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THE UNIVERSE

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Brigham Young University
Provo, Utah

BYU researchers contribute to a cure for Alzheimer's



Third in series

By ALICIA MATSUURA

BYU alumna Judy Seegmiller knew months in advance that her husband, Craig, had Alzheimer's disease.

The signs were there. While working at his store, he would ask customers how much change he owed them, and then double-check to see whether the amount was right. He would tell people he forgot his glasses even though he wore contacts. When he was driving, he would pull off to the side of the road for unknown reasons, only to turn around and go back home.

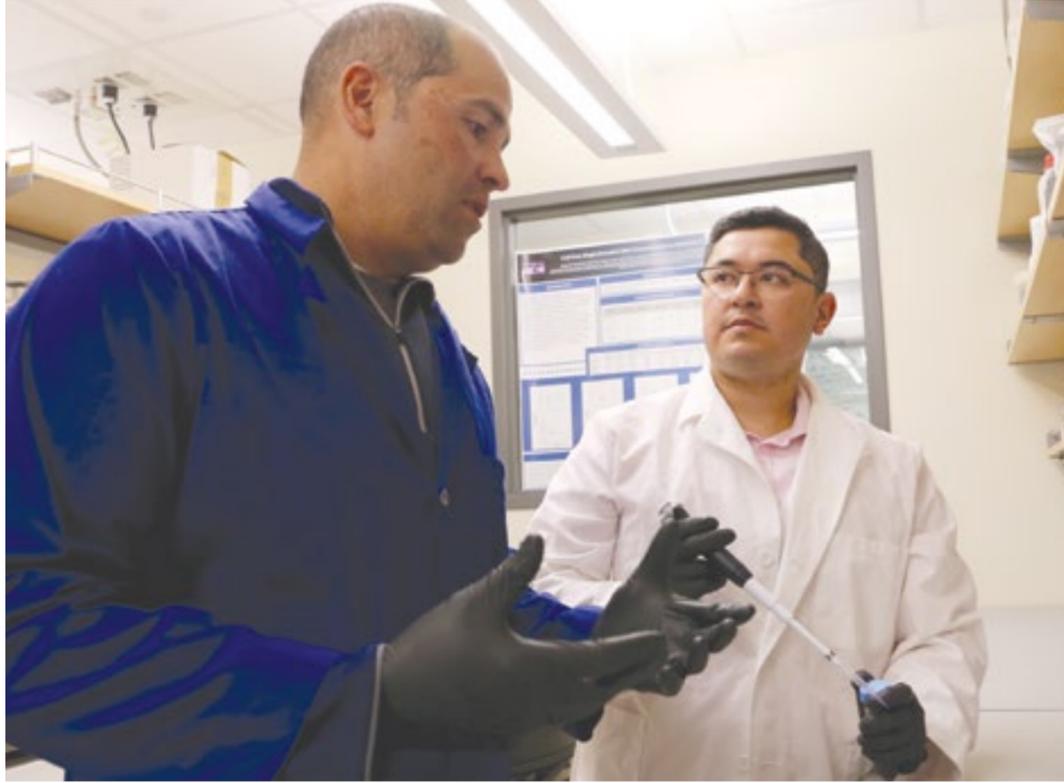
In August of 1999, Seegmiller's observations were confirmed when her husband was diagnosed with the early stages of Alzheimer's, or "Big Al" as they would call it. Seegmiller, who dealt with her own health challenges prior to Craig's diagnosis, told him, "Do you realize how blessed we are? You got to help take care of me and now I get to help take care of you. Now, you're going to take two white pills and you'll be perfect."

She gave Craig two white aspirins and he was convinced that everything would be OK.

"He thought we were going to grow old together and he was going to be perfect," Seegmiller said. "Words are medicine," I tell people. You tell them everything they need to hear and you live in their world, because they're not a part of your world anymore."

The ongoing fight against Alzheimer's

That is the very nature of Alzheimer's disease: a progressive disorder that causes brain cells to waste away and die, slowly destroying memory and thinking skills. Nancy Reagan famously referred to it as the "long goodbye," the disease that takes someone away slowly,



John Kauwe works with Ph.D. student Josue González in the Kauwe Lab in the Life Sciences Building on Oct. 28, 2019. Scan the photo with the *Universe Plus* app to listen to or read a Spanish translation of the story.

Sydnee Gonzalez



painfully, bit by bit.

There are currently 5.8 million people in the United States who suffer from Alzheimer's disease. It is also the sixth leading cause of death among Americans.

According to Perry Ridge, an Alzheimer's researcher and BYU biology professor, as the generation of baby boomers move into the age range where they're more prone to Alzheimer's, the numbers of those who suffer from the disease are expected to skyrocket in the next 50 years.

Ridge, along with other faculty members and researchers at BYU, is actively involved in projects to better understand the disease and work toward finding a

cure.

"Currently we have about a thousand whole genomes from different individuals, and we're able to go through those to identify genetic markers that influence risk for Alzheimer's disease," Ridge said.

John Kauwe is also an Alzheimer's researcher and has worked with the BYU community for 10 years. In addition to teaching biology courses and doing research, he travels all over the world talking about Alzheimer's disease genetics.

Through campus resources like the DNA Sequencing Center and the Office of Research Computing, Ridge, Kauwe and other researchers recently discovered a genetic change to a gene called

RAB10, which confers a large protective effect for people who have the potential to develop Alzheimer's disease. While a good portion of Alzheimer's research is focused on exploring the causes of the disease, this team decided to take a different approach.

"We were focusing more on what we can do to prevent disease and why some people are more resilient to aging than others," Ridge said.

BYU researchers focus primarily on basic research and understanding of the science of disease. According to Kauwe, it often takes many years to translate findings into therapeutic interventions.

See RESEARCH on Page 4

Religious OCD: When faith becomes an obsession

By ALICIA MATSUURA

Imagine being obsessed with your personal worthiness before God — a captive to compulsive thoughts that require engaging in excessive religious behavior to cope.

Imagine being weighed down with the constant need to confess sinful behavior to an ecclesiastical leader and unable to accept anything less than perfection.

For individuals with scrupulosity, this is a reality.

Falling under the umbrella of obsessive compulsive disorder (OCD), scrupulosity — also referred to as "religious OCD" — is an obsession involving religious or moral matters. Scrupulous individuals are overly concerned that their thoughts or actions might be considered sinful or violate moral doctrine.

"Scrupulosity expects you to be more Catholic than the pope," said Jeremy Reschke, a BYU student from Alpine, Utah.

Reschke noticed scrupulous symptoms in himself from a young age and was officially diagnosed with OCD in the ninth grade. He recalled one night when he was burdened with an unrelenting notion to read the scriptures all night long. His mind became overcrowded with conflicting thoughts like, "this is a good thing to do," or, "this doesn't make sense," or, "if I don't do this, bad things will happen."

"This is how my OCD was manifest, in that religious sense," Reschke said. "I've considered myself to be a very religious, spiritual, philosophical person, where I

COMMON SCRUPULOSITY SYMPTOMS

FEAR OF LIVING IN SIN			FEAR OF HAVING BLASPHEMOUS THOUGHTS
BELIEF OF BEING UNWORTHY OF GOD'S LOVE			FEAR OF NOT PRAYING HUMBLY OR SINCERELY
FEAR OF NOT READING THE SCRIPTURES ENOUGH			CONSTANT VISITS TO PLACES OF WORSHIP

Ben Daniel

Religious OCD, or scrupulosity, can have many symptoms. A few common symptoms are identified here.

tend to think about things deeply. That's why scrupulosity was so effective infiltrating my life."

Other symptoms Reschke portrayed were confessing to his bishop every time he had a bad thought, avoiding reading scriptures about Satan and having a fear of the number six.

"If I had a blasphemous or violent thought during my scripture study, I couldn't count that toward my spiritual progression at all," Reschke said.

