, MA '98 directs USU's Writing Center.

So as she moves between her varied roles, does Ballam see herself as a teacher first? Or a poet foremost? She says she's actually found a way to merge both paths. She's taught in USU's Creative Writing Program since 2010 as well as in multiple workshops around the state where she's seen the power and sway of poetry.

"The way I approach it is, everybody has something that they want to express—something that's beautiful, something that's personal or even just commemorating another person," she says. "Everybody has that desire to express. And poetry is a very economical way to do that."

To further this approach, she'll be hosting workshops and working closely with the Logan City Library.

"I prefer to write in an intimate space," she says. She's inspired in part by a sister who's wheelchair-bound with multiple sclerosis and cannot travel easily.

But more than that, she says, "I'm very comfortable in a room where we can all write together and be a part of something."

She appreciates the map provided by her predecessor and colleague, Star Coulbrooke, she says. "I'll be building off of the community that she created. She did a beautiful, excellent job and brought a lot of people together."

Ballam clearly remembers the first time she put her thoughts to paper in a poem. She was just a third-grader when she scrutinized a storm as it swept over the garden. "I watched it very carefully," particularly one rose whose petals had been savaged by the rain, she said. "I wrote kind of a love poem to a rose."

Perhaps there's a tie between that rose and her identification with Red. Even beginning with the first poem in *Inside the Animal,* readers will quickly catch on that she's not retelling the old tale. The poem, "Red Riding Hood Opens the Door," begins: "There is a house. / Inside the house / is a wolf. Inside the wolf / an old woman. Inside the / old woman an empty womb …"

In the years since her 2010 collection, she says, "the poems have evolved and became something different." For instance, she wanted to flesh out the storybook character she identified with her own grandmother. "I wanted to give her a voice, and so in many of the poems about (Red's) grandmother, it's actually my grandmother I'm writing about."

Photo by John DeVilbiss.

Fairy Tales are malleable things that shift and reform with the society retelling it. That was Ballam's intention as she sought to "break out of the narrative."

Fairy tales are malleable things that shift and reform with the society retelling it. That was Ballam's intention as she sought to "break out of the narrative."

Wolf, a complex, multi-faceted character, is perhaps the character most bound by the tale. In the poem "Wolf Dreaming: The Fantastic Library," Wolf reads about the fairy tales—Rapunzel with her long locks, an old woman "who sings about babies in cradles rocking high."

Then he turns the page and sees Red. The poem reads, "Once, in a book, he saw the girl in the red cape and his heart sang." But the fairy tale goes on to speak about Wolf himself, "the hideous beast with awful teeth that made the girl's smile fade," and he chafes against the story's bounds.

Red, too, has dreams and fantasies that want to escape the story. She thinks of the "glimmering city" where she was raised by a distant and distracted mother who had fled the forest, in the process breaking her parents' hearts.

One reviewer, the poet William Trowbridge, explains it this way, "The poems are set in an inner landscape, lushly described, charged with allure and menace, terrifying beautiful." **A**

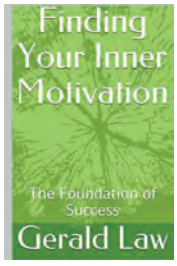
This story first appeared in Liberalis*, the alumni magazine for the College of Humanities and Social Sciences. To read Shanan's poem "Red Riding Hood Opens the Door," go to* utahstatemagazine.usu.edu/poet-laureate-poem.

"It is altogether possible that riding in a cramped and crowded stagecoach offers a glimpse of the eternity faced by occupants of coffins I have built."

— *Excerpt from* PineBox Collins, *by Spur Award-Winning Author* Rod Miller

PineBox Collins
By Rod Miller '75

Five Star Publishing,
April 2020



Finding Your Inner Motivation: The Foundation of Success
By Gerald S. Law '97

Self Published,
July 2019

Adulting Made Easy(er); Navigating from Campus to Career
By Gerry O'Conner MBA '93

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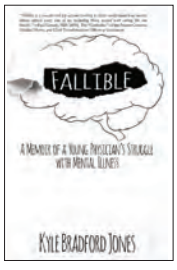
October 2019

Here We Go Digging for Dinosaur Bones
By Susan Lendroth '76
Illustrated by Bob Kolar

Penguin Random House,
March 2020

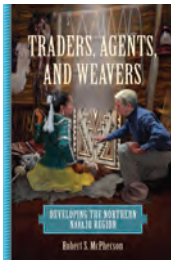
The Art of Gaell Lindstrom:
Painter of Life and Land in Utah and Beyond
By Dr. Braden Lindstrom & Dr. James Swensen

Chatwin Books, November 2019



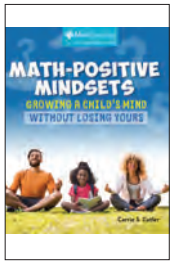
Fallible:
A Memoir of a Young Physician's Struggle with Mental Illness
By Dr. Kyle Bradford Jones '05

FriesenPress,
September 2019



Traders, Agents, and Weavers:
Developing the Northern Navajo Region
By Robert McPherson

University of Oklahoma Press,
March 2020



Math-Positive Mindsets:
Growing a Child's Mind without Losing Yours
By Dr. Carrie S. Cutler '95

Black Rose Writing,
April 2020

Jim Mattis's call sign in the U.S. Marines was Chaos. He has been described as "the warrior monk." But these days, Mattis is focused on bridge building at home. Photos by John DeVilbiss.

The Art of Listening

by Kristen Munson

Jim Mattis doesn't flinch. Not when Indonesian special forces untied bags of snakes during a 2018 demonstration and then bit their heads off to impress him. Not when a protester interrupted his Jan. 21 talk "U.S. Leadership on the World Stage: Getting it Right and Healing Rifts at Home" at Utah State University moments after it began.

Mattis also doesn't appear to eat—at least publicly. Shuttling between meetings with legislators, business leaders, and students across Cache Valley, he is fueled by soda and purpose alone. Because Mattis is on a mission.

The retired four star general and former secretary of defense is touring the country to discuss its great failure: an inability to listen to differences of opinion.

"Some of you know him as the patron saint of chaos, the warrior monk," said Jeannie Johnson, associate professor of political science. "I would like to add another title to that list that may not sound terribly glamorous at the outset, but may be the most important thing he has done for our country across the last few years. And that is bridge builder. I know it sounds like mundane work, but it is the essential work of a great nation."

Johnson, a former analyst for the Central Intelligence Agency and founding director of USU's new Center for Anticipatory Intelligence, invited Mattis to speak. She considers his December 2018 resignation letter as defense secretary "a national artifact" for its focus on maintaining alliances with foreign powers.

"He carried the mantle of U.S. power, which is immense, with dignity, with good humor, with respect for our allies, and with an open mind," she said. "One of the things that he told my students was 'listening isn't just hearing the words of another person. Listening is listening with a mind open and willing to be changed. That's a very different thing. And it seems to be an art form that we have lost in this current era of our country."

Moments into Mattis's talk, a protester yelled "war criminal." Mattis commended him.

"That is when America is great. That we can do that," he said. "I guarantee you, tonight in Hong Kong, those kids over there fighting for their freedom and waving American flags don't have the right to do that."

As a young man, Mattis had his whole life planned. After graduating college he would teach physics and history at his high school. Maybe coach football. But life had other ideas. He spent 44 years in the Marines and served as commander of the U.S. Central Command from 2010–13. Mattis is a scholar who reads vociferously.

"If you haven't read hundreds of books, you are functionally illiterate and you will be incompetent, because your personal experiences alone aren't broad enough to sustain you," he wrote in his bestselling book *Call Sign Chaos*.

Mattis believes understanding our nation's complicated history can lead us out of dark times.

"You don't just read about dates and what happened. But you really understand that human beings put themselves on the line in our revolution, writing our Constitution, fighting for civil rights, never accepting that we were complete," he said during his talk. "We are an experiment. Just a great big experiment. We have no divine right to survive."

Mattis listed the myriad threats the country faces. Terrorism. The theft of intellectual property by China. Nuclear programs in Russia, North Korea, and Iran. But what worries him most is the internal division back home. And yet, Mattis is optimistic about the future. Why? Our history."Dig through the history," he said.

"You will find the good, the bad, and the ugly. But the bottom line is there is a lot more goodness in this country—even if we don't talk about it right now. I have absolute faith in the American people, I know the military will hold the line as we come back to fundamental friendliness ... so long as we can have the kind of open discussions that allow us to work on these problems I know we can solve them. We are the greatest experiment in the history of the world."

Afterward, Mattis spoke with the protester. He listened as the student called him a war criminal. Mattis asked why the student believed that and listened as the young man explained how he read that marines bombed a wedding party during the Iraq war. Mattis suggested he check his sources and explained what happened that day. Then he extended his hand. The student wore a pained expression and then, eventually, touched palms.

Jim Mattis asked to speak with the protester who interrupted his Jan. 21 talk. The two men did not come to an agreement, but they did shake hands afterward.

"We all know that we're better than our current politics. Tribalism need not disrupt our experiment." — Jim Mattis

The following is a conversation with Secretary Mattis about closing the divide at home.

Kristen Munson: In a recent discussion with the *Washington Post* you said "I have talked about our problem, it's the way we refer to one another, it's the way we deal with one another. And no one person is responsible for this. There is no one person who is going to solve it either. We are going to have to do it together." What specific actions can leaders from both sides of the aisle take to combat this growing threat of division at home?

Jim Mattis: I have actually given this some thought. There is some political action group right now that gives veterans money if they run for office, and they don't care if they are democrat or republican. What they have to do is agree that once a week they will meet with people from the opposite party and listen and talk like normal human beings. Another thing to do is start teaching in the schools that you cannot argue an issue until you have achieved mastery of the other person's position, which is understanding—it's not rejection. A third thing is that we teach people a problem solving method. At U.S. Central Command, I had 77 nations in my unit. What I would do is I would say that you have to define the problem so well

that everyone agrees on it. Now that is hard when you have that many nations, but it's not impossible. And if you teach people that defining the problem is most of the work then the discussion is going to be very open-ended when you start. If I say hey, you know Dialectic, do you know who that is?

KM: No.

JM: He was a philosopher. Basically he said you always start these kind of discussions with a thesis. And then somebody comes up with an antithesis and you come out of that with a synthesis. And all that is the next thesis. It's the way America keeps building to be a more just and responsive society. So teach people a problem solving approach. And I didn't care when I had [central command] people there from Denmark and from Mississippi and Japan if theirs was the scientific method or the Socratic dialogues or the algebraic method, but they had to have a disciplined message that said we would first quantify the issue and then apply subjective thinking. And if you pragmatically teach that to people, then you get critical thinkers. And then things like racism fall because they can't hold.

KM: While overseeing recruiting efforts for the Marines in the West, you learned the value of persuasion and how to "create common ground where none seems to exist." Are there some examples of issues or policies where you think we can do that with?

JM: Oh sure. Most of them. Except where people decide that they want irreconcilable differences. And if somebody wants something like that democracy can't work. That is why tyrants fight and have armies and how one tyrant wins. But you take some of the most emotional issues I would say you can't accept in courts. Courts are very brittle. Win lose, this sort of thing. Legislatures are crazy, they are sloppy. You want to go out and run three miles straight up the mountain after reading what the legislature has done, but at the end of the day the legislatures are the way to make that change.

KM: If you could pick any historical leader to advise our country at this time, who would it be?

JM: Marcus Aurelius or [Nelson] Mandela. Martin Luther King Jr. Read his *Letter from Jamaica*. It's better than *Letter from a Birmingham Jail*.

KM: You have a reading list for military leaders in the back of your book. But if you had a reading list you were going to prescribe our country, what are a few titles that might be on it?

JM: Colin Powell's *My American Journey*. Mandela's book *Long Walk to Freedom* could be on. *Sherman: Soldier, Realist, American* by B.H. Liddell Hart—it shows that one person can make a difference. Probably skip *Jo Africanus* [Joseph Chamberlain]. Barbara Tuchman *The Guns of August* because it warns why you want to do things and why you don't want to do things.

KM: You close your book saying that "we all know that we're better than our current politics. Tribalism need not disrupt our experiment." What is one thing every single person in the room today can do take a step forward?

JM: Defend people who are saying things you disagree with and who are being berated for their opinions. I am not talking about a good old fashioned argument "I think you're wrong and here is why," that sort of thing. I mean where people are condemning someone's parentage. The kind of stuff that passes for intellectual talk in this country now by our woeful political class. A marine infantry squad wouldn't tolerate it. Leaders are supposed to be grown men and women. So I would say everyone has got to look for a place where someone they disagree with is being attacked and defend their right to say it. Every time they see it. No more saying "Your words are beyond the pale" or "you're unAmerican," "you're an enemy of the state," "you're an enemy of the people." You can't sit there, you have to defend them.