Socializing became extremely difficult during Reschke's high school years and he soon fell into a cycle of

depression. Furthermore, his scrupulous symptoms led him to misinterpret the chemical imbalance in his brain as "something being wrong with his spirit."

Reschke isn't the only one. According to Annabella Hagen, the clinical director of Mindset Family Therapy in Provo, most of their clients who deal with scrupulosity are college students between the ages of 18 and 26.

Scrupulosity among members of the Church

A series of academic research

studies suggest that scrupulosity may be more prevalent among members of The Church of Jesus Christ of Latter-day Saints compared to other religious groups.

A University of Pennsylvania study involving 197 Latter-day Saint students used the Penn Inventory of Scrupulosity (PIOS) as a form of measurement. The main religious groups represented among the students were Protestants, Catholics and Jews, in which the Protestants scored the highest.

See OCD on Page 5

Conversion therapy banned in Utah

ASSOCIATED PRESS

SALT LAKE CITY — The discredited practice of conversion therapy for LGBT children is now banned in Utah, making it the 19th state and one of the most conservative to prohibit it.

Supporters navigated a winding path to passage and some dissent remains, but barring it in Utah could give a boost to similar efforts in other right-leaning states, said Shannon Minter, legal director for the National Center for Lesbian Rights.

"It's really given people a lot of hope," said Minter, whose group has pushed for bans around the U.S. Virginia is considering a ban, and the issue could also come up in this year in Texas and Kentucky, he said.

The change in Utah comes after the state hammered out a regulatory rule that had the support of the influential Church of Jesus Christ of Latter-day Saints. Leaders had opposed a previous version because it didn't have certain exceptions for clergy.

"This is no longer a partisan cause, we all agree on how important it is to protect children from suicide," said Cliff Rosky, a law professor who sits on the advisory council for the group Equality Utah during a news conference. He said he's also been contacted by advocates in Iowa and Nebraska.

Republican Gov. Gary Herbert took the unusual step of calling on regulators after a proposed law was derailed after conservative lawmakers made changes to the bill. State officials confirmed the rule became final on Jan. 21.

"Ultimately, I'm grateful to live in a state like Utah where we say you matter to everyone," said Nathan Dalley, a 20-year-old student who underwent so-called conversion therapy as a teenager and has said it culminated in a suicide attempt.

The original sponsor of the proposal, GOP Utah Rep. Craig Hall, applauded the rule going into effect, saying it prohibits dangerous practices while protecting healthcare professionals.

"It will simply save lives," he said.

Conversion therapy is a practice used to try to change sexual orientation or gender identity. Many people who have been through it say it deepened feelings of depression and increased thoughts of suicide. The new rule bans licensed Utah therapists from subjecting LGBT minors to the practice that the American Psychological Association has said is not based in science and is harmful to mental health. The Utah Psychological Association also spoke in favor of the rule.

The ban has drawn push back. Opponents argued it would prevent parents from getting help for children with "unwanted" feelings and keep therapists from taking on young clients for fear of accidentally breaking the rules if kids want to discuss feelings about sexuality.

The rule could become an issue during the 2020 legislative session, said Gayle Ruzicka, president of the conservative Eagle Forum. "I'm astounded at all the people who have agreed to this, it's just wrong," she said.

Supporters of the ban, meanwhile, say therapists can talk about issues of sexuality with young clients as long as they don't try to change their orientation or gender identity.

The Church of Jesus Christ of Latter-day Saints, opposes same-sex marriage and teaches that intimate same-sex relationships are a sin. But it also urges members to be kind and compassionate to LGBT people. The church holds tremendous influence in Utah, where the majority of state lawmakers and nearly two-thirds of the state's 3.1 million residents are members.

The faith got behind the conversion therapy ban after supporters included assurances that church leaders and members who are therapists would be allowed to provide spiritual counseling.

UNIVERSE news briefs

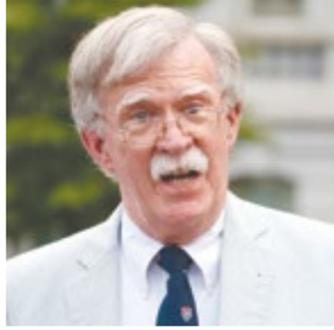
FROM THE ASSOCIATED PRESS



China's virus fans fear for businesses

China's worst health crisis in years has sparked fear and uncertainty for businesses from North America to Asia that depend on trade in the affected region. Businesses with locations in the infected area, including McDonald's and Shanghai Disneyland, have also closed temporarily as a precaution.

Experts say it's too soon to know how disruptive the crisis will prove. But it's already having an impact. So far, there are 830 confirmed cases of the virus and 26 deaths.



Trump dismisses Bolton book as false

President Donald Trump is dismissing a claim by his former national security adviser, John Bolton, as patently "false."

Bolton writes in his forthcoming book that Trump told him that he wanted to withhold hundreds of millions of dollars in security aid from Ukraine until it helped secure investigations into former Vice President Joe Biden. The revelations in the book have dramatically increased pressure on Republican senators to call Bolton to testify at Trump's impeachment trial.



New emotional support animal rules

The U.S. Department of Transportation has proposed that only specially trained dogs qualify as service animals, which must be allowed in the cabin at no charge. Airlines could ban emotional-support animals, including untrained dogs, cats pigs, pheasants, rabbits and snakes.

Airlines lobbied the Transportation Department to crack down on what they consider a scam by passengers who call their pets emotional-support animals to avoid pet fees that generally run more than \$100 each way.



New rules to restrict 'birth tourism'

The Trump administration is imposing new visa rules aimed at restricting "birth tourism," in which women travel to the United States to give birth so their children can have U.S. citizenship. The regulations do not apply to foreign travelers coming from any of the 39 mainly European and Asian countries enrolled in the Visa Waiver Program.

Birth tourism is a lucrative business. Companies take out advertisements and charge up to \$80,000 to facilitate the practice.



Siblings win big at the Grammys

The edgy, avant-pop album "When We Fall Asleep, Where Do We Go?" that siblings Billie Eilish and Finneas O'Connell created in a small bedroom in the artists' Los Angeles home made a big splash at the 2020 Grammy Awards, winning 11 honors.

O'Connell, who co-wrote, produced and engineered the album, walked away as Sunday's top winner with six. Eilish won five honors, four of which were top honors. Together, they also won best pop vocal album.

Emotional support animals a growing surprise in student housing

By MARINA MCNAIRY

Like most BYU students, 20-year-old English major Katherine Tew didn't anticipate having an animal for a roommate. Tew would come home to the sound of restless barking from behind her roommate's locked door. The roommate would keep her registered emotional support dog in her bedroom daily while she attended classes and work.

"The dog ate the batteries of a remote and jumped out of the third floor window at my apartment complex. Luckily, it didn't get seriously hurt. The dog was restless," Tew said. She was

surprised and uncomfortable with the dog in her apartment and the lack of care for the animal.

This wasn't the last time Tew was faced with such a dilemma. "Another girl I lived with had an emotional support cat and left on a trip, leaving the cat with no water and food. I heard the cat meowing super loud, so I bought the cat food before leaving for the semester," she said.

Such complaints with emotional support animals are a growing issue in student housing on and off campus. Provo apartment managers are often stuck in the middle of navigating the issues between the legal rights of disabled students to keep such animals. They must

deal with the concerns of students who are allergic or end up as involuntary caregivers to animals neglected by their owners.

At the same time, a Provo lawmaker is proposing a resolution to help better define the categories of therapy animals, support animals and service animals. In addition, the resolution would standardize training to use them.

According to BYU's housing guidelines and policies, "Pets and animals of any kind are not allowed in the residence halls. The only exceptions are special assistance animals for tenants with disabilities, or fish for certain biology classes." As a result, a person with an

assistance animal can legally request to live at a property where a housing provider has a no-pets policy.

Many BYU students say that apartment complex managers aren't informing tenants ahead of time of animal roommates.