KM: Warfare adapts. In your book you wrote about the harm disinformation campaigns did to the U.S. military forces. It's 2020. An election year. Do you see disinformation campaigns at home having a similar effect on the American electorate—harming its ability to fight for its future?

JM: You have to be careful because you don't want to start squeezing freedom of speech between two candidates who are arguing about things, but when you see servers in Denmark that are being routed from Kazakhstan, with the same fingerprint that we saw out of St. Petersburg in the last election, we are not naive about it. In other words, when we see foreign penetration coming, we have got to do something about it. It's a big danger.

KM: A question you put to your marines: What bothers you at night?

JM: The way we treat one another as Americans now.

KM: What do you think changed? You wrote about how after WWII the Greatest Generation seemed more able to trust one another. Is that just what happens after you've been through something traumatic?

JM: No. It's a choice people are making. But I think that the technology has now allowed people to get brave where they aren't really. They would never say it publicly, or right to your face. They wouldn't say it to me to my face. I should show you some of the hate mail I get. It's just vicious. And to me, it's just punks. If they really believed it, "come on out, confront me if you really think I did those things." But most of it, it just seems to be the kind of things you do knowing you are not going to be held accountable. So I don't even know how deeply held some of this hatred is, which is what gives me hope too. That we can overcome it. **A**

Visit cai.usu.edu *to watch Jim Mattis's address at USU.*

Image by Elizabeth Lord '04, Pixabay, Wikipedia.

"If you perceive that, as a human race, we have a handle on the 84,000 registered chemicals, of which the U.S. Environmental Protection Agency has banned only nine, you would be wrong." — Jennifer Peeples

The Way We See Things:
At the Intersection of Perception

by John DeVilbiss

Perception matters. It affects how we interact with the world and what we view as threats. It can turn a seemingly benign puddle of water into an alarming threat to your toddler, or the impeachment of a president as an act of treason. Five Utah State University scholars reflect on how perception influences human behavior in their own studies relating to personal wellness.

IMAGINING TOXINS

While **Jennifer Peeples** was living in Vietnam, her perception of the invisible world of toxins began to change. So did her perspective.

In 2004, Peeples, associate professor of communication studies, was in Vietnam with her husband who was on a Fulbright Scholarship. About the same time, a group of Vietnamese citizens was suing some 30 chemical companies claiming irreparable health problems caused by Agent Orange, including birth defects suffered by a half million children and a variety of cancers and neurological problems inflicted on another two million.

Despite the decades that had passed since the end of the Vietnam War, "you still could not live there at that time and not be extraordinarily conscious of toxins, and on top of that, our son was two years old," Peeples recalls. Dioxin, the toxin found in Agent Orange, is colorless and residual. While not orange in color, Agent Orange leaves an oily sheen on vegetation. Eventually it is absorbed into the soil. Dioxin is what remains—and has remained—across much of Vietnam and caused so much damage, which is why her toddler's interest in rain puddles all at once elevated a new awareness in her. She began recognizing "that the things that I can't see are the things that are most dangerous for us and for him."

This heightened awareness of hidden toxins prompted her to begin collecting everything she could on the topic across several academic disciplines. When she returned home, she continued her research and eventually published, "Imaging Toxins" in *Environmental Communication: A Journal of Nature and Culture*. More recently, she chronicled the evolution of symbols used to convey invisible toxins and the dangers they pose at the 44th annual Honors Program Last Lecture under the title, "Picture Your Poison."

Her take away: if you perceive that, as a human race, we have a handle on the 84,000 registered chemicals, of which the U.S. Environmental Protection Agency has banned only nine, you would be wrong. If you perceive that the labels, images, and language used to describe toxins and their dangers are adequately recognized and understood across the globe, you would also be mistaken.

"The more universal these labels become, the more applicable they are to a variety of different types of toxins, but they also lose that second step which is to say, how you are supposed to interact with that toxin," she says. "So they draw attention, but they're not as good at necessarily providing warning or instruction on what you are supposed to do."

Over the past decade, Howe has tracked American perception of global warming and extreme weather risks. He recently completed a National Science Foundation grant looking into how people perceive risks from heatwaves around the country. While hurricanes and tornadoes garner more attention, heat waves actually kill more people in the United States, he says. Part of the reason is that, like the world of toxins, they are practically invisible. They also tend to affect the most vulnerable in society.

Howe and colleagues developed a model that estimated health-risk perceptions of heat waves for every state, county, and populated census tract in the United States based on individual and socio-environmental predictors of heat-risk perceptions. They looked at factors related to whether people perceived the risk to be greater for themselves and their families, and then mapped those perceptions to identify the hot spots where perceived risks were very high or low relative to their actual risk.

Some of their findings: People perceive risks very, very differently, even those living in the same city or urban area, partly depending on their socioeconomic status, race, ethnicity, etc. People at the most risk are often the ones who

Perceptions formed in information silos have the ability to skew and distort facts, stripping all reason and civility from arguments in a toxic, Agent Orange, fashion.

PERCEIVING RISK

The way in which we communicate warnings about severe weather poses its own set of challenges, says **Peter Howe,** associate professor of human-environment geography. It is called a "near-miss affect" when forecasts or projections fail to materialize, or are not as severe as first predicted.

"We see this during hurricanes when people are told to evacuate an area that's going to be in the path, and then the hurricane veers away and doesn't follow the forecasted track," he says. "In the future, those same people may be less likely to evacuate."

can least afford to take the necessary precautions, he says.

In contrast, they also found that older people tend not to see themselves as being more at risk. "One explanation could be that people in those age groups don't see themselves as elderly and, therefore, more susceptible."

Those who can change their perception of the dangers extreme heat poses are likely to take a more cautious or proactive approach, including policy makers, he says. "There's a lot of things, when it comes to heat that local decision makers can do to help reduce its impact. In urban heat islands where pavement holds heat longer, promote white, more reflecting roofs, plant more trees, create more urban parks, Howe says. Even addressing emergency management procedures, such as building networks of cooling centers where people can go if they don't have air conditioning, or if their AC goes down. Cities like Phoenix are way ahead of the curve on this because they experience hundreds of deaths every year from heat, but it's something that most cities around the country are going to need to deal with as the globe continues to heat up, he says.

SHIFTING PERSPECTIVES

Worrying is something most Americans do very well. Consider it another hidden toxin. A 2018 Gallup poll found that 45 percent of U.S. residents said they felt worried a lot, more than in any year since 2006.

Jennifer Krafft, a USU graduate student pursuing a Ph.D. in clinical and counseling psychology, is focusing on worry as part of USU's ACT Research Group. The lab's purpose is to find innovative ways to treat mental health issues. Their research focuses on Acceptance and Commitment Therapy and self-guided approaches to dealing with problems.

"Worry is a normal human thing that our minds just do," Krafft says. "Our minds were built to worry. If we can shift our perspective on worrying and not treat it as a problem or an obstacle, but something that can be there while we're doing what matters to us, I think that's a helpful shift."

Worry makes people's lives shrink and get smaller. The way in which it creates tunnel vision and obsession on worst-case scenarios—failing classes, not having enough money, letting down family and friends.

"Kind of just focusing on that and finding that your freedom to do things gets a lot smaller—your world sort of shrinks into that," she says. "So I think it's really cool as someone who works in anxiety to look at, like, 'how do we make your world big again?'"

The self-guided help uses a mobile app they developed in which users assess how anxious and worried they are feeling and rate how much they feel stuck in their worries or disconnected from what is important to them. The app also provides skill-building exercises to help users work through the most severe problems identified. The innovative aspect is the way in which the program combines self-help with group-help. It benefits participants by allowing them to interact in a group setting and practice their newly honed skills. In the process, participants see they are not alone in their struggles—that plenty of others are dealing with similar problems, Krafft says.

The data shows that the program seems to be moving the needle. "It's pretty cool to see that we got a shift over just six weeks among people who often feel like they've been worrying for most of the time for as long as they can remember."

REDUCING ECHO CHAMBERS

For all of the benefits of technology, such as the development of apps that can help people lead healthier lives, there are plenty of drawbacks, as well. While the connecting power of the internet has expanded the world, it has also isolated it, particularly in the social media realm, says **Rachel Robison-Greene,** a postdoc in philosophy. Her research interests are in metaethics, ethics, and epistemology.

The day following the impeachment of President Donald Trump, an analysis piece in the *Washington Post* posited that the decline of traditional news outlets and the ascendancy of social media are channeling Americans "into information silos." The result is that it makes "it far easier for them to view impeachment as either the witch hunt Trump claims it is or the righteous reaction to a rogue president that many Democrats perceive."

In other words, perceptions formed in information silos have the ability to skew and distort facts, stripping all reason and civility from arguments in a toxic, Agent Orange, fashion.

"We can get information at just the click of a button on whatever platform we want to get information on," Robison-Greene says. "Social media in particular is a challenge because it creates ideological bubbles and then the nature of the language that's being used by our friends and the groups that we follow help to structure our belief system and I think contribute to tribalism."

It also leads to sloppy thinking.

"It encourages a host of critical thinking errors," Robison-Greene says. "So instead of evaluating arguments on their merits, we are motivated by likes and loves, and those kinds of things … and not what the best arguments support."

To help make the world of social media a more productive, less hurtful, platform—one that broadens instead of diminishes perspective—Robison-Greene has five recommendations.

First, teach critical thinking skills to students at a young age. "Being able to evaluate statistics and understand how to look at research methodology … is a skill that people aren't learning, and so it's easy for misinformation to spread on the internet."

Second, celebrate social media for the free speech tool that it is, a place where all voices can be heard, where

people are given a chance to respond to well-reasoned arguments that point to conclusions worth accepting based on the most evidence—a thoroughly John Stuart Mill approach.

Third, instead of using broad, sweeping rhetoric in trying to persuade, use it more narrowly where you're looking at argumentation and what's likely to convince based on reason. "When you engage in emotional rhetoric, that's not likely to convince people who are not already inclined to agree with you. It's argumentation that's going to do that by providing premises for conclusion, and providing reasons that are compelling.

Fourth, if you find another person's position on something to be reprehensible, start with compassion. Try to understand how they may have come to their beliefs, understanding that it was likely not out of maliciousness. "If the goal is to convince them, ultimately, to come around to the other side, you're probably not going to do that if you don't understand how they got to be in the place where they are."

And finally, pick your battles. "We should try to be temperate when it comes to social media," she says. "We should practice moderation when it comes to what we engage in. Otherwise, I think we'll just turn ourselves into cesspools of rage, if we try to engage every single person with whom we disagree."

LEAVENING VIEWPOINTS

She speaks of logos, one of Aristotle's three modes for persuasion—appealing to logic and persuading through reason, fact, and figures. Digging deeper into this is **Harrison Kleiner,** USU associate vice provost and assistant professor in philosophy.

Logos can be translated in a number of ways, he says. It is the origin of dialogue, but it can also simply mean intelligibility.

"Human beings have a capacity for logos that gets exercised through argument," he says. "And by argument, I don't mean yelling. It's you having a different view than me, and you give reasons and I marshal reasons and we raise objections and respond to them and we try to come to a shared understanding."

That is the best-case scenario when two perspectives intersect. It is also where potential conflict is most likely to happen. Kleiner, who teaches a number of courses focusing on religion, has paid close academic attention to this subject because human conflict throughout history has often been tied to religiosity. "What I reject, I suppose, is this idea that when there are differing perspectives, and those perspectives are religiously informed, then it's uniquely ripe for conflict," he says. "Whether the perspective is religious or not, I think it's fanaticism and fundamentalism that move potential conflicts into real conflicts."

He blames this on the way society today tends to divorce faith from reason, to silo one off from another. "That is what leads to fanaticism and fundamentalism—of political varieties, of religious varieties, etc.," he says.

So what change of perspective is needed to keep this from happening?

"Here's maybe a good telling of a story for a university," he says. "I think you need liberal education. You need to have the religious and political impulse, the cultural impulse, whatever these commitments that people have, be they religious or not, we need to have them be leavened by logos."

The role of logos in education then is "to make sure that your viewpoint is always leavened by the recognition that a reasonable person could disagree," he says. "That, to me, is a cool thing about the university … We're really failing our students if they don't graduate from the university in a position to be citizens who can entertain a belief without holding it, without accepting it, because that is what moderates the impulse of the majority to tyrannize the minority." **A**

MORTUI VIVOS DOCENT

by Kristen Munson

"GET INVOLVED WITH SCIENCE.
BE AN ART EXHIBIT. BECOME PART OF A TREE.
SOME OPTIONS FOR YOU TO THINK ABOUT.
DEATH. IT DOESN'T HAVE TO BE BORING."

— Mary Roach, *Stiff: The Curious Lives of Human Cadavers*

THE BODY BAGS ARE HARD TO MISS.

Seven altogether. Separated into two rows and covered with disposable surgical cloths. Boxes at the head of each metal exam table store instruments for human dissection: chisels, hammers, pliers, tongs, scalpels, and tweezers. Shelves along the back wall hold dozens of skulls, some plastic, some bone. This is where 400 Utah State University students come every year to learn from some of the world's best teachers—the dead.

In the hallway, 20 Highland High School students wait for their chance to tour the anatomy laboratory in USU's Biology and Natural Resources Building. Three teen boys laugh loudly, seemingly unaware of a signature tell—a nervous jiggling of their legs. A bearded man emerges from the room wearing a white lab coat, burgundy dress shirt, and cream colored tie. Andy Anderson, director of the cadaver lab, ushers in the next round of students with a wave, a pink name tag with a skull and cross bones affixed to his chest.

"They usually come in pretty timid, but by the end they don't want to leave," he whispers.

The students perch on metal stools lining the perimeter. More foot jiggling commences. Anderson stands in the center of the room to deliver a speech he has given hundreds of times over the last 20 years.

"They are all volunteers," he says gesturing toward the tables. "All people who designated in writing prior to their deaths that they wanted to be cadavers."

Anderson's voice is a salve. Warm and soothing, but firm. Teach so others may heal.

Being young people, he continues, you might wonder, "Why would anyone in their right mind want to be a cadaver? Why have I signed up to be a cadaver after my death?" He pauses. "The most common reason people volunteer for this process is they want my students here at the university, and visiting students like yourselves, to learn on dead bodies so later on in your lives and your careers you don't make a horrific mess out of living bodies."

Humans have dissected other humans in the name of medicine since 300 BC when the ancient Greeks established the practice. Cadaver dissection remains a learning exercise at medical schools the world over. It involves handling the dead. Disassembling the dead. So that we can learn from the dead.

Anderson points to the sign over the door. "Mortui Vivos Docent. The dead teach the living," he repeats. "You will find that sign in most cadaver labs in the world."

Andy Anderson didn't exactly choose his profession. After high school he set out in a general direction—biology—found a groove in the Army as a clinical lab scientist, and followed it around life's twists and rises. In civilian life, Anderson earned his doctorate in medical microbiology and came to USU 36 years ago to lead its now defunct Clinical Laboratory Medicine Program. In 2000, Anderson inherited the cadaver lab because he was one of the few people in his department with a medical background, he says. It's been a welcome shift.

"A lot of people aren't thrilled with going to work," he says. "I like going to work."

While some people might shiver at the idea of confronting one's own mortality every day, for Anderson, it's just a passing thought. He focuses instead on what can be learned. He teaches courses in microbiology, bioethics, human dissection, and human physiology, and each one broadens his perspective.

"Most of what I see, what you see on the whiteboard," he says, "is that there is a story. And the students want to see what the story is."

The walls of the lab are a testament to Anderson's teaching. Framed letters and emails from former students titled "long lost student" and "thank you" decorate the lab. Some write from medical school, thanking Anderson for pushing them so hard as undergraduates. Others have become nurses, physical therapists, and teachers. All of the notes echo the same sentiment: "You have devoted your life and career to teaching and the world is better off for it."

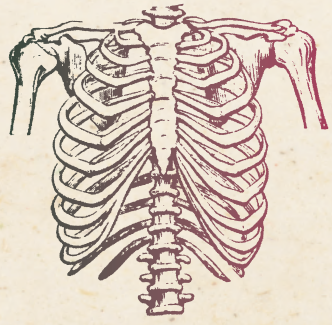
Between 1,500–1,700 high school students visit the human anatomy lab each year and most are interested in pursuing careers in medicine. Anderson shepherds them into the cadaver lab with an earnest enthusiasm. He wants them to ask questions. To feel the organs displayed. To be inspired by what they see. So that they will go into the field and improve it.

"Watching [students] get their first scalpel to open a body up … it's quite illuminating to them," he says. "And you can't do that with plastic models, you can't do it with electronic tablets. I am a very firm believer in using real cadavers."

Advances in technology may one day make labs like these obsolete. These labs can be expensive to maintain. Some medical schools have begun using mannequins and computer dissection programs rather than cadavers. But for Anderson, using human bodies to teach anatomy is sacrosanct.

So much so that he will take this belief to the grave.

"I've been here 36 years, and I plan to be here another 20, and then come back here after I am dead," Anderson says. "I figure I've been an educator in life, I will be an educator in death."



Kathleen was 35, a physician in the Salt Lake City area, and dying of metastatic breast cancer. When she arrived at USU's cadaver lab she had undergone a bilateral mastectomy and had additional tumors in her brain, lungs, and gastrointestinal tract. She chose to donate her remains to science because her body was yet another casualty of humankind's war with cancer. We win only if the medical community learns something from those who lose their lives to the disease. Kathleen's story is just one that Anderson tells students before they lift a scalpel.

FOR ANDERSON, USING HUMAN BODIES TO TEACH ANATOMY IS SACROSANCT. SO MUCH SO THAT HE WILL TAKE THIS BELIEF TO THE GRAVE.

For the aspiring medical professionals in Anderson's courses, cadavers are often the first patients to show students the effects of age and illness on the the body—inside and out. The organs the dead leave behind often tell the story of disease so that other people may live longer and, hopefully, better.

But for now, there will be many more Kathleens wheeled through this door.

Every July, new cadavers arrive from the donation program at the University of Utah and are disassembled by USU students studying human anatomy and physiology. Heads come off, arms, legs, pelvises, and skin, too. Hearts, livers, and brains are removed. After one year, Anderson explains, the cadavers are sent to Redwood Road in Salt Lake City where they are reduced to piles of bone and ash and returned to family members in a box.

"Like this one," he says passing one off to the Highland High students.

Then Anderson relays the rules of the lab. The first two are routine—no cell phones and limit chatter, but when listing the third rule, Anderson's voice hardens: do not make fun of the cadavers. Respect these patients.

"That is the way we repay our debt," he says.

As students tie on plastic aprons, one turns and worriedly whispers, "Will the cadavers bleed?"

The class is divided into three groups led by Anderson and two USU student aides, including Jodie Coleman, a medical interpreter for deaf patients at Intermountain Health on a path to becoming a nurse practitioner. She sewed the phrase "Miss Hudson took my skull" to the back of her white lab coat, an homage to Sherlock Holmes. Coleman keeps a dollar coin in her pocket in case anyone can guess the reference. No one has, yet.

She begins with a cadaver named John. He is having his central nervous system removed. It looks like a series of cords strung into the shape of a stick figure. Our brains are kind of the same consistency of Jello Jigglers, Coleman says. "It's not very often you get to hold a human brain in your hands with the

eyeballs attached is it?"

One of her dissection projects was to show the various lobes and cavities of the head. She removes a surgical cloth covering the head of a cadaver named Karla that has been cut into three sagittal sections with a wire saw.

"I'm very very grateful to Karla," Coleman says, gently handing off one section. What the students are seeing, and for some, holding, is intense. Their faces register the moment. Wide-eyed. Close-lipped. Curious. And for a few, instead of peering into the delicate spaces around the naval cavity, they lean away to see.

One table over, whatever discomfort the student apprehensive about the cadavers bleeding has vanished. "Can I touch?" she inquires about a tumorous liver.

Anderson manages to normalize an experience that doesn't quite feel normal. He gives students permission to be there. To look. To touch. He introduces his group to Joyce, a former nurse, and hands them her digestive tract. Each person holds a piece extending from her tongue and esophagus and down through the stomach and intestines.

"This is the anus," Anderson says. "We all have one."

His voice is gentle. He talks slowly, clearly, and occasionally cracks a joke to put people at ease. He presents scenarios students might face one day in an emergency room.

"What bothers me more is [living] patients," he says. "Because real patients are suffering and they are hurting. This is a good place for my students to learn things."

At the far end of the room, Coleman opens a drawer housing the medical devices and prosthetic parts classes have recovered from cadavers over the years. Metal shoulder replacements. Prosthetic hip joints. Breast implants. Every 20 to 30 minutes a small alarm goes off, the battery still works from a pump likely used to deliver pain medication to someone's spine. The patient is gone but the battery lives on.

Coleman recalls shaking with excitement when she enrolled in Human Anatomy. To her, it was the epitome of learning. She believes the experience of combing through every layer of the human body will make her a better practitioner and has given her greater appreciation for the body's biological functions than anything learned in a classroom—even Andy's, she says.

"When I actually go to deliver a baby, I understand the anatomy from the inside out," she says. "There are things that you learn by doing that you can learn in no other way. Not from a book, not from a 3D app on your phone. There is something from actually doing it that you understand and you know how the body works."

But the learning doesn't always come easy.

Students respect Anderson because of how much he knows, but they hate his tests. We started out with maybe 160 students in microbiology, Coleman says, and we have probably 40 left in the class.

"Andy is infamous, but he also is an institution," she says. "He wants us to know everything we can know about something, and that's why he is so detailed and demanding. But it helps us to grow and become better and to want to be better."

Coleman carefully puts Karla's pelvis back inside a bin of ethanol and water and closes down the lab for the day.

"We take care of these people because they really are the first people that we cut into with a scalpel, and these are the first people that we suture," she says. "They are our first patients. Like, that's my Karla, forever."

Senior Jayme Warner harbors similar feelings. She remembers wanting to be a doctor while a student at Edith Bowen Laboratory School, and like Coleman, she believes working in the cadaver lab will prepare her for the road ahead in medical school. She has given about 100 tours so far and always learns something new, she says.

But Warner also appreciates the personal nature of the experience. The cadavers all had lives before their bodies came delivered in bags to the lab. They have names. And Anderson makes sure the students know them.

"Respect their life and the gift they give to us," Warner explains. "That was someone's grandpa or brother or mom."

The names and occupations of the cadavers are posted on whiteboards above each table along with a critical piece of information: their medical history. This allows students to understand how diseases manifest and see variations in the human body. That's an experience unique to cadaver labs, Warner says. "The problem I have with computers and simulations is people are so unique and you never really know what they are going to be like on the inside. There is nothing like opening up a chest and being like 'what is that?!' It looks different in a textbook or on a computer screen than it does in a person."

Working on cadavers familiarizes students with human anatomy in an intimate way. They see nerves embedded in muscles and bones. And the exercise can provide redirection in career choices and help build their confidence. The first time Warner opened the anterior wall of a person her hand was shaking.

"I'm going to hurt someone so bad," she recalls thinking. But then she remembered why she is there. "You are not causing harm. It will be for the sake of helping, for the sake of healing."

The exercise science major is a member of the USU Cadaver Club, an organization created to prepare students to provide tours of the lab and to teach others, she says. "It gives people exposure to the human condition—and that includes death." **A**

YEAR OF THE woman

the art of science

by Kristen Munson

Illustrations
and photos
by Marissa Devey '20

Marissa Devey is a child of the suburbs. A place where sidewalks cordon off neatly trimmed grass and flowerbeds are designed to look wild. In school she learned of climate change and it seemed like an intractable problem far away. And then her junior year at Utah State University she met Jessica Murray, a Ph.D. student in ecology, at the science writing center.

Devey, a graphic design major, reviewed Murray's grant application. She considers her lack of science background an asset when working with scientists. It forces them to ditch the jargon and distill their work in a manner people can easily digest. "Jessica was telling me about her work, and I was just kind of enthralled by it," Devey says. "It felt like something more people needed to know about."

Murray's project is in the cloud forest of Monteverde, Costa Rica. A near constant mist cloaks the high-altitude rainforest with moisture and creates a rich palette of green as plant life sprouts from moss-covered trees. The Monteverde Cloud Forest Biological Reserve is famous for its wildlife, including howler monkeys and the resplendent quetzal, an emerald bird ecotourists flock to the region to see. But Murray studies a less glamorous part of the canopy: the soil.

Decaying organic matter captured in the branches above the forest floor form soil in the canopy over time. Canopy soil serves as habitat for other animals and plants and regulates the flow of nutrients and water to the ground below. It also affects the global carbon cycle. Microorganisms break down nutrients and respirate, locking carbon into the soil from the atmosphere. Murray's project studies how changes in soil decomposition from climate change affect that cycle. Because the forest is changing.

As global temperatures warm, the clouds keeping the soils and plants moist are lifting to higher elevations. Rainfall is less predictable. Extreme flooding is increasing. It's a feedback loop of change affecting the ecosystem in the trees from orchids to the quetzal. And that could mean species that have adapted to live in the cloud forest could chase the clouds to higher elevations—if they can.