"I would have never signed a contract knowing that I was going to have an animal in my apartment," said Kate Pingree, an exercise science major. "About a week or less before I moved into this apartment, my apartment complex texted me and said I'm going to have an emotional support animal living with me. They told me if I had allergies, to let them know."

Pingree said she was upset to find out after she signed the contract that there would be an animal in the apartment. She was concerned about friends with bad allergies not being able to visit because of shedded fur and smells.

These students aren't alone in this newfound responsibility. Despite not attending BYU, Ashley Hales, a graduate student studying education, chose to live in BYU-contracted housing. Hales lived with a cat that was regularly locked in a small bedroom. "The cat cried non-stop with this awful smell. I ended up having to go in there to clean it all up because it was so disgusting," she said.

Hales said that she felt bad for the cat since the owner did not take care of it. When a roommate is gone all day, the responsibility to take care of the animal might shift to others.

"I know people who have diagnosed anxiety and depression who rely on their dogs, but it's clear some people are not good pet owners. It just puts the burden on roommates," Hales

said.

According to the BYU Animals on Campus Policy, BYU strives for balance between helping those with disabilities and mental health struggles and helping those with other safety concerns within the BYU community.

Aspen Ridge Management manages many BYU-contracted residences throughout Provo. Debbie Morris, administrative assistant at Aspen Ridge Management, said the company makes reasonable accommodations for residents who have emotional support animals as well as service animals.

"We require that the resident submits paperwork prior to bringing the animal into the apartment," Morris said. "We make sure to inquire if any of the current residents have any mental or emotional issues that would be negatively impacted by having an animal in the apartment."

According to Jennifer Sappenfield from The Branbury, "Apartment complexes, such as The Branbury, don't notify other residents before they move in because emotional support animals are accommodations for those with a disability."

The most common case made for keeping an emotional support animal out of an apartment is allergies.

"(At The Branbury) if one of the roommates has proof of an allergy before the person with the assistance animal was coming to move in, there would be a standing accommodation for that apartment," Sappenfield said. "No one else that moves into that apartment can get an assistance animal."

If this information is provided prior to an animal moving in, Sappenfield said that

person with the allergy has the priority. However, if the documentation of the allergy is provided after a service animal has already moved in, then managers could offer to move or transfer the person with allergies.

Rep. Marsha Judkins, R-Provo, is sponsoring HJR6, a proposed resolution at the Utah Legislature that would provide an alternative way for students to receive animal services. The resolution would point out the distinction between therapy animals, support animals and service animals.

"Service animals differ from emotional support animals because their services are offered for free," Judkins said. "Unlike support and service animals, therapy animals have no rights under the law. They can not go anywhere that they are not invited."

One example of therapy animals being properly used is when airports invite a therapy animal to calm anxious passengers before a flight. The dog is with them in the airport, but the animal will not accompany them on the plane.

Judkins is attempting to pass HJR6 to encourage standardized screening and training for animals that will be used as therapy animals and to show support for their use.

"We have so many mental and emotional health issues among all populations in Utah," Judkins said. "Studies have shown that these animals really do have a positive effect."

Encouraging students to take advantage of therapy animals could help minimize potential roommate tension. This could be an alternative for students who are unable to dedicate the time and effort to taking care of an animal in their own apartment.

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Students with a sash: Cougars and Miss America

By WHITNEY BIGELOW

It was a bucket list item for some of them, a way to pay for school for others. Regardless of how they got here, these BYU students are now the proud owners of a crown, a sash and the opportunity to represent and impact their communities.

Six members of BYU's student body are current titleholders in the Miss America Organization. Local titleholders include Lindsey Gill (Miss Provo), Glory Thomas (Miss Orem), Brittney Herman (Miss Zion), Sarah Nelson (Miss Murray) and Sasha Sloan (Miss Greater Salt Lake).

Abbie Kondel, a BYU senior, currently holds the state title of Miss Washington. Kondel participated in the Miss America 2020 competition in December.

Between school, work and titleholder responsibilities, these ladies are some of the busiest on campus. They explained how they are balancing all of the demands on their time, what they are doing to prepare and what their crown means to them.

What does someone like Miss Provo actually do? According to Gill, the job description is a lot longer than "smile and wave."

"Not only am I preparing for the (Miss Utah) competition itself, but I'm also raising money for CMN (Children's Miracle Network) hospitals, attending city events and promoting my social impact initiative," Gill said.

Titleholders each choose a social impact initiative — an issue they are passionate about and promote awareness of in their community throughout the year.

For example, Herman started a non-profit organization called We Will that seeks to prevent sexual assault and mitigate its harmful effects. Sloan is the founder of Rise for Refugees, an organization focused on including, supporting and educating Utah's growing refugee population.



Clockwise from top left: Sasha Sloan, Miss Greater Salt Lake; Lindsey Gill, Miss Provo; Abbie Kondel, Miss Washington; Brittney Herman, Miss Zion; Glory Thomas, Miss Orem; and Sarah Nelson, Miss Murray.

Thomas, a music education major whose platform involves spreading kindness, said the community service aspect of her title is the most fulfilling to her.

"I am the city's designated helper. Whenever an organization or business needs volunteers, they turn to the Miss Orem organization to find the help they need," Thomas said. "The work we do is valuable, it's hard and it's absolutely worth it."

Though they each enjoy serving, these women have an important competition that is quickly approaching. They will compete for scholarships and the title of Miss Utah from May 28-30 at the Capitol Theatre in Salt Lake City. Scholarships and other awards are on the line, which can lead to stressful preparations.

Getting a stage-ready

swimsuit body is no longer on their list of things to do, as Miss America made some big changes to its program in 2018, including the discontinuation of the swimsuit portion of the judging. But contestants still have plenty to prepare for.

Herman, a third-year student working toward her doctorate at the BYU Law School, explained what preparations go into an average day.

"I practice my talent, the flute, for almost an hour every day. I practice hundreds of interview and on-stage questions both on my own and in mock interviews with my team," Herman said. "I also practice walking like I would on stage. My classmates will sometimes catch me strutting my stuff in the hallways at school and tease me, but it's

in the spring because of the thousands of dollars I've earned competing for Miss Utah."

Kondel entered her first Miss America local program as a senior in high school after being accepted into BYU. Though she did not win that first competition, she walked away with \$2,500, nearly enough to pay for her first semester of school.

"It was the perfect set up," Kondel said. "I could continue to showcase my love for dance while gaining scholarship money to pay for BYU. I fell in love with the program and I've been hooked ever since."

BYU students are no strangers to busy schedules, and these titleholders are no exception. They said one of the biggest takeaways from their experience with Miss America has been time management skills.

"I've learned firsthand that juggling multiple things is tough, especially because I also have two jobs on top of school and Miss Provo," Gillman said. "If I want to be successful in each of those aspects, then effective planning is essential."

Nelson said she uses an extensive planner to keep track of all her commitments, while Herman said she has abandoned the idea of free time altogether.

"I feel confident that I will look back at my time as a titleholder and recognize that I helped people," Herman said. "To me, this knowledge is worth having less free time."

Kondel said that even though the job is demanding, she does not feel that it has had any negative effect on her education.

"I have never felt like competing has taken over my ability to pursue my degree," Kondel said. "If anything, it has only enhanced my ability to learn, connect with others and manage time."

Despite these students' positive experiences with the Miss America program, they say facing stigma and stereotypes linked to traditional ideas about

"pageant queens" is not easy.

Sloan experienced these stereotypes firsthand at a community service event last year. She said while she was helping some kids with a craft activity, one little girl turned to her mom to ask who Sloan was. Sloan remembers the mother responded, "Oh, she's just someone who won a beauty contest."

"My heart just sunk," Sloan said. "I wanted to explain to this mother that there were so many reasons that I could be a role model for her daughter as a public figure — and none of them have to do with the way that I look. We should never teach our daughters that that's the most important characteristic they have to offer."

Herman admits she used to be someone who believed these stereotypes.