"You can only go so far up the mountain before it's gone," Devey says.

She was captivated by Murray's research and suggested she create an illustrated field guide to explain the forest's health to people who may never visit it. Devey funded the project with an Undergraduate Research and Creative Opportunities (URCO) grant and as one of USU's first Caine Fellows. Last May, she followed Murray to Costa Rica and up into the trees while she collected temperature, moisture, and respiration levels of canopy soil.

"I like the idea of science and art working together ... I think we have a lot to learn about connecting with people. In science, we really value objectivity."

— Jessica Murray

"I like the idea of science and art working together," Murray says. "I think we have a lot to learn about connecting with people. In science, we really value objectivity."

Scientists are supposed to leave their passion out of their data. Scrub it of biases that lead to faulty conclusions. Artists like Devey can provide the emotion that gets sucked out of a dataset. Art can communicate urgency. And beauty. And loss.

"Artists can take concepts and make people care about them in a way that they wouldn't care about before," Devey explains. "The things that we learn from science aren't going to do us much good if we don't put the humanity back in."

Vines. Highways of green wrapping around trees in the cloud forest reminded her of the body's vascular system. Devey's project "Between Earth & Atmosphere: A Field Guide to Carbon, Climate, & Costa Rica's Cloud Forest Canopy" translates the health of the cloud forest into something most people can understand—their bodies. Anyone who has had a fever knows how sick you feel with just a two-degree difference from normal.

"Climate change is a really personal thing for all of us whether we realize it or not," Devey says. "The problem with climate change is this whole matter of scale. You hear about all these problems and then you go outside and it feels so enormous."

Walking in the cloud forest, Devey noticed how she physically responded to the place. There is no air conditioning. You sweat. The roads are bumpy. You are jostled about as you move, she explains. "Here, we protect ourselves from the elements. We are comfortable."

And she suspects that comfort may prevent us from noticing small changes. Small changes that can lead to bigger ones. Like the absence of clouds and birdsong. **A**

between earth & atmosphere —

excerpts by Marissa Devey '20

I feel like I am being swallowed as I tread on ground soft as a tongue, licked and lapped up by leaves the size of umbrellas, the air around me like a warm exhale. I clamber over fallen limbs and duck under low-hanging vines, following Jessica deeper into the cloud forest of Monteverde, Costa Rica.

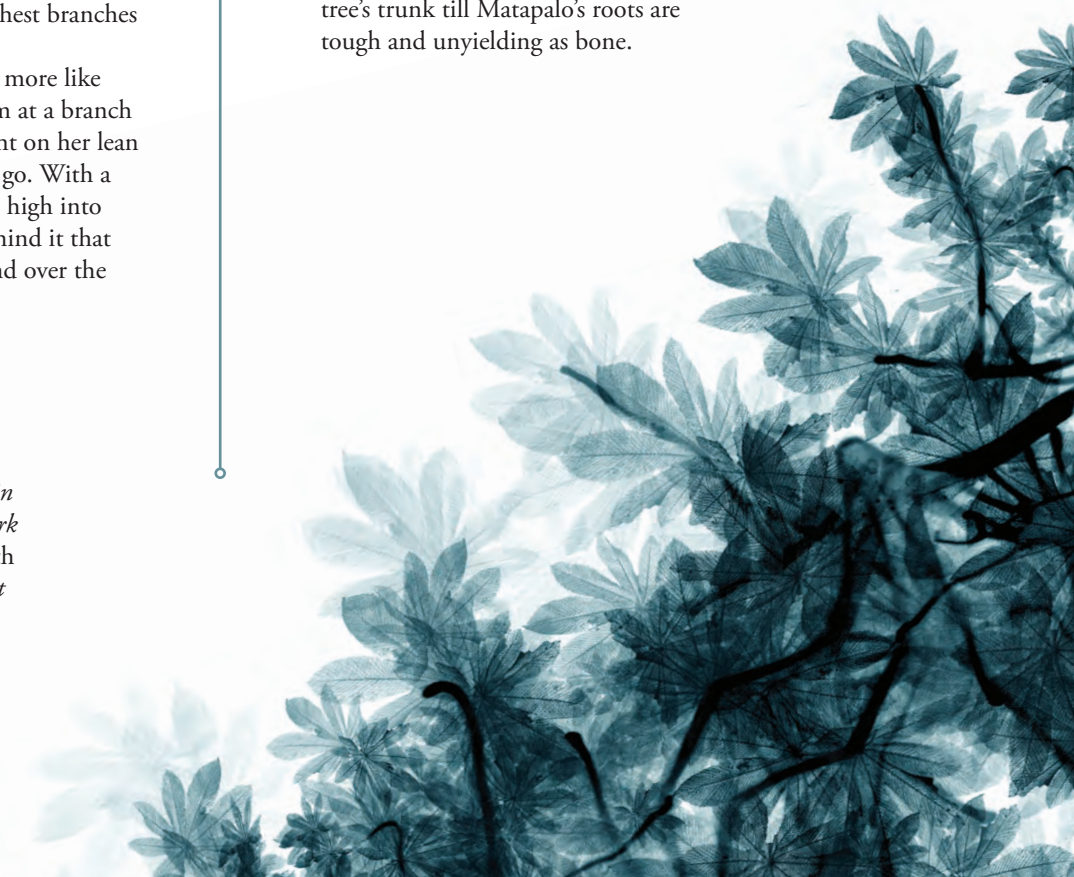
Our destination is up.

"That looks like a good one," Jessica says, pointing to a tree that the Monteverde Cloud Forest Reserve's array of researchers have named Tarantula. The tree arches high above us, limbs shaggy with ferns, orchids, and vines. The lower branches I see must be nearly 50 feet above us. The highest branches recede up into the mist.

Jessica unpacks a slingshot that looks more like an archer's longbow and takes careful aim at a branch 150 feet up, leveraging every bit of weight on her lean body to pull the slingshot tight. She lets go. With a sharp *wzzzzk!*, a small weighted bag sails high into the canopy, trailing a thin black cord behind it that we'll use to pull our climbing rope up and over the target branch.

I climb, and the climb feels like a dive into the ocean—like I've been merely looking at the water's surface, its depths obscured by ripples and shadows, and now I've taken the plunge—immersed myself in an entirely different world made of clouds and eerie, beautiful birdsong.

I climb higher, past red roots wrapping branches, trees growing on trees. Seedlings of the giant Matapalo tree sprout high in the canopy their roots creeping down the host tree like tiny bright blood vessels. Thickening into arteries, weaving muscle fibers that squeeze tight around the host tree's trunk till Matapalo's roots are tough and unyielding as bone.



Marissa Devey is a USU senior majoring in graphic design. You can see more of her work at www.deveydesign.com. Between Earth & Atmosphere *is available for purchase at the cost of printing.*

Jessica Murray in the cloud forest.

I used to picture scientists as people in long white lab coats, surrounded by sterile white-tiled spaces and holding test tubes over bunsen burners. But the scientist hanging from the tree branch beside me wears a raincoat and a climbing harness. Her gloves aren't latex; they're for gardening.

Jessica carries her laboratory in a rain bag clipped to her side, and we've just arrived at her workspace: an overgrown tree branch almost a hundred feet above the forest floor. Despite our long, soggy journey up to the treetops, we're not here to observe monkeys or survey tropical bird nests. We're here for the dirt.

Jessica pauses before the descent back down, absentmindedly brushing away a mosquito. "Do you hear that?" she asks me. A bird's song, like a long sigh, rings around the canopy. "That's a quetzal. I think there's a nest close by."

I've been hoping to catch a glimpse of the resplendent quetzal ever since I arrived in Monteverde, and I twist around eagerly on my rope, straining my eyes for a flash of crimson and emerald feathers between the trees. No such luck, but I can still hear the sighing song. We hang in the tree, waiting.

The cloud forest is never quiet. Water drips, bell birds call, and the branches overhead buzz with life. Draped in green cascades of epiphytes, these branches are home to a stunning array of creatures, some of which spend their entire lives without ever touching the ground. Many of the species that live in the canopy are so keenly adapted to this world between earth and atmosphere that they don't exist anywhere beyond Monteverde's cloud forest.

Humans rely on "specialist" relationships, too. Our skin, lungs, and gut provide habitat for an array of bacterial cells, which are estimated to outnumber our own body cells ten to one. These microorganisms influence nearly every aspect of health from digestion to brain function. What would happen if this microscopic community changed?

"I haven't done this for a while." Jessica breaks the silence. "Just hanging in the canopy, watching the trees. I usually get so caught up in what I have to get once up here, I don't take the time to look around. It's nice to just sit for a while and listen."

"Are you ready to go back down?" I ask. She smiles.

"Not yet."

I'm ok with that. We've got a long journey back down to the forest floor and a long walk with heavy packs through mud and rain back to the field station. We've got work to do. And big questions to address. But for a moment it's good to just hang in this remarkable place between the earth and atmosphere, listening to the quetzal's sigh.

Balancing Acts

By Kristen Munson

In the past, roommates were matched by hand, a painstaking effort that was time consuming and didn't always produce pairings to write home about. In 2018, Utah State University's Housing and Residence Life office put students in control. Similar to how one picks a seat on an airplane, students can peruse available beds and summaries of potential roommates before selecting their dorm room.

"It is challenging to match people," says Whitney Milligan, USU's Director of Residence Life. Now, "it's on them to do the research." The new method, she says, gives students a little more control over the process and more ownership of when things go wrong.

And over the last two decades, Milligan has seen many roommate relationships go south. Conflict tends to operate around cleaning common areas such as kitchens and bathrooms. (No one wants to do it.) Other areas where problems fester? Borrowing stuff like food or clothes and cost sharing for cleaning supplies, Milligan says. Then there's good old-fashioned personality clashes. And this is the foundation for growth.

For some students, that means residence life staff trained in conflict resolution push roommates to have difficult, but needed conversations. About dirty dishes. Chore charts. Personality conflicts. Boyfriend issues. And to do it respectfully. This is part of being a responsible adult, Milligan says. "It's hard and it's scary, but they have to learn this. It's a life skill … Conflict isn't necessarily a bad thing. Unless you don't address it."

Freshmen Justin Hodges (left) from Madison, Wisconsin, and Koy Chaston (right) from Vancouver, Washington, share a love of running. And a tiny dorm room. They are making it work the old-fashioned way: talking out their problems. All photos by John Goodman.

Growth Opportunity

The pantry of 302 Morgan Hall is stocked with the hallmarks of college living: Campbell soup cans, cartons of dried ramen noodles, protein powder. It was the mountain of dishes that was the problem. Plates congealed with last week's dinner filled the sink. Eventually, one of the six roommates would break down and spend an hour chipping them clean.

"We all knew it was an issue," says Justin Hodges. "We made a one plate rule."

"Now, if you want to eat again, you have to wash it," his roommate Koy Chaston continues. "We got together and talked and brainstormed a way out of it. I think a lot of people want to avoid conflict, but I think that makes it worse."

The two freshmen are both runners for Utah State University's track team, both studious with similar sleep habits. They describe each other with endearing phrases like "very thoughtful" and "one of the nicest people I've ever met." Chaston is a reserved minimalist, Hodges a conversationalist with a robust collection of animal T-shirts. They say their differences are in their personalities and musical tastes. (Although, Chaston is coming around to like Taylor Swift.)

"I've learned to appreciate her music," he admits.

Did the two hit the roommate jackpot or is there a special formula for sharing a room with a stranger? One key is a healthy dose of self-awareness.

"I have a unique personality and I could see how that would be annoying," Hodges says. "I tell him literally everything that happens to me." Meanwhile, Chaston has found company enhances college.

Advice:

Hodges: Being different is good. Getting to know somebody is an opportunity for growth. You can see how somebody else lives. You can see their strengths. And it's a time for self-reflection. You can see how you can be easier to live with.

Chaston: If you're meeting someone new for the first time, know that you can get along with anyone as long as you try. I think people let things annoy them. Try and communicate with your roommate and try to do it before something becomes a problem—and try to do it face-to-face.

Adventure Together

The chatter comes from all sides. Eight bodies smoosh into a small front room huddled on couches, cross-legged on the floor, standing in the doorway. Ashley Mahaffey is front and center—a place she seems comfortable presiding. "She is basically the mom of the dorm, even though I am supposed to be the mom," says Paige Nelson, the suite's resident assistant.

"I thought my roommate was going to be crazy," Maggie Sanders laughs. "I heard a lot of stories … One lady told me you are going to have a roommate that doesn't ever wear her clothes."

Katie Stringham didn't know what it was like to have a sister, let alone live with seven other girls. "I thought they were going to steal my clothes, things that you hear that sisters do."