"I didn't begin participating in these competitions until I was older, and I admit that I had already formed some bias against the competitions and the types of girls who participated," Herman said. "My beliefs and stigmas were the same ones I hear today, that women who participate are shallow, silly or even dumb. I have been so humbled to realize that I compete with intelligent, successful and talented women."

As the Miss America Organization continues to evolve, titleholders expressed the hope that people's perceptions of the program would evolve as well.

"There are no points for beauty, no parade of swimsuits, none of the traditional fixtures associated with a 'beauty queen,'" Sloan said. "I wish that people understood that these women competing aren't just pretty girls — they are social entrepreneurs with an aptitude for civic engagement and a passion for personal development."

Nelson agrees that these stereotypes don't accurately reflect the work that titleholders do.

"It's so much more than pageant gowns and a crown," Nelson said.

TODAY

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Dr. Alan Stern
Planetary Scientist

A celebrated planetary scientist and space program executive, Dr. Alan Stern is at the helm of one of the most significant and celebrated space program projects in history—NASA's *New Horizons* mission to Pluto, completed in 2015—after more than 26 years of advocating for the trailblazing mission.

The fastest spacecraft ever launched, Stern's *New Horizons* set out on the first-ever mission to Pluto and the Kuiper Belt in 2006, reaching Pluto in the summer of 2015 after a decade-long journey that enabled the U.S. to complete this historic last step of the first reconnaissance of the planets. His book about his experiences with the mission, *Chasing New Horizons: Inside the Epic First Mission to Pluto*, was released in 2018.

Stern's career in space exploration is extensive and features more

than 25 years in space instrument development and a two-year stint as NASA's chief of all science missions, overseeing a record 10 major new flight projects and the implementation of all of NASA's science research, education, and public outreach programs. Currently Stern serves as an associate vice president at the Southwest Research Institute, chief scientist at World View and the Florida Space Institute, and an aerospace consultant whose clients have included Jeff Bezos's Blue Origin and Richard Branson's Virgin Galactic.

His work and dedication to space exploration has earned him various honors, including a spot on *Time's* 2016 list of the 100 Most Influential People in the World and *Smithsonian* magazine's 2015 American Ingenuity Award.

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Finding a cure

Continued from Page 1

“The direct impact on people is not generally the curing of a disease,” Kauwe said. “Instead, those who participate in our research are impacted by knowing that they are contributing to efforts that will lead to a cure in the future.”

Kauwe said he hopes each step toward finding a cure will help empower those who are suffering from the challenging and currently untreatable Alzheimer’s disease.

The physical and emotional cost of Alzheimer’s on family members is also extremely high. According to Ridge, when someone gets the disease, often-times the primary caretaker is the elderly spouse who is not equipped physically or emotionally to care for someone 24/7.

“Frequently, they’ll drain their savings, their retirement money, to try and take care of their ill spouse so they sacrifice their own well-being,” Ridge said. “It’s a complex disease and it’s difficult to understand.”

The cost in the United States

will be \$290 billion in 2019 for the research and treatments for Alzheimer’s disease and other dementias. This number is predicted to increase as high as \$1.1 trillion in 2050 as the population ages and the disease becomes more prevalent.

Many researchers, medical specialists and volunteers are devoting their time and efforts to offset the high cost of Alzheimer’s in hopes that less families will have to deal with the financial and emotional turmoil it brings.

Since starting her personal journey helping her husband face “Big Al,” Seegmiller has devoted her life to helping others cope with this difficult disease. She has led several caregiver support groups and written a book while continuing to speak about her caregiving experiences to students and faculty members at BYU, University of Utah and Utah State University. She also encourages people to find joy and gratitude in the journey.

“If our eyes didn’t have tears, our hearts wouldn’t have any rainbows,” Seegmiller said. “Involve others in the journey. It enriches their lives, enriches yours and creates awareness.”

Next: DNA and law enforcement

Genetics research at BYU may not be what you think



By ALICIA MATSUURA

Genetics and Alzheimer’s researchers at BYU have made far-reaching contributions to their fields through two valuable campus resources: the DNA Sequencing Center (DNASC) and the Office of Research Computing.

These resources generate data that is used by BYU faculty researchers, students and collaborators from other universities in their research.

Although many people approach the DNASC requesting sequencing for family history and genealogy related samples, these services are currently not offered. The DNASC, along with the Office of Research Computing, is centered on the primary focus of providing support for academic research.

DNA Sequencing Center

Inside the Life Sciences Building is a collection of small rooms that make up what is known as the BYU DNASC. This center is vital to researchers and houses DNA sequencing machines that



Alicia Matsuura

Edward Wilcox demonstrates a step in the DNA cleaning process involving magnetized beads.

are dedicated to efficiently and economically processing DNA samples.

Edward Wilcox, managing director of the sequencing center, has worked as a full-time research faculty member since 2005. He manages everything from the DNA sequencing machines to student employees who help prepare samples.

The process of preparing DNA samples involves isolating them, shearing them down to the right size, making libraries and cleaning them.

“A library is just pieces of DNA with adapters on the ends,” Wilcox said. “The adapters are what allows us to sequence in since it’s a known sequence. From there, we can sequence into the unknown.”

After the libraries are prepared, they are ready to be placed in the sequencing machines. The DNASC currently has three machines: the Illumina, PacBio I and PacBio II. The 2015 Illumina will retire at some point and be replaced by a new machine called the NovaSeq. This machine will cost about a million dollars but is essential for the work and is expected to generate more data at less of a cost.

Handling all this expensive equipment requires great care. Wilcox admits he may come off as “overbearing” to student employees at times, but that’s because everything needs to be done just right.

“That’s \$20,000 of reagent (a substance or compound added to a system to cause a chemical reaction) we’re putting on the machines right now. If we don’t do things right, and the run fails, we’re out \$20,000,” Wilcox said. “It’s a little concerning, and we cannot afford to lose a run.”

BYU junior Miranda Johnson has been working at the DNASC since September 2018. The neuroscience major said the job is stressful and requires a lot of multitasking.

“But it’s less stressful than customer service in my opinion,” Johnson said.

The DNASC receives a variety

of different samples from all across the United States and the world, including recent samples from Russia, the Czech Republic and Italy. The samples can come from any living organism, including fish, plants, insects, sunflowers and blood.

“It’s pretty random what we get,” Johnson said. “That’s the fun part of the DNA Sequencing lab! It’s familiar enough you don’t get lost, but it’s always a little bit different.”

BYU biology professor and Alzheimer’s researcher John Kauwe said the DNASC is an important resource that nearly everyone doing genetics research at BYU relies on for some aspects of their data generation.

“It’s great to have that resource right down the hall, where we know we can get high-quality data,” Kauwe said.

The Office of Research Computing

The Office of Research Computing is another vital resource for research at BYU. With over a thousand computer servers and 24,000 processor cores, this valuable resource is utilized by hundreds of users, including BYU faculty researchers, students and a few dozen collaborators from other universities.

“Nothing I do would be possible without it,” said Perry Ridge, an Alzheimer’s researcher and biology professor at BYU. “Every analysis that we run for every project is on the supercomputer.”

Research director computing Ryan Cox oversees the entire office, running everything from the servers to the employees. His team does everything from maintaining the hardware and software that researchers use and purchasing new equipment to staying on top of industry trends and helping people with code optimizations.

The servers that make up the supercomputer are located in three separate rooms across campus, the biggest being in the James E. Talmage Building. Several departments on campus rely on this resource

— especially the engineering, physical, mathematical and life sciences colleges.

The DNASC in the life sciences college sends terabyte-sized files to the servers on a weekly basis. Wilcox, the managing director of the sequencing center, said not having enough computer space has been one of their biggest challenges.

“We’re dealing with some big files here,” Wilcox said. “The computer center at BYU limits you to 15 terabytes; that’s a week’s worth of data and it’s hard to distribute everyone’s data in that time.”

Realizing this was an issue, Cox said the Office of Research Computing recently started renting out storage space to accommodate those who need the extra space.

“Some people use 80 to a 100 times more storage than the allocation we give people,” Cox said.

Generally the research computing sources are freely available to everyone, but the limited storage space makes it difficult to satisfy everyone’s needs. But according to Ridge, Cox and his team are always finding ways to accommodate those in the research community.

“The Office of Research Computing is service-oriented and they go out of their way to help faculty and students in doing research,” Ridge said. “They really make a lot of what we do here at BYU possible, and make it possible for BYU to stand out in positive ways.”

Kauwe agrees and added that these campus resources help him and his colleagues make a positive impact in their fields of research.

“It’s been wonderful coming here and having a DNA sequencing center and a high quality research computing center to analyze the scale of data we’re generating,” Kauwe said. “It’s allowed us to be competitive on a national scale and to make research progress that is meaningful in our field. They are incredible resources that are key to genetics research at BYU.”

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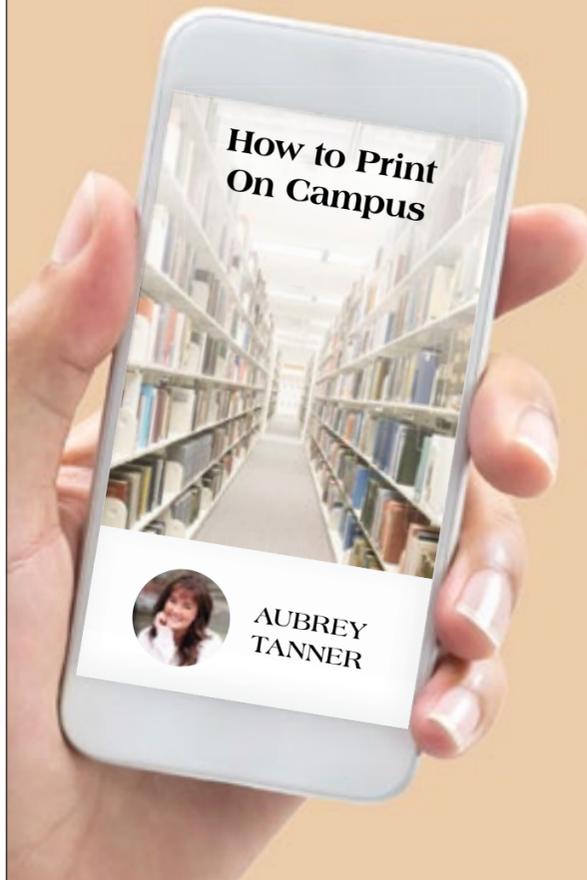
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May through August. Flexible for school schedule. \$10.00/hr plus \$250 travel allowance to Nauvoo, Illinois and \$250 for return in August. Shared housing with full kitchen provided at no cost to employee.

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#BYUUhacks

The ‘how to’ at BYU



Scan the picture on the phone using the Universe Plus app to view this hack!

Simple Bites

Recipe Column



This week: Egg Rolls

Ingredients	4 rolls	8 rolls	16 rolls
Ground turkey	1/4 lb	1/2 lb	1 lb
Onion finely diced	2 tbsp	1/4 medium	1/2 medium
Coleslaw mix	1/2 cup	1 cup	2 cups
Garlic salt	1/4 tsp	1/2 tsp	1 tsp
Black pepper	1/4 tsp	1/2 tsp	1 tsp
Soy sauce	2 tsp	1 tbsp	2 tbsp
Sesame Oil	1 tbsp	1 1/2 tbsp	3 tbsp
Egg roll wrappers	4 wrappers	1/2 package	1 package
Oil for frying			

Directions:

In a medium frying pan, heat sesame oil. Add turkey and onion. Cook until brown and onion is clear. Add coleslaw mix, garlic salt, pepper and soy sauce. Sauté, stirring often, until veggies are completely cooked and soft. Set aside and cool completely. Remove egg roll wrappers from package. Using your finger, dampen each side with water. Place about 1/4 cup of turkey mixture in center of egg roll wrapper. Be careful not to over fill. To roll egg roll: Take one corner of the wrapper and fold over the filling mixture. Using the wrapper, gently pull filling toward you. Fold left and right corners over about 1 inch to seal filling inside. Finishing rolling, making sure all sides are sealed. Heat oil in skillet, place rolled egg rolls in. Fry until golden brown on one side, turn, and continue until all sides are golden brown. Remove from skillet and drain on paper towel.

Scan this photo with the Universe Plus app to see our video of how to make egg rolls.

OCD

Scrupulosity affects students

Continued from Page 1

In a separate research study, psychology scholar and BYU professor Kawika Allen and a team of researchers administered the PIOS test to 267 Latter-day Saints. The Protestant denomination in the previously mentioned study averaged a mean of 16.47 while Latter-day Saints averaged a mean score of 24.87.

Allen's research suggests that striving for family perfectionism is a possible implication of scrupulous behavior among Church members.

"Sometimes maladaptive family perfectionism is manifest in our interpersonal relationships through our communication, behaviors and other ways of relating to each other within our families," Allen said. "When this occurs repeatedly, scrupulosity surfaces as another unhealthy factor in our families and often intensifies the maladaptive family perfectionism."

As part of his research, Allen took the approach of exploring "legalism" in relation to scrupulosity.

"Legalism is one's notion that they have to earn God's favor and love in order to be worthy. It's the works of faith and grace," Allen said. "People with scrupulosity believe, 'if I do more, I'll feel better about myself.'"

According to Hagen, Latter-day Saints with scrupulous tendencies may believe they are falling short in church-related areas like missionary work, humble and sincere prayer, service, ministering and temple attendance.

"Individuals struggling with scrupulosity may believe that they are not doing enough and continually question their intentions and behavior," Hagen said.

The striving for perfectionism is a haunting reality for Reschke, who said the natural tendency for someone with scrupulosity is to be over-religious out of compulsion rather than a love for deity — to pray more or read scriptures out of fear rather than faith. Over the years, however, Reschke has found resources to help him cope

with scrupulosity.

Clinical and religious treatment methods

Clinical treatments for individuals with scrupulosity are similar to those used on OCD patients. According to Hagen, the preferred form of treatment is cognitive behavior therapy because the behavioral part of this method helps patients face their fears and respond differently than they have in the past.

"We help clients understand that the goal of the treatment is not to 'get rid' of internal events like thoughts, memories, images, feelings, sensations and urges," Hagen said. "There is no delete button in our bodies and minds. We cannot control internal events the way we do some external situations."

Hagen said with the right kind of treatment, individuals are able to act on life instead of being acted upon by their scrupulous minds.

For some individuals like Reschke, the very thing their fears are centered on can also be a source of help and healing.

Reschke grew up perceiving God as an authoritarian figure who put judgment and justice before mercy and love. He later realized this perception of God was not an accurate reflection of the one he's believed in his whole life. Raised in a family of active members of the Church, Reschke grew up going to Sunday services every week and reading scriptures with his family every night.

"There's so many things that I've used from the gospel that have helped me cope and even extend benefits better than some medication," Reschke said. "My symptoms became easier to deal with the more I learned about relying on the Savior."

Allen hopes his research will help improve the lives of those living with scrupulosity and posed the question of how scientists, practitioners, therapists and ecclesiastical leaders could better come to their aid.

"We care, we love and we're compassionate toward these people. How do we alleviate these rates of scrupulosity and maladaptive perfectionism and shift the way we teach and invite people to come unto Christ?" Allen said. "It's about helping people come unto Christ in a more imperfect way and still feel loved by God."

Study links impeachment beliefs to regular news diets



Associated Press

Night falls on the Capitol, in Washington. For many Americans, how they feel about issues raised during President Donald Trump's impeachment has much to do with where they get their news. That's among the findings of a study out by the Pew Research Center.

ASSOCIATED PRESS

NEW YORK — For many Americans, how they feel about issues raised during President Donald Trump's impeachment has much to do with where they get their news.

A study released by the Pew Research Center illustrated these tendencies, along with the growing Republican suspicion of media sources during the Trump administration.