Nelson worried the suite wouldn't like her after clashing personalities plagued her room last year. "I have a strong personality," she says. "I don't like to sugarcoat things. I'm ... here's the problem, what can we do to fix it? I was afraid my assertiveness toward that would ruin our relationships. I don't think it has. I hope it hasn't."

It hasn't. The roommates have overcome differences in bedtimes, navigated conflicts like clearing the microwave timer after use, and use Venmo to pay each other back. They have group Snapchat and Instagram accounts and make a habit of having family dinners. Some crochet together while watching movies, others bond over "stress brownies," at 2 a.m. (And sometimes all three.) With Mahaffey's prodding—anything becomes an adventure—dance parties up Logan Canyon or taking out the trash.

"I like adventures," she says. "I take it back. I love adventures. And now, I get to go on adventures multiple times throughout the day."

The roommates say patience, respect, and an open mind are keys for getting along.

"We all just teach each other what we know and what we love and it kind of helps us—Ashley calls us a family—but it helps us become that family environment that we want," Sanders says.

"Stress brownies" for when things are hard. (And honestly, for when they are easy.)

Advice:

Nelson: Get to know your roommates and understand their backgrounds so if a conflict arises you can put yourself in their shoes and realize where they are coming from. And when you address a problem, be willing to work toward a solution.

Sanders: You need to be a little bit selfless—give some of your time to understand who your roommates are and what they like and who they are as people.

Shayla Patton: I really don't think you should come to college and know your roommate. I feel you will just get so attached to that person that you won't get to know your floor. None of us knew each other before and were kind of forced to connect.

Disarming Conflict

Not all roommates will be friends. But for Clair Canfield, a senior lecturer of communication studies at Utah State University, that doesn't mean they can't live together respectfully. He believes most conflicts can be overcome—if we reframe our thinking.

Canfield studies conflict resolution. He views conflict as a tool for transformation. But he didn't always feel this way. When Canfield was an undergraduate, he struggled with his roommates over dirty dishes. They solved it the old-fashioned way—by devising a chore wheel.

"But it didn't actually fix the conflict," Canfield says. "Because it was not about the dishes. It was about respect." Unless people actively address what's at the heart of our conflicts, our problems won't get solved. "We feel like we fixed it, but now it pops up in some other way—now it's about toilet paper," he says.

Getting to the root of problems requires more than creative cardboard solutions tacked to the wall. It involves self-reflection, listening, and empathy. Because you can't change anybody else.

"I think everybody is doing the best job that they can," Canfield says. "They are doing the best that they know how."

Most people aren't raised in households where conflict management is taught effectively, he says. Conflict is either avoided or emphasized as something bad. Canfield tries to introduce USU freshmen to the idea that conflict can be an opportunity for growth during Connections courses taught during the first week of school.

But we often catch students during the "honeymoon" phase, he says. "They may not see what's coming down the road. They may not see it, but I do." Typically, by around Thanksgiving things fall apart if they haven't learned to address their problems. "I try to give them some vocabulary and ways to think about it."

Clair Canfield believes we can all do better in addressing conflicts if we shift our mindset and practice our VOCAB.

Advice:

1. Recognize what our conflict is really about. They are about our identity, our relationships, the things that matter to us. (Read: they aren't really about the dishes.)
2. Recognize when you are stuck. "A lot of people get stuck in storytelling," Canfield says. "Stories ... are the way our brains make sense of things." But what if you both have different stories about a problem? "Instead of telling a story, try to ask a question. Storytelling shuts off our understanding. It just leads us to certainty."
3. Speak responsibly. Use language that includes vulnerability, ownership, communication, acceptance, and boundaries, or VOCAB.

Being **vulnerable** can disarm the conflict. **Ownership** involves taking responsibility for your needs and words. **Communication** entails learning to ask questions and to listen to others. You aren't just waiting to talk, Canfield advises. Listen as they express how they really feel. "This can create empathy, which can create a different type of conversation." **Acceptance** means you embrace reality and let go of what you cannot control. The final part, setting **boundaries,** involves laying the foundation for acceptable behavior.

Initially, using VOCAB doesn't feel normal or natural. "But it works," Canfield says.

It's like learning a new language, he advises, so you must practice. Once you have the skills to work through conflict, perhaps then it will become something less scary and uncomfortable for people to address.

"I want to believe that there is more possible," Canfield says.

He has hope. He once barricaded his toddler in the bathroom with a mattress because she refused to pick up a hair tie she dropped. Even conflict mediators can improve. And with practice, we all can. **A**

View Clair Canfield's 2016 TEDx talk "The Beauty of Conflict." www.youtube.com/watch?v=55n9pH_A0O8

FOR A BEAR'S (AND YOUR) SAKE

BY JOHN DEVILBISS

BEARS JUST WANT TO BE BEARS. BUT HUMANS—BEING HUMANS—SOMETIMES COMPLICATE THINGS, TO THEIR PERIL.

Since 2011, three people have died from grizzly bear attacks in Yellowstone National Park—three out of the eight total bear-related deaths in the park's 147-year history. What is behind this 60 percent increase? More people, more bears, and more chances of human-bear encounters. In 2016, the park tallied a record 4,257,178 visitors—a 195 percent increase from 1960. At the same time, the grizzly population has climbed from 136 in 1975 to at least 700 by 2016.

Park officials have taken steps to minimize potential wildlife conflicts through regulation and education. However, despite how intuitive park warnings appear to be, getting people to heed them has been complicated. Zach Miller, Utah State University assistant professor of recreation resource management, is working with Yellowstone on an education program to minimize human-wildlife conflicts, particularly among day hikers, since all the fatalities from bear attacks in the park to date have involved only day hikers. And while bear spray is 92 percent effective in thwarting bear attacks, many park visitors fail to hike with it.

The bear awareness campaigns used today in Yellowstone are based on the theory of planned behavior that target subjective norms. Human behavior is driven by three major factors: attitudes, subjective norms, and perceived behavioral control, Miller says. For example, what's your attitude about carrying bear spray? Are you doing it because somebody is making you? And what other factors, such as cost and availability, might be influencing you?

"If we are able to promote positive attitudes and positive subjective norms for influencing these things through communication, we are likely going to be able to influence people's behavior as well," Miller says. For example, data Miller collected show that people who hike in Yellowstone genuinely care about the welfare of bears. As a result, one message he developed: Carry bear spray not only for your safety, but for the bear's sake, too, is a sensible message that sticks. "Because every time a bear kills someone, that bear is also killed, and it usually has cubs." A

ONE MESSAGE ZACH MILLER DEVELOPED: CARRY BEAR SPRAY NOT ONLY FOR YOUR SAFETY, BUT FOR THE BEAR'S SAKE, TOO.

STEP #1

THEORY OF PLANNED BEHAVIOR

Human behavior is triggered by three major factors: **1. ATTITUDE:** a good or bad perception about performing a behavior. **2. SUBJECTIVE NORM:** peer pressure from important normative groups that help influence behavior. **3. PERCEIVED BEHAVIORAL CONTROL:** When people believe they're actually able to engage in behavior, whether real or not.

STEP #2

PREDICT PEOPLE'S BEHAVIOR

Combine all three components of the theory in **STEP 1**, emphasizing positive attitudes and subjective norms. Then identify leverage points to strategically communicate attitudes and norms likely to influence behavior. **SAMPLE BEHAVIOR:** Favorable attitudes towards bear spray (it will keep your family safe while hiking) versus negative attitudes (bear spray is a burden to carry) influences behavior.

STEP #4

IMPLEMENT STRATEGIC COMMUNICATION

Implement a strategic communication framework based on these beliefs attached to the norms. **SAMPLE FRAMEWORK:** create illustration of parents carrying bear spray on their hips while hiking with their children with the message: "The most important reason to carry bear spray is your family."

STEP #3

IDENTIFY SALIENT BELIEFS

Connect beliefs to those leverage points—such as attitudes and subjective norms—in order to understand how to develop specific messages that either promote or counter the beliefs of people in order to encourage them to carry bear spray. **SAMPLE BELIEF:** people say they carry bear spray to protect family.

Illustration by Rawpixel and Elizabeth Lord '04.

The Price of Personality

by John DeVilbiss

The stock market is no more predictable than the world around us. Its volatility is no more apparent than in moments of crisis—from pandemics to trade wars. Something as simple as a president's tweet can send it soaring or plunging. Events and people matter on Wall Street, including CEOs of major firms, says Gary Thurgood, Utah State University assistant professor in the management department of the Jon M. Huntsman School of Business.

Thurgood and three colleagues have demonstrated how CEOs appear to influence stock market confidence in their firms based on five specific personality traits—conscientiousness, neuroticism, extroversion, agreeableness, and openness. Qualities one can expect to find in all leaders, regardless of stock exchanges, who influence the value of their institutions, he says.

Even university presidents. How, for example, are public perceptions of USU President Noelle Cockett influencing donor contributions and student enrollment? Thurgood flashes a smile, "Well," he says, diplomatically, "I've not been here that long." Even so, he was willing to indulge the question long enough to offer a few initial impressions of the school's 16th president.

But first, the study, published in the *Academy of Management Journal*, involved nearly 3,000 CEOs of S&P 1500 firms between the years 1993 and 2015. In their report, they say there are two ways in which a person's traits as a CEO can affect things. One is directly, when making decisions and taking actions that lead to greater or lesser stock risk. But there are other factors at play, almost on a subconscious level, by analysts and investors—those who are carefully watching the Tim Cooks of the corporate world, just as they did last fall when WeWork's value plunged more than 80 percent under its now disesteemed cofounder and CEO, Adam Neumann. Without even knowing the Five Factor Personality model, investors seem to naturally gravitate to them when assessing CEOs—something that Thurgood and colleagues can statistically test for. So even in cases when a company may look promising by the numbers, investors sometimes see something else in a CEO, and think, "'I don't know. This person is kind of crazy half of the time, so I'm going to give myself a little wiggle room,'" Thurgood says.

Of the five main traits, conscientiousness, neuroticism, and extroversion were of particular interest to them. Of these three, conscientiousness was a real standout in terms of desirability among investors and analysts. This is the trait that most consistently influences stock risk perception and shareholder returns, he says.

"It is the one trait that we have found over the years to be highly desirable because it really does describe a person who is dependable and predictable," he says. "They have that natural sense of, 'I can't let people down; I'm committed to this; I have to deliver.' And people who are more conscientious are more effective at setting goals and keeping commitments and doing all those things that define habits of success.'"

One that can hurt returns is neuroticism—the opposite end of emotional stability. "That is generally a negative attribute, though surprisingly a lot of people who are fairly neurotic are still successful," Thurgood says. "They still rise to position, but have things to overcome."

A third one is extroversion—a double-edged quality. "While this trait doesn't hurt you getting in the door, we have

shown that there might be some negative effects because people who are more extroverted also tend to be more socially dominant—the loudest talkers who grab all the attention."

Extroverted people in leadership roles tend to act in ways that garner the most public attention, such as making huge strategic acquisitions more for the media coverage than the betterment of the company. "A highly extroverted person is risky," Thurgood says. "I would say the best leader is probably somewhere in the middle—not super extroverted but probably not super introverted either." Related to this is narcissism, a more narrowly defined trait somewhat related to extroversion.

"We learn that people who are narcissistic do tend to rise to the top a lot, and they leave a lot of damage in their wake—personal, relationship, and institutional damage," he says. "They are always right, never wrong. Leaders like this tend to not listen to others—even high-level advisors and others in their circle." As a result, a company stock with a CEO like this would be more volatile and risky. "They'd get stuff done, and they kind of get some wins, but at the same time, have some bigger losses too."

Of course, these same qualities can also inform and broaden understanding beyond a company's stock value. The more that people understand the fundamental traits of those with whom they encounter, the better they are able to interact with them. A person who is not super conscientious, for example, might always be late in turning things in. That same person, however, may have many more other positive qualities. A boss who understands these qualities, good and bad, can work to help emphasize strengths and minimize weaknesses. An employee can use them to help understand and better respond to a boss showing these characteristics. Parents might recognize them in their children to help them better respond to their issues. Even faculty members dealing with a university president.

Thurgood says he has not seen Cockett in the news a lot over her nearly four years as president, which suggests to him that she is probably more on the introverted side than on the extroverted or narcissistic end of the spectrum. "So I'd guess she doesn't need attention that way and being in the limelight." He also surmises that she is fairly agreeable and personable—being able to get along with people and not being confrontational and argumentative.

If one can attach a price to such a personality, that smile that comes so easily to her, just may be a million dollar one. **A**

5 Personality Traits of CEOs:

Conscientiousness

This is the most ideal trait for a leader to possess. These individuals demonstrate effective goal setting and keeping commitments.