Roughly two-thirds of Republicans who got their news exclusively from outlets with a primarily conservative audience like Fox News, Breitbart or Rush Limbaugh's radio show told pollsters in November they believed Trump withheld aid from the Ukraine to advance a U.S. policy to reduce corruption there, Pew said.

Some 10% of these Republicans said Trump did it to help his re-election campaign — the heart of the House's impeachment case against the president.

But the gap between those views narrows among Republicans with a more varied media

diet. And Republicans who avoided media with right-leaning audiences were more likely to say Trump was acting for his own political gain (34% to 21%), although 43% said they weren't sure why he did it, Pew said.

Democrats who said they got news from outlets that appeal to liberals (MSNBC, NPR or The New York Times) or a mixed audience (ABC and CBS News, USA Today) overwhelmingly said Trump was acting in self-interest, Pew said.

The only place where more uncertainty seeped in was among Democrats who avoided outlets that appealed primarily to the left, although 49% of these still believed Trump was helping himself.

Similarly, those who followed a conservative media diet were much more likely to believe the false narrative that former Vice President Joe Biden called for a Ukrainian prosecutor's removal to protect his son from being investigated.

Heading into the 2020 campaign, Pew is launching an Election News Pathways project to help Americans understand the relationship between news

consumption habits and political perceptions and beliefs.

"We do see the correlation between media diet and what people are hearing, seeing and thinking in terms of perceptions of motivation for actions," said Amy Mitchell, Pew's director of journalism research.

In probing general attitudes toward the news media, Pew found that Republicans have grown more alienated from many established news sources than they were in a similar study conducted in 2014. Confidence in the media has been more stable among Democrats, and in some cases has increased.

Three-quarters of conservative Republicans say they trust Fox News, and two-thirds distrust CNN, Pew found. The numbers essentially flip among liberal Democrats, where 70% say they trust CNN and 77% don't trust what they see on Fox.

Pew noted a "notable growth" in Republicans' distrust of CNN, The New York Times and Washington Post since its 2014 study. Those outlets have been subject to frequent attacks by

Trump.

Pew's poll didn't specifically ask people how Trump's attacks on the media affected their attitudes. But its past surveys have shown that no factor studied affects attitudes toward the media more than political party identification and, among Republicans, supporters of Trump have an even greater animosity toward journalists, Mitchell said.

About one in five Republicans and Democrats alike say they only get news from sources they feel reflects their political beliefs, Pew said.

But there is some overlap, and perhaps some sign that common ground can be reached. Pew found that about a quarter of Democrats say they get some news from Fox, while a quarter of Republicans did the same with CNN.

Pew spoke to more than 12,000 Americans last October and November, all of them part of the organization's regular online survey panel that has been recruited through a national random sample. The margin of error is plus or minus 1.4 percentage points.



MIXTAPE

Oscar Nominations



"Stand Up" from Harriet

This moving song from the biographical Harriet Tubman film is an inspirational tribute to the Underground Railroad and the generations of families and individuals who are impacted by the slave history in America. Cynthia Erivo carries across the beautiful message of the track through her powerful voice and incredible range.



"Into The Unknown" from Frozen II

This song did not disappoint in filling the shoes of "Let It Go" as an epic sequel. It quickly became a new go-to sing along for Disney lovers as its dramatic build makes it hard to resist joining in. Idina Menzel's award-winning voice shines on this track as Elsa explores the possibilities of following a life more true to herself.

This heartwarming film based on a true story recounts the tale of a young boy who falls into a coma after nearly drowning in a frozen lake. As his parents are forced to confront the possibility of losing a child, this ballad reflects the sliver of hope that one must hold on to in the depths of despair.



"I'm Standing With You" from Breakthrough



This week:

Aubrey



Scan the album covers with the Universe Plus app to hear a sample of each song.



"(I'm Gonna) Love Me Again" from Rocketman

Elton John succeeds in delivering another track characteristic of his style and sound for the biographical movie of his life. While the movie of course features several of his hit songs, this one was written especially for the film. This soft rock song features a strong, up-tempo beat which carries the wonderful message of learning to love oneself.



"I Can't Let You Throw Yourself Away" from Toy Story 4

This uplifting track is sung to a toy named Forky, who is quite literally trying to throw himself away. It's about discovering your individual worth and seeing the good in the world. Randy Newman's distinctive voice on this track carries with it a deep and rich swing.

BYU ARTS

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BYU Young Company: Hamlet

To skate or not to skate, that is the question! What do YouTubers, skateboarders, and Shakespeare have in common? Find out with Young Company's vibrant adaptation of Hamlet. The context is modern, but the dialogue is just as the Bard wrote it.



Feb. 5-7, 12-14, 7:00 p.m.
Feb. 8, 15, 2:00 p.m. & 4:00 p.m.
Nelke Theatre



Jazz Ensemble and Syncopation

Join BYU's Jazz Ensemble and Syncopation for a night of both modern jazz and swing era music.

Wed., Feb. 5, 7:30 p.m.
de Jong Concert Hall



Contemporary Dance in Concert

Thurs.-Sat., Feb. 6-8, 7:30 p.m.
Sat., Feb. 8, 2:00 p.m.
Pardoe Theatre



Living Legends

Fri.-Sat., Feb. 14-15, 7:30 p.m.
de Jong Concert Hall



Opera Scenes

Wed.-Sat., Feb. 19-22, 7:30 p.m.
Madsen Recital Hall

Carmina Burana with BYU Choirs and BYU Philharmonic
Wed.-Thurs., Feb. 19-20, 7:30 p.m.
de Jong Concert Hall

Essentially Ellington Jazz Festival: BYU Synthesis
Fri.-Sat., Feb. 21-22, 7:30 p.m.
de Jong Concert Hall

BYU Symphonic Band
Wed., Feb. 26, 7:30 p.m.
de Jong Concert Hall

All events are ticketed.





Tweet Beat

#BYU #BYUprobs

Want to see your tweet in print? Tweet something about life around you with #BYUprobs or #BYU and hopefully it makes the cut.

Leave comments at universe.byu.edu or @UniverseBYU

@Shandhay

"at the MARB vending machines" "I think I'm in the mood for some real food, like an Uncrustable." @HeardAtBYU

@tati_the_hottie

"I have my sealing date for March 15. Now I just have to find someone to go with me." @HeardAtBYU

@emreemoody

"We met online...the only way to meet people now days" @HeardAtBYU

@rachellynn519

"I don't have a lot of money right now, so I'm going to take her on a date to Costco for free samples" @HeardAtBYU

@laney0g

Jamba Juice is playing a song from high school musical 3 and now I'm thinking everything's gonna be okay

@ShaunMcKnight8

What do you call a single @BYU student?

Provolone

@jstuart_

Walking through BYU campus and listening to Death Cab like it's 2006 this morning. Might need to eat some pizza rolls out of a vending machine to fuel the nostalgia.

@logz57

"I definitely took my time getting married, I didn't until I was almost 22. And I'm so grateful I waited." @HeardAtBYU

@samplesofsam

Everyone from my mission be falling in love with each other. Weird that just because I was super uptight and unpleasant to the elders as a missionary none of them are trying to fall in love with me???

@aspenvandi

"during a prayer in ornithology" "we're grateful for we can learn about these frickin' dope birds" @HeardAtBYU

@uku_hailey

All ochem students do is draw hexagons and cry

@itsamymiller

[during a lecture] "...and the communist leader of North Carolina..." @HeardAtBYU @byuprofessors

@elysemariek

@BYU why is it normal for friends to slowly approach you in the library and say hello like it's a secret why do we do this

@AlyssaNielson3

Guy 1: yeah dude she's engaged
Guy 2: wait really? We were dating 3 weeks ago!
@HeardAtBYU

@jawhhsh

why is byu in provo utah. if brigham young kept walking we would've ended up in san francisco. like cmon man. think of the kids.