Neuroticism

On the opposite end of emotional stability is neuroticism, a trait typically harmful to effective leadership.

Extroversion

This trait has a double-edged quality. It gets leaders in the door, but it also means they can be overdominant and risky.

Agreeableness

This trait requires a delicate balance, for too much might mean lack of assertiveness, while too little, obstinate and quarrelsome.

Openness

A cousin of agreeableness is openness. The ability to listen and take in new ideas and suggestions is a highly favorable leadership trait.

Icons by Elizabeth Lord '04.

Wonders of **Collaboration**

by John DeVilbiss

"Wondrous Hairy Disease" took the life of a 17th century woman in what must have been an agonizing death. A 400-year-old autopsy report describes that she suffered from a hairy tumor that took eight years from its onset before it killed her. The tumor caused her abdomen to extend by about a foot, and made breathing difficult because of the way it pressed on her diaphragm. Whether the tumor was malignant or benign was inconsequential because cutting it out was not an option. Anesthetics had not been developed.

Photo courtesy of William Lensch.

Kristen Brady holds a medieval medical text as illuminating today as it was 400 years ago.

She was a woman who leaped off the page for Mark Damen, Utah State University professor of history and classics, when his former Latin student, William Lensch, '91, asked for his help in translating the medieval medical text detailing her cancer. Lensch, now strategic advisor to the dean in the Harvard Medical School, believed he had come across the first documented case of a reproductive system teratoma in Harvard's medical archive. His Latin, however, was rusty. Damen enlisted help from another former student, Chuck Oughton, '08, to translate the 15,000-word report which Lensch used for his research on teratomas and cited the text in a published report.

Meanwhile, the rare translation sat on Damen's desk for another 10 years whose whisperings he could not entirely shut out. He knew the text lacked historical perspective. He also knew that a recently recruited grad student in history, Kristen Brady, was interested in historical medicine. Would she be willing to take it on as an interdisciplinary project?

"Oh yeah!," she told him. "This is actually the kind of work I really want to be doing."

That is because shortly after Brady arrived in 2018 to study social history, she experienced some personal health issues that caused her to pore through medical journals, teaching herself how to read them. "I actually really started to enjoy it," she says. Brady came across a few history of medicine articles that weren't "very good history, to be honest," she says, "but those articles still meant something to me as a patient."

She realized that historians of medicine have access to a large demographic because everyone is, in a sense, a patient. "There's this entire audience that is kind of being untapped because we, as historians, are really focused on creating an historical narrative specifically for other historians," she says. "As soon as I started uncovering this narrative, I was kind of like, okay, this is how I make history useful."

For her, the autopsy report of this 17th century woman demonstrated how an important story emerged from a single find because one person cared enough to share and consult with others about it. That case has taken on more relevant meaning, not only because it better informs scholars today about diseases and medical procedures in early modern

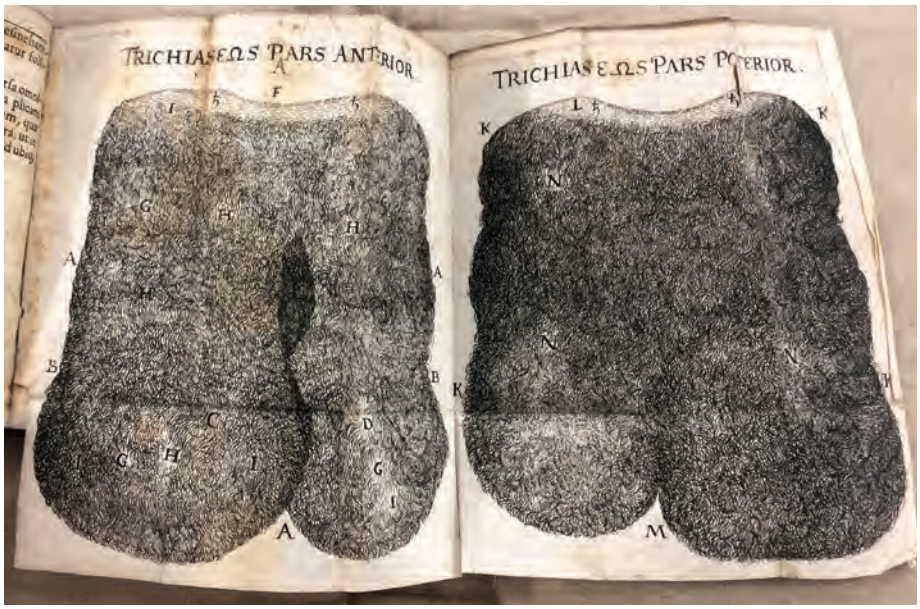


Photo courtesy of William Lensch and the Center for the History of Medicine at the Countway Medical Library, Harvard Medical School.

Illustrations of a hairy tumor, a germ cell tumor that took the life of a 17th century woman, the first documented case of a reproductive system teratoma. The one-of-a-kind text was translated at USU.

> "There's this entire audience that is kind of being untapped because we, as historians, are really focused on creating an historical narrative specifically for other historians. As soon as I started uncovering this narrative, I was kind of like, okay, this is how I make history useful."
>
> **— Kristen Brady**

times, but also establishes a meaningful diagnostic benchmark for today's researchers.

Brady found, for example, a dichotomy she hopes to use to emphasize cancer research for ovarian cancers and reproductive system cancers. After scouring the libraries of Harvard and Cambridge, this germ cell teratoma from the 17th century was the only case she found. And yet simultaneously she found a myriad of cases documenting breast cancer in historical texts, but not on related reproductive system cancers. "And what really struck me is how that actually connects to the kind of epidemiological trends that we see in medicine today," she says.

With earlier screening and detection for breast cancer and discovery of the BRCA gene mutation, mortality rates have dropped some 39 percent over the past 20 years. Yet even so, far too many people don't realize that the breast cancer gene mutation also points to an increased risk for ovarian cancers, she says.

"Most people don't know that or talk about it, despite the clear correlation," she says. "And so my question is, why did that lead to so much care for breast cancer but not ovarian cancer? The fact that we are still seeing that dichotomy over 400 years is kind of alarming."

Questions like these are important to Brady, but you cannot ask the right questions if you do not have the expertise of medical historians, classicists, researchers, and physicians working together to identify diseases from the past to see how they compare today. "Are we making progress toward diagnosing and treating them?" she asks. "If not, what does that tell us?"

Surprisingly, the notion of working in such an interdisciplinary fashion is still fairly novel among historians because of the methodology it involves. The idea of retro-diagnosis without biological evidence is concerning to some historians. Brady believes, however, that it creates a chronology of medicine. "It re-associates medicine with its pre-germ theory days and that's really important because that affects how we interact with patients and study things," she says. "'Wondrous Hairy Disease' is what they called this in the 17th century, but that does not mean it's not associated with the germ cell tumors we know today."

The early-modern autopsy was so detailed that it is nearly impossible to conclude it is not an ovarian germ cell tumor. Because these tumors are stem cell based, they can grow any tissue on the human body—hair, teeth, bones, sometimes an entire finger or ear, Brady says. "It's very strange. And so when you see one, it's kind of like we don't really need serological proof because it's so physical ... Because it is such a clear-cut case for us, we can actually use it as a starting point for this conversation."

The ability to contextualize such conversations motivates Brady to want to eventually teach the history of medicine at medical schools. "When we start to get history scholars collaborating with practitioners and scientists, then we are helping them to think critically and analytically and historically in ways that helps them to interact with patients," she says.

History that spawns new ideas and can shape the course of medical history. The kind of history Brady likes. The kind that is useful—not only for identifying diseases from 400 years ago, but to find cures for them. And how wondrous would that be? **A**

DO YOUR *Health* A FAVOR

by Julene Reese '85

Photo courtesy of Julene Reese '85.

What's holding back your health?

Too often, the best intentions to eat a healthy diet and become physically active are overshadowed by busy schedules, lack of motivation, and competing priorities. A healthy lifestyle is associated with many long- and short-term benefits, including reduced risk of obesity, Type 2 diabetes, heart disease, certain cancers, improved cognitive function, mood, and weight maintenance; however, obtaining and maintaining a healthy lifestyle can be a challenge.

Utah State University Extension's Create Better Health Utah (SNAP–Ed) program, formerly known as Food $ense, aims to help Utahns make better health a reality, regardless of location, budget, or time constraints. The program name was recently changed to more accurately reflect that its scope is broader than just food, says Casey Coombs, '13, MS '18, assistant director for Create Better Health. The program provides a variety of resources and classes on nutrition, budgeting, cooking, food safety, and physical activity.

"The purpose of the program is to teach youth and adults these skills in the locations where they eat, live, learn, work, and shop," she says. "Our goal is to increase their knowledge of an overall healthy lifestyle, and USU Extension is in a perfect position to do that. Since we are a statewide program with offices that serve every county in Utah, we are able to reach all corners of the state."

Hiram Wigant, a Create Better Health ambassador for Cache County, loves to see people make choices that bring them to a healthier lifestyle. He teaches nutrition education classes that encourage healthy shopping, cooking, and eating habits. "You can spend 10 minutes every night agonizing about what to eat, or you can spend 30 minutes a week planning it all out," Wigant says. "Why not save yourself around 40 minutes a week, not to mention the unnecessary stress? Of course, starting anything new will take a little more time, but once you get the hang of it, it becomes a speedy and even enjoyable process."

Healthy Hacks from Wigant:

Meal Planning

1. SET UP. Get a pen, a piece of paper, grocery advertisements, your phone, and a cookbook.
2. TAKE STOCK. Check the refrigerator and pantry for any foods that need to be used and incorporate them in earlier meals so they don't spoil and you don't waste money.
3. FILL IN THE BLANKS. Use the grocery ads to find sale items you like. If you need to, refer to your cookbook or online resources for recipes. Write the ingredients you need to buy on your shopping list.
4. REVIEW. Try to incorporate the five food groups, including dairy, fruit, grains, protein, and vegetables. Add a healthy snack or side if you don't have enough of one food group, like a bowl of fruit with breakfast or a vegetable side with dinner.
5. POST THE MENU. Put your menu and shopping list on the fridge where you can see them regularly. Add to the list as you think of things you need.
6. TAKE A PICTURE. This ensures you don't forget your list when you're in the store. It also allows you to review past menu plans and save favorite recipes for faster planning in the future. If you use online recipes, take a screenshot.
7. USE FEEDBACK. If you use a cookbook, leave color-coded sticky notes or write directly in it, leaving a rating and any notes about the recipe.

Food Substitutions

SIMPLE SWAP. When buying canned goods, if you see a "no salt added," "low sodium," or "in water" option, buy that over the higher sodium, "in oil," or "in syrup" options. (When you use items, rinse and drain products to eliminate excess sodium or sugar.)

REPLACE BAKING OILS. Use an equal amount of pureed pinto or white beans for about 1/10 of the calories. Alternatively, ¼ cup of oil can be replaced by ½ cup applesauce or ½ cup mashed banana. These alternatives also help make the finished product moister."

Grocery Shopping Tips

EAT BEFORE YOU SHOP. You are less likely to buy as much on a full stomach. Make a budget. Estimate how much it will cost to purchase the items on your list. Keep a tally of actual costs as you shop.

BRING YOUR LIST AND STICK TO IT. Trust that you put enough on the list for the week when you did your planning, and stay true to it so you don't go over budget.

SHOP DURING SLOW TIMES. When you shop around 5 p.m. or near major holidays, stores are busy and you're less likely to take time to compare prices, quantities, and nutrition facts. Go when you have time and aren't in a rush.

STICK TO THE EDGES OF THE STORE. Generally speaking, fresher foods are located on the edges of the store, and processed foods are kept in the middle.

COMPARE BRANDS. When you find what you're looking for, compare brands and sizes for the unit price or price per ounce and nutrition facts.

BE FLEXIBLE. Have a plan, but if something similar is cheaper, consider trying that option. If you like honey crisp apples, but gala apples are cheaper, try the gala. Variety is the spice of life!

BECOME A STORE LOYALTY OR REWARDS MEMBER. These generally require only a name, phone number, or address and often provide extra deals that don't cost you anything.

BE CAREFUL WITH COUPONS. If the coupon requires you to buy more items than you need, it might not be worth it so compare it against the off-brand price.

BUY IN BULK WHEN APPROPRIATE. For non-perishable items you often use, it may be cheaper to buy larger amounts when they are on sale. These items might include canned foods, baking goods, and some condiments. **A**

YEAR OF THE woman

Fighting Sisters of the First World War

by Tammy M. Proctor

"Are you Doing Your Share?" the *Logan Republican* newspaper asked women, following that call with an article in May 1918 celebrating the "Fighting Sisters of Fighting Men."

Through calls such as these, women joined the First World War effort—in war relief, entertainment, heavy industry, medical services, and offices. Most of these women saw themselves as patriots and citizens who were "doing their part" to end the war. They were also modeling themselves on the example set by women in other parts of the world who participated actively in the war—out of patriotism, civic duty, coercion, and a sense of adventure. As African American women volunteers, Addie Hunton and Kathryn Johnson, described their sense of service and responsibility: "It was our privilege ... we can conscientiously say that we had the greatest opportunity for service that we have ever known." Hunton and Johnson, who served in France by operating a canteen, were only two among the thousands of American women who served in the Great War, both at home and abroad.

Women crimp the tops onto fiber powder containers for a 3-inch Stokes mortar, at the W.C. Ritchie & Co. facility in Chicago, Illinois, during World War I. The photograph was taken by the U.S. Army Signal Corps between 1914 and 1918. Photo courtesy of U.S. Library of Congress.

In the United States, women formed the front line of food and resource conservation, volunteered for the Red Cross and other war relief organizations, and worked in war-related capacities. Girl Scouts raised victory gardens and sold war bonds, women's clubs knitted socks and put together care packages, and women even joined pen pal schemes to write to soldiers abroad. Many women took paid work in munitions, transport, and other heavy industry during the war. Women also found themselves in battle against disease as influenza devastated communities across America in 1918–1919.

Influenza was not the only medical area where women answered the call. They trained as nurses, aides, and drivers for units such as the American Women's Hospital services. Roughly 10,000 women served overseas in this organization during and immediately after the war. One interesting area where women were recruited for service was in the emerging job known as a "Reconstruction Aide." This was a program where women learned to care for soldiers recuperating from war injuries. The RAs specialized in massage, physical therapy, occupational therapy, and speech therapy. These women used handicrafts to help men heal, so they taught weaving, woodworking, carving, and sewing to help men relearn their motor skills.

Many northern Utah women performed pioneering work in war hospitals overseas, including Anna J. Hall from Ogden's Dee Hospital, and Rose Karous, who ran Utah's Red Cross Nursing Service before she joined the Navy Nurse Corps. Other significant Utah nursing leaders included Anna Rosenkilde, later superintendent of Primary Children's Hospital and Agnes M. Hogan, a founder of the Utah State Nurses Association. Logan resident, Rachel E. Meyrick, traveled to France as a nurse. After the war, she served as health supervisor in Logan alongside Edith M. Bowen, a famous Cache Valley educator.

For women without medical training, another possibility to serve was in canteens that were established for American soldiers behind the fronts. These canteens were sponsored and built by voluntary organizations hoping to provide wholesome recreation for the men. Female entertainers made the circuit of these recreation huts, performing popular songs, dancing with soldiers, and doing theatrical pieces. In addition, organizations recruited all-American girls to serve food, play board games, maintain libraries, write letters, and otherwise distract the soldiers in "good" ways. The most popular of these organizations was the YMCA, which sponsored facilities for U.S. soldiers; nearly 6,000 women served in the canteen industry. One of the most visible ways that women participated during the war overseas was as auxiliaries in the American Expeditionary Force (AEF). This was paid work, so it attracted women interested in serving, but without the means to fund voluntary war service. Women wore uniforms that complemented soldier's garb, but that retained a "feminine" look. Many of the women worked as drivers and cooks, but they also did clerical work and other necessary tasks. Some came with considerable experience in dietetics or nutrition, while others had served welfare organizations in the United States prior to the war. A specialized group that emerged from the needs of the Army in 1918 was the "Hello Girls," who trained as telephone operators for the Army Signal Corps. Thousands applied for these positions, and several hundred completed the necessary training and served overseas in this capacity. Women worked in U.S. air corps and in naval battalions as well.

In short, World War I marked the first major mobilization of American women in Europe in U.S. history. More than 16,000 women served as part of the American Expeditionary Force in sex-segregated environments in non-combat roles. Thousands of women worked stateside in the armed services in order to free up men for war. Hundreds more traveled to France to work for other organizations related to the war, for newspapers, for relief societies, or as office staff for wartime agencies.

If the First World War was a coming of age moment for the United States and its male citizens, it served a similar role for many American women. What the First World War did for women is hard to put into concrete terms. Certainly, the war provided new opportunities for women to serve the nation, and the creation of female veterans' organizations speak to this function. The war also helped legitimize the women's suffrage legislation going through the ratification process, as men vocally supported the important part women had taken in the war. While the 50-year campaign for women's suffrage had more to do with the extension of the vote to women in August 1920, women's war efforts served as proof that they deserved recognition as equal citizens. Women's vote on equal terms with men helped validate their claim to citizenship in the nation.

Top to bottom: Three members of the Women's Radio Corps stand in front of an Army car. Photo taken February 12, 1919. Women inspect Colt .45 automatic pistol parts at Colt's Patent Firearms Plant in Hartford, Connecticut, sometime between 1914 and 1918. Photos courtesy of U.S. Library of Congress.

Finally, the war established a precedent—a test, if you will—of women's capacity to serve overseas. Their success in World War I meant that a new generation of women would be called to work for the wartime nation in even larger numbers in the Second World War. **A**

Tammy M. Proctor is Distinguished Professor of History at USU and chair of the department. She is the author of World War I: A Short History *and* An English Governess in the Great War: The Secret Brussels Diary of Mary Thorp*, and several other books. Her website is:* tammymproctor.com.

IN MEMORIAM // *Through March 11, 2020*

Utah State Magazine • mageditor@usu.edu
1590 Old Main Hill, Logan, UT, 84322–1590

1930s
Ruth K. Robinson '38, '69, Feb. 12, UT

1940s
Kathryn K. Andrews-Bird (Kirkham) '43, Dec. 17, UT
Bonnie Rae Bigler (Gardner) '49, Dec. 13, UT
Ella H. Brothers '48, Mar. 1, UT
Vickie Mae Caldwell (Bigler) '48, Dec. 25, CA
Jay T. Cox '48, '50, Feb. 11, ID
Maurine Guymon (Burnham) '42, Feb. 16, UT
Charles R. Horrocks '48, Nov. 29, ID
Joy N. Hulme (Nelson) '44, Dec. 21, CA

1950s
Philip Dawson Affleck '53, Feb. 21, ID
Carolyn T. Aldous (Tate) '57, Jan. 27, UT
LaDell Andersen '51, Dec. 29, UT
Elliot Julius Arnoldson '54, '62MS, Jan. 9, UT
Frank D. Bagley '56, Jan. 11, UT
Dean P. Barton '53, '58MS, Feb. 22, UT
Gordon O. Bigler '50, Jan. 25, UT
Robert J. Bingham '59, Jan. 3, UT
Eugene D. Browning '58, '65MED, Mar. 8, UT
Joseph Orson Calder '58, Dec. 16, UT
Mayo White Call '54, Mar. 2, UT
Vosco Call '51, Dec. 24, UT
Del Ray Campbell '54, Nov. 29, UT
Sidney Karen Carpenter (West) '59, Nov. 25, UT
Bernard E. Christensen '58, Mar. 3, AZ
Dolma J. Christensen (Nelson) '50, Jan. 17, WA
Ramona R. Crane (Ranzenberger) '50, Dec. 15, UT
Kenneth B. Creer '52MS, Dec. 4, UT
Deon Criddle '56, Jan. 11, UT
William Jay Dalley '58, '70MS, Jan. 4, UT
Ralph E. Dearden '57, Jan. 29, UT
Sheldon L. Dickinson '56, '58MS, Dec. 11, CA
Jack K. Fronk '57, Dec. 13, UT
Rebecca Funk (Chambers) '51, Feb. 16, UT
Blaine B. Godfrey '51, '64MED, Mar. 4, UT
Dale Gray '50, Jan. 28, UT
Thomas I. Gunn '53MS, Nov. 28, UT
Reed W. Hadfield '52, Jan. 7, UT
Ronald S. Hanson '55, Nov. 21, UT
Nena R. Hawkes '54, Jan. 4, UT
Stevens E. Heiner '52, Dec. 7, ID
Ruth M. Hersh '59, Dec. 31, UT
Edward M. Higbee '54, Feb. 14, UT
Alden E. Hill '50, Dec. 31, ID
Bethel S. Holman '55, Mar. 7, UT
Harold Alton Hovey '50, Feb. 12, UT
Theron R. Hunter '58, Jan. 24, UT
Marcus M. Jensen '52, '54MS, Nov. 23, UT
Randall William Jensen '59, '61MS, '70PHD, Feb. 17, UT
Reea Kidman (Petersen) '52, Feb. 3, UT
Lujean Leake '53, Nov. 22, UT
Clisbee Lyman '52, '57MS, Dec. 4, UT
Karen M. Madsen (Larsen) '59, Jan. 25, UT
Ronald J. Marx '58, '65MIE, Jan. 17, UT
Jenna L. McKinney '54, Dec. 10, UT
Duane P. Memmott '59, Dec. 10, MA
Shirleen S. Newell '57, Nov. 28, UT
Robert A. Nielson '52, Nov. 28, UT
R. Dean Plowman '53, Feb. 6, UT
Captain Cleve A. Rice '59, Dec. 23, ID
Donald Wayne Rose '52, Mar. 4, UT
Leo N. Taylor '52, Mar. 10, UT
Kay Paull Thain '59, Feb. 8, UT
Jared Lillard Tucker '59, Jan. 5, UT
Lew A. Wangsgard '58, Jan. 11, UT
William O. Warenski '52, Jan. 30, UT
Gene P. Weckler '58, Dec. 3, UT
Darold I. Whatcott '53, Mar. 4, UT
Doran F. Wilkes '51, '55MS, Dec. 28, UT
Deloy G. Wilson '53, Jan. 23, UT
Sam R. Worley '51, Dec. 10, UT
Betty L. Zilles (Yonk) '53, Feb. 11, UT

1960s
W. Alan Bahr '66, Jan. 9, UT
Peter Doyle Bates '67, Dec. 3, ID
Leroy P. Coleman '69, Dec. 29, UT
Maurine Waterman Craig (Waterman) '67, Dec. 12, UT
Janet Colleen Dinsdale (Greenwe) '69, Jan. 19, UT
LeGrande Fletcher '63, Dec. 15, UT
Kay La Vaune Gneiting '68, Jan. 21, UT
Darwin C. Hansen '62, Jan. 6, UT
Harris W. Hansen '65, Mar. 6, ID
James D. Hansen '65, Nov. 30, ID
Garry Hardy '62, Nov. 24, UT
Lyle S. Heinz '64, Jan. 17, UT
Ron J. Hellstern '68, '84MS, Jan. 3, UT
Paul H. Hoth '67, '70MS, Jan. 26, UT
Robert Jack Huddleston '65, Nov. 28, CA
Eric H. Isakson '69, Dec. 24, UT
David D. Kemp '60, Dec. 29, CA
Mark M. Klotovich '60, Dec. 13, UT
Madeline F. Layton '62, Feb. 21, UT
Ofa Dunn Lillywhite '63, Nov. 22, UT
Myrna Freer Mayes '66, Feb. 25, UT
Richard Medsker '67, Jan. 11, UT
Jay B. Merrill '69, Dec. 20, UT
Robert W. Mitchell '69, Jan. 15, UT
Richard L. Nelson '64, Nov. 25, UT
Verl W. Newbold '60, '65MS, Jan. 6, UT
Gerald W. Nyborg '61, Feb. 14, ID
Lynn Gordon Potts '69, Feb. 8, UT
Dean Prisbrey '65, Nov. 21, UT
Sherry Olson Reese (Olson) '65, Dec. 7, UT
Larry W. Rowley '68, Feb. 19, UT
Larry H. Sayer '62, Jan. 6, UT
Dolores M. Schwin '61, Dec. 8, UT
Vernal C. Sessions '60, '62MBA, Jan. 1, AZ
Doyle Ned Shelley '64, Feb. 21, UT
Bruce P. Slater '66, Jan. 1, AL
Thomas F. Slater '62, Dec. 15, UT
Rex L. Smith '63, Jan. 5, FL
Arnold LaMar Stoker '64, Dec. 22, NV
Meldon L. Talbot '61, Jan. 8, CO
Glen Clayson Tanner '64, Mar. 9, UT
Jeff R. Thorne '69, Mar. 3, UT
Eugene Lloyd Tidlund '61, Feb. 11, UT
Rodgers W. Todd '68, Dec. 31, NC
Sharol Ann Wall (Wahlern) '62, Feb. 12, UT
Helen L. Watts '61, Jan. 28, UT
Walter Eugene White '66, '73MS, Jan. 19, ID
Preston Mark Whitesides '69MED, '95MS, Feb. 25, UT
Gordon Vern Zollinger '61, Dec. 13, ID