@Joshyk

I was gonna tweet this morning about how Kanye's gospel album saved my testimony but I thought it was cheesy... but then my finance professor was playing it before class so...here's the tweet

@fremlo_

Yes I quoted Miranda Lambert and Jo March in my Capstone Project Proposal...and what about it

@JordanPruhs

My marketing professor really stands up at the front of the class and gives people "plus" or "minus" points like he's Dumbledore giving away house points in Harry Potter

@ashleynicoo

My late-for-class power walk in heels is unstoppable

@camillewihis

I've found that almost every BYU religion class actually has 2 teachers: the professor and that one RM sitting in the front row

@dani_hogan

"I have been very single since my most recent relationship, and it was so long I started to believe that I would be very single forever." "Wait, bro, how old are you?" "22, and I am dating someone seriously *now**

@BricePryson

The first thing imma do when I get to the Celestial kingdom is have a milkshake, and God already knows that. @HeardAtBYU

@bailee_moffit

"Here at BYU we get high on the spirit, we don't need drugs!" -guy at the COIN concert in the wilk @HeardAtBYU

@bellelopez

"in the celestial kingdom, we all have spotify premium." @HeardAtBYU

@faulty_humor

"Couples arguing about who is better at cuddling"
Single friend: "sometimes at night I hold myself"
@HeardAtBYU

Tweets are unedited.

READERS' FORUM

The benefits of living as an optimist

As humans, our ultimate goal in life is to find that one thing or idea that brings us genuine and consistent happiness. Life's unforeseen events can really put a dampener on our mood, but every single one of us is capable of taking control of our happiness. It does take some extra effort and a change in perspective, but I can tell you that it is so worth it. Living with an optimistic perspective on the world around you allows you to have happier days and to improve the overall quality of your life.

By definition, optimists are happier people and pessimists are more negative but that doesn't necessarily mean that they're sad and miserable all the time. Understandably, pessimists prefer to view the glass as "half empty" because of past experiences that may not have been the most joyful, but one of the greatest attributes of true optimists is that when they get knocked down, they spring right back up and begin again with a fresh start.

Some people in this life experience such extreme grief and pain that it's difficult to feel a sense of healing and to see the light at the end of the tunnel, but even then, there are ways to overcome those feelings, even if it requires more time and effort. If you take a humanistic approach to your daily life, you will keep in mind that you get to choose whether or not you can have consistent joy and happiness each day.

—Alyssa Hightower
Indianapolis, Indiana

Meetinghouse reassignment

Prayer is powerful, but how powerful is it to shield against the stench of sweat? BYU endorses sweaty church members, and it's not fair for subtle Sabbath day worship. How is this problem present? The far walk between Heritage Halls and where our wards meet causes sweat stained white shirts and barefooted women to carry their heels and enter church not only tired but filthy as well.

Those of us who live in buildings 29 and 30 of Heritage Halls (the farthest buildings from the center of campus) have to trek across campus to the seventh floor of the Tanner Building to attend our assigned wards. However, right across the street from buildings 29 and 30 is the BYU Conference Center where the students living on the other end of Heritage Halls attend church. Why purposefully locate wards farther away when there are closer options? Is BYU a shareholder of Old Spice, needing the stocks to go up? It sure smells like it.

The most logical solution is to reassign meeting houses. The reassignment would allow disciples running late to still attend church knowing they won't be wasting time walking. It would also allow students to have time before sacrament meeting to listen to prelude music and sit like proper saints should rather than running across campus.

Above all, those who assign the meetinghouses for BYU wards must prioritize their task of moving wards closer to student living. We know our bodies will be perfected one day, but please, save our noses and tired bodies now, answer our prayers and reassign the meetinghouses.

—Danelia Dust
Breese, Illinois

IN OUR OPINION

Striving for but not achieving perfection

I couldn't, but then the speaker pointed out that every time we beat ourselves up, we're essentially hurting that young child we once were. I've often beaten myself up over failing to keep up with what I believed to be the standard timeline of a young adult at BYU. In the course of my five years here, I've seen friends leave on missions, graduate, further their education, start their careers and get married. I'm genuinely happy for their accomplishments, but sometimes it's hard not to compare and feel a little behind on the clock.

Relief from that pressure comes in accepting the truth that everyone operates on different timelines. No one is behind or ahead — we're all just pursuing our own paths. Knowing this can tear down the critic within ourselves and uplift the young child. Perfection may seem far out of reach, but as long as we're putting in our efforts and heading in a good direction, we can be confident that we're in the right place.

A couple months ago, I had the opportunity to interview three mental health counselors who work for BYU Counseling and Psychological Services (CAPS). They collectively agreed that one of the most common reasons students struggle with anxiety and depression is due to the pressure of achieving perfection in a highly stressful environment. The pressure can stem from sources like expectations from family members, comparisons among friends and classmates, the heavily concentrated Church culture and perhaps most of all ourselves. I attended a fireside last semester where one of the speakers introduced a thought that struck me deeply. He projected a photo of when he was a toddler and invited us to remember the time when we were the same age. He then asked, "Could you ever imagine tearing down that young child?" I knew

—Alicia Matsuura
Universe Senior Reporter

OPINION OUTPOST

Facial recognition and privacy

The facial recognition searches that authorities conduct today are usually restricted to mug shots or driver's license photos, and there are serious concerns even about those. Now, that database has expanded exponentially, and it could envelop any American whose face has ever appeared publicly on the internet.

—Editorial Board
The Washington Post

Utah tax reform bill repealed

The past year first saw one major tax reform plan — negotiated in secret — dominate the last weeks of the 2019 legislative session before failing under attack from all sides. That was followed by a listening tour of legislators that obviously was not about listening. They spent

their barnstorming tour selling their failed ideas and assuring themselves their message was well received.

—Editorial Board
The Salt Lake Tribune

Trump's business empire

Lord knows how much cash has flowed through Trump Organization properties since Trump entered the 2016 presidential race, but the steady pace and persistent disregard for conflicts of interest seem to have numbed the nation to the president's blatant use of his office to promote and patronize his private businesses.

—Editorial Board
The Los Angeles Times

Senate impeachment trial

Contrary to popular belief, senators from both parties actually can sit at their desks in the

Coronavirus

The Chinese government on Wednesday cut train and air travel out of the city of Wuhan in a race to contain the mysterious coronavirus that has sickened more than 500 on the mainland. Quarantining a city of 11 million is a radical step, the kind democracies are loath to take, but then maybe China is determined not to relive the deadly SARS outbreak of 2003 and be blamed for a global pandemic.

—Editorial Board
The Wall Street Journal

Protests in Iran

Tweets are cheap and easy; it's policy that counts. And when it comes to the current street protests in Iran, President Trump continues to get the policy wrong, putting up travel barriers to Iranian youth even as he praises their courage.

A US administration with a moral core would know how to deal with this precarious and yet unique moment in time — and it wouldn't be with merely a tweet.

—Editorial Board
The Boston Globe

No such thing as free tax cuts

This week, Mr. Mnuchin repeated the risible fantasy that the Trump administration's 2017 tax cuts will bolster economic growth sufficiently for the government to recoup the revenue it has lost by lowering tax rates. "I'll stick with my projections that the tax deal will pay for itself," he said from Switzerland. Mr. Mnuchin's willingness to keep doing so suggests that expedience has won out over experience.

His defiance of reality probably pleased President Trump, who likes lieutenants to pretend everything is going according to plan.

—Editorial Board
The New York Times

The Opinion Outpost features opinions and commentary on the latest hot topics from state and national news sources.

WE WANT TO HEAR FROM YOU

The Universe encourages students, faculty and BYU staff to add their voice to ours by writing letters to the editor and guest editorials, or by submitting editorial cartoons.

- All letters should be submitted by email to universe.ideas@gmail.com. The topic of the letter should be included in the subject line.
- Letters should also include the author's name, hometown (for students), campus position (for faculty and staff) and phone number. Anonymous letters will

- not be published.
 - Letters should be no more than 250 words and may be edited for length, clarity or style.
 - Guest editorials should be 500 to 700 words and are encouraged from individuals with professional or academic expertise on the topic.
 - Original cartoons are also welcome.
- Opinion editor Spencer McWilliams can be reached at universe.ideas@gmail.com.