1970s
Earl V. Allred '71MED, Dec. 7, UT
Kirk Anderson '75, Nov. 30, ID
Mark K. Anderson '77, Feb. 3, UT
Linda M. Backstrom '76, Mar. 4, UT
Afton Brighton (Bingham) '70, Nov. 22, UT
George S. Cook '71, Feb. 27, UT
Dan William Durman '73, Nov. 30, ID
Diane Leslie Fouts '76, Jan. 25, UT
Fred W. Green '71, '75MS, Feb. 17, UT
Eldon Bryant Hooper '73, Jan. 15, UT
Sharon M. Ishikawa '78, Feb. 4, HI
Harriet Johnson (Westenskow) '71, Feb. 24, WY
Lou W. Johnson '77MBA, Feb. 24, IN
Michael K. Keller '73, Feb. 12, MD
F. Dean Madsen, Jr. '70EDD, Nov. 24, UT
Kim A. Marshall '73, Feb. 13, UT
Curtis Allan Mueller '78, Dec. 13, ME
Sherry Newberry (DOWNS) '71, Dec. 13, UT
Diane L. Olsen (Lowe) '70, Dec. 24, UT
Richard L. Olsen '75, Dec. 31, MO
Vickie Olson '78, Nov. 27, UT
Lori T. Robinson (Peterson) '76, '79MS, Nov. 22, UT
Jeanette O. Schwab '74, Dec. 9, UT
Helen S. Shiozawa (Shiratori) '72MED, Jan. 26, CA
Clifford L. Wells '73, Nov. 26, WA
James Howard Williams '73, Dec. 12, ID

1980s
Charles W. Ariss '88ME, Dec. 15, MT
Glen M. Bowen '86, Feb. 23, UT
Lewis R. Boynton '81MBA, Jan. 30, UT
Letty M. Burt '86, Jan. 27, UT
Kirt L. Christensen '88, Feb. 2, UT
Bruce Davis '80MBA, Dec. 8, UT
Boyd J. Earl '81MED, Jan. 23, UT
Janice Green (Nielsen) '81, Jan. 2, UT
Nikki K. Hayward '88, Jan. 6, UT
Karen Harder Iverson '81, Feb. 13, UT
Toni Martin '84, Dec. 18, UT
Jade McCarthy '80MS, Feb. 4, WY
Musetta Neumann Mortimer '81, Feb. 20, UT
Leslie Scott Noorlander '89, Feb. 24, UT
Julie Mitchell Palmer '81MS, Mar. 1, TX
Ellen Lyn Pearson '84, Jan. 11, ID
Phillip Petersen '87, Jan. 3, UT
Neil F. Staffanson '80, Jan. 6, UT
Bart F. Stone '83MAC, Dec. 27, MN
Wayne D. Torgerson '87, Dec. 27, CA

1990s
Bruce A. Adams '90, Dec. 7, UT
Pamela C. Bedard '94, Feb. 4, NV
Kenneth Jeffrey Eames '92, Dec. 1, UT
Debra Gillis '95, Feb. 13, WY
Susan J. Gourley '92MED, Feb. 5, UT
Rex E. Hoopes '91, Jan. 24, ID
Ronald L. Martini '91MED, Nov. 26, NV
Glenn J. McMurtrey '99MBA, Dec. 3, UT
Carol Nielsen '90, Jan. 5, UT

2000s
Mark Ford Anderson '06MFA, Dec. 23, ID
Sandra S. Behling '00, Jan. 19, UT
Lynette Campbell '00, Nov. 24, UT
Valerie Dovayak '00, Jan. 30, UT
Marla G. Excell '07, Mar. 6, UT
Molly E. Hubbard '08, Jan. 7, OR
Karthik Krithivasan '99MS, Mar. 7, AZ

2010s
Caleb A. Dooley '13, Feb. 23, UT
Alex B. Stoddard '14, Mar. 9, UT

ATTENDERS
Angela S. Aldred Dec. 4, CO
Gordon Ray Alley Jan. 3, UT
Kevin J. Allridge Jan. 29, UT
Boyd J. Anderson Nov. 21, UT
Martha Kathryn Andrews Dec. 17, UT
Barbara O. Ashby Mar. 2, UT
Catherine Jenae Peterson Atkinson Dec. 26, UT
Gayle B. Atwood (Brotherson) Feb. 7, UT
Sadie S. Baca Feb. 10, UT
H. Dean Baddley Mar. 5, UT
Patricia E. Barton (Jewkes) Jan. 25, CA
Kent E. Bendixon Nov. 23, UT
Philip E. Bergeson Feb. 15, UT
Joyce Bingham (Nelson) Dec. 11, ID
Randy E. Bishop Feb. 3, UT
Paul C. Bitters Feb. 24, UT
Rhoda J. Bordea Dec. 5, UT
Patsy G. Boyce Dec. 15, UT
Delores Adams Bradshaw Dec. 28, UT
Gwen R. Brian (Bridges) Dec. 2, UT
Alexandra S. Calevas (Stamoulis) Mar. 1, CA
RD Call Feb. 27, CA
Ronald Norman Cazier Jan. 25, UT
Kevin Chapman Mar. 5, IL
John D. Chasel Feb. 4, UT
Jennie J. Christensen (Jensen) Feb. 23, UT
Loy Y. Cleverly Feb. 15, UT
Gary Earl Condie Jan. 1, CA
Philip D. Coulter Dec. 24, UT
Claude Dahl Dec. 19, UT
Deborah Ann Davies Dec. 16, UT
Frank Delost Mar. 7, UT
Des W. Devin Jan. 25, UT
Elizabeth S. Doty Dec. 1, UT
Idonna P. Dugmore Dec. 11, UT
Craig R. Ebert Dec. 24, AZ
Gerald Elison Dec. 21, UT
Janice A. Evans Mar. 1, CA
Harvey D. Facer Feb. 7, UT
Uleah Flamm (Chlarson) Jan. 29, UT
Janice Corrine Garrett Dec. 17, UT
Robert Lee Geiger Jan. 23, DE
David C. Germany Mar. 8, UT
Jack Gregersen Dec. 12, ID
Richard Guymon Jan. 14, UT
Glen R. Haddock Jan. 17, OR
Mark Lane Hall Dec. 23, UT
Juan Schwartz Hansen Jan. 15, UT
Lupita G. Harrison Feb. 8, UT
Gary Michael Harshberger Dec. 13, UT
Steven Harold Hatch Feb. 6, UT
JoAnn M. Hawkins (McAllister) Feb. 15, UT
Eugene Haycock Feb. 21, UT
Kathy M. Heath (Buckeye) Mar. 11, UT
Janice T. Hill Dec. 21, UT
Janet Kiddle Holman Dec. 26, UT
Michael A. Huntsman Dec. 29, UT
Ralph J. Ison Feb. 1, UT
Jerry F. Jaramillo Dec. 12, UT
Chris J. Juliano Mar. 1, UT
LaRae Kinder Dec. 6, UT
Trever Lee Klien Feb. 12, UT
Kathryn J. Koch Jan. 17, UT
Verna Lauritsen Dec. 16, UT
Karleen B. Liebschutz (Balle) Feb. 12, UT
Nancy B. Livingston (Brockbank) Jan. 1, UT
Ashlie Dawn Logston Dec. 19, UT
Verl P. Long Jan. 24, ID
George A. Lynch Nov. 26, UT
Douglas G. Magleby Dec. 26, UT
Gene M. Manzanares Jan. 2, UT
Margherete M. Marx (Monnett) Feb. 21, UT
Gaylene M. Matthews Feb. 11, UT
Bradly Kip McCourt Dec. 28, UT
Todd Mcfarland Mar. 6, UT
Edward C. McKim Mar. 6, ID
Barbara Cluff Melis Dec. 19, UT
Raul Mena Dec. 28, UT
Cleo T. Moss (Rasmussen) Dec. 3, UT
Marge G. Murray (Geddes) Nov. 23, UT
Nathan L. Navarro Feb. 9, UT
Tammy M. Naylor Dec. 9, UT
Caril G. Nelson Feb. 14, AZ
Nelda Oakeson (Haderlie) Feb. 7, UT
Arlene Parisot (Taylor) Nov. 23, MT
Jason B. Parkin Nov. 26, UT
Clyde Austin Parlette Jan. 21, CA
Donald F. Pierce Jan. 31, UT
Steven R. Pierson Jan. 18, UT
Gerald J. Plowman Mar. 3, WY
Don B. Poppleton Dec. 4, UT
Bob Porter Dec. 18, NV
Jean L. Prather Jan. 11, UT
Eugene K. Probst Dec. 14, UT
Barbara A. Procarione Feb. 2, UT
Marianna Pugmire Feb. 24, UT
Sue A. Read (Hansen) Feb. 14, UT
Thomas Walker Rees Dec. 17, UT
Nancy O'keefe Richards Jan. 15, ID
Robert D. Robison Feb. 21, UT
Barbara W. Roemmich (Willoughby) Jan. 29, UT
Mila Roper (Aitken) Nov. 24, UT
Kelly Louise Ross Jan. 14, UT
Judy J. Saunders Dec. 12, UT
Daphne P. Sharp (Painter) Dec. 13, UT
Grant N. Shelton Mar. 4, WY
Sharon A. Sidwell Dec. 21, PA
Don K. Singleton Dec. 30, UT
Linda C. Smart Jan. 15, UT
Acel V. Smith Jan. 3, WY
Jarod D. Sorenson Dec. 22, UT
Kathryn B. Spackman Dec. 14, UT
Gilbert W. Staman Jan. 23, IA
Carolyn Stevens Mar. 5, WY
Dorothy W. Stringham Jan. 14, UT
Tzuo Ren Su Dec. 7, CA
M. Brent Summerhays Feb. 18, ID
Jennie Betsy Sutherland Dec. 7, UT
Dennis Paul Swain Nov. 21, NV
Doyle K. Swallow Feb. 11, UT
Gerald R. Swasey Jan. 27, UT
Gerald F. Taylor Feb. 28, UT
Margaret Thomas (Redd) Feb. 21, UT
Terry B. Tibbitts Jan. 13, ID
James Tomchee Jan. 7, AZ
Cornelius Van Ry Feb. 20, UT
Mary D. Vatsis (Dragatis) Feb. 8, TX
Wilfredo Velasquez Jan. 26, CO
Earleen Janice Vest Jan. 16, UT
Howard Elden Warner Jan. 23, UT
Loya Marie Warnick (Cope) Feb. 29, MT
Kent A. Watson Dec. 27, UT
Richard C. Watts Dec. 10, UT
Cynthia F. Webb Jan. 24, UT
Derek E. Wetherington Nov. 30, UT
Reed Burton Whitesides Dec. 6, UT
Leonard Wilson Dec. 19, UT
Connie H. Wimmer Jan. 3, UT
Deborah Kay Zele Jan. 14, UT
Ramona Zmerzlikar Feb. 25, UT

USU EDUCATORS
George Shelby Nov. 29, UT
Robert W. Gunderson Jan. 22, MT
Chad Richard Reid Feb. 18, UT
Jay B. Karren Nov. 23, UT
Vosco Call Dec. 24, UT
R. Dean Plowman Feb. 6, UT
Paul C. Bitters Feb. 24, UT
Vernal Laroy Smith Feb. 21, UT
Lana G. Robinson Jan. 6, UT
Dennis R. Mauchley Jan. 24, UT
F. Dean Madsen Nov. 24, UT
Derick Earle Dec. 23, UT

resiliency and HOPE

GIFT PLANNING
University Advancement
UtahStateUniversity

The challenges our society is currently facing bring opportunities for reflection that inspire people to help others and move forward with hope for a brighter future.

Our top priority is the health and safety of Utah State University's students, faculty, staff and their families. Some of our students are facing unique financial hardships as they work to complete their education. We understand the very real impact of the current health and economic crisis and we deeply appreciate the help we are receiving from our Aggie community to meet the needs of our students.

While some are in a position to help with immediate needs, others wish they could.

For those who wish they could do more, there are more ways to help than you ever thought possible. A modest gift from your will or trust can change the course of students' lives for years to come.

Would you like to do more? We're just a phone call away. We would be honored to partner with you in building a bright future for our students.

If you have already included USU in your plans, THANK YOU! We hope you will let us know so that we can recognize and celebrate your generosity to future generations of Aggies.

USU Gift Planning Team: Ben Stahmann & Karin Hardy

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The university is no stranger to stepping up during hard times.
During WWI, Old Main Hill was plowed to plant a victory garden.
Photo courtesy of USU Special Collections and Archives.