Women's basketball rebounding after slow season start

By HANNAH MINER

The first two months of the season were tough for the BYU women's basketball team after a 7-7 start had them reminiscing on the 11-3 start they owned after 14 games in 2018-19. Four games later, the team finds themselves on their longest win streak of the season while sitting four games over .500.

Although the Cougars dropped their season opener 67-50 to Washington State on Nov. 9, they recovered and earned three consecutive wins against Texas A&M Kingsville (90-38), Fresno State (71-65) and Utah State (67-50).

The home game against Utah State was the second-highest attended game in the program's history. Brenna Chase Drollinger contributed 21 points and Shalae Salmon had 11 rebounds. Sara Hamson also pulled down 11 rebounds and had six blocks.

Following their win against Utah State, the Cougars fell to Utah 77-73 in overtime. Hamson, Paisley Johnson and Babalu Ugwu all scored double digits during the game, but it was not enough to secure a victory. The Utes tied the game with three seconds remaining and then outscored BYU 10-6 in overtime. The Cougars then fell to Arizona State (60-52) and Boise State (66-55) on the road.

On Dec. 14, a home game against UVU earned the Cougars another victory; 11 three-pointers contributed to the final score of 71-57. The Cougars took the lead in the second quarter when Ugwu hit a three-pointer. Drollinger led the team with a total of 19 points in the game.

Prior to conference games, the Cougars traveled to Hawaii for the Maui Jim Maui Classic where they beat San Jose State 75-56 before falling to No. 8 Oregon State 65-34.

BYU began conference play on Dec. 28 with a 59-44 win over Loyola Marymount. Johnson led the Cougars with 19 points, while Hamson added 12 points with 12 rebounds. BYU defeated Pepperdine on Dec. 30.

Following their first two conference wins, the Cougars fell to Gonzaga (55-43) and Portland (57-48).



Hannah Miner

Paisley Johnson prepares to drive against a defender in a Jan. 2 game against Gonzaga. The BYU women's basketball team is on a five-game winning streak.

The Cougars returned to the Marriott Center on Jan. 11 to face San Diego. Before the game, their record was 7-7. The game was a close contest during the first half, but BYU ultimately pulled away with a 52-36 win, bringing their season record to 8-7.

"In order to turn our season around, because we haven't been as successful as we wanted to be, we had to get after it," Drollinger said about

the team's preparation for the game against San Diego. "We put our heads down and put the work in and that's what led to this victory today."

Johnson leads the Cougars in points scored this season, with an average of 14.5 points per game as of Jan. 24. Hamson has made 81 blocks, while Drollinger leads in steals with 38.

"We've got to get Paisley (Johnson) to slow down and not turn the ball

over so much, and same with Brenna (Drollinger)," said Coach Jeff Judkins after BYU's win over San Diego. "We've got to continue to get Sara (Hamson) to get in better shape to play in longer spurts. And we gotta have a bench like we did tonight."

Production has dropped during the 2019-20 season as compared to the 2018-19 season, with BYU's top three scorers averaging 11.0 points per

game this season in comparison to the 14.8 points per game averaged by its top three scorers last year.

The Cougars are shooting 32.9% from three-point land this year while going 38.7% overall from the field. This number is down substantially from last season as the team shot 34.5% from behind the three-point line and 42.8% overall, but has been increasing over the four-game win streak.

Basketball legend Kobe Bryant leaves deep legacy

ASSOCIATED PRESS

LOS ANGELES — Kobe Bryant inspired a generation of basketball players worldwide with sublime skills and an unquenchable competitive fire.

He earned Los Angeles' eternal adoration during his two decades as the fierce soul of the beloved Lakers, and he was respected by basketball fans from every place with a hoop and a dream, including his native Philadelphia and in Italy, his other childhood home.

Less than four years into his retirement, Bryant was seizing new challenges and working to inspire his daughters' generation through sports and storytelling when his next chapter ended shockingly early.

Bryant, the 18-time All-Star who won five NBA championships and became one of the greatest basketball players of his generation during a 20-year career all with the Lakers, died in a helicopter crash Sunday, Jan. 26, along with his daughter, Gianna. He was 41.

The basketball world and Los Angeles reacted with an outpouring of pain and disbelief. Bryant is all but certain to be elected to the Naismith Memorial Basketball Hall of Fame this year, when he is eligible for the first time.

"For 20 seasons, Kobe showed us what is possible when remarkable talent blends with an absolute devotion to winning," NBA Commissioner Adam Silver said. "He was one of the most extraordinary players in the history of our game with accomplishments that are legendary ... but he will be remembered most for inspiring people around the world to pick up a basketball and compete to the very best of their ability."

Bryant and his wife, Vanessa, had four daughters. He had been a vocal booster of women's sports since his retirement, coaching and mentoring basketball players around the world while also backing women's soccer and other endeavors.

Bryant retired as the third-leading scorer in NBA history with 33,643 points, all scored in Lakers purple and gold. The self-nicknamed Black Mamba was a prolific, gifted shooter with a sublime all-around game and a relentless, hard-edged work ethic that thrilled his fans and almost everyone else, even those who reviled him.

Taking cues from Michael Jordan, one of his idols, Bryant played with a swagger that compelled him to talk trash, to guard the toughest opponents, to play through pain and to demand the ball at the biggest moments of games.

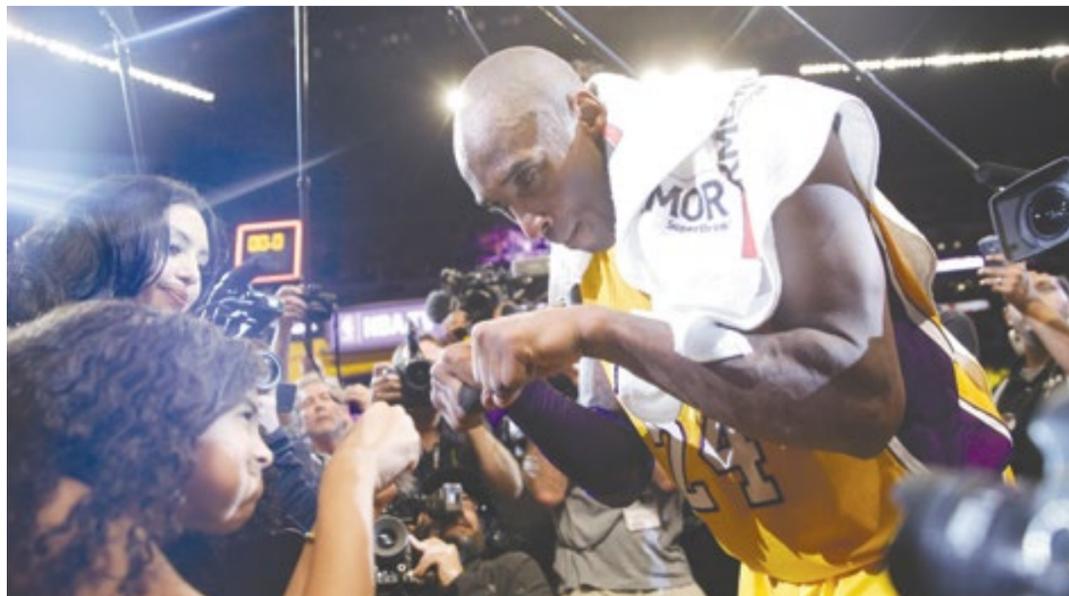
He didn't always hit them, but Bryant never stopped trying.

"He had zero flaws offensively," LeBron James said Saturday night. "He was just immortal offensively because of his skill set and his work ethic."

Bryant had been spending more time with his daughters since leaving the league. The Bryants' first daughter, Natalia, turned 17 a week ago. Bianka Bella Bryant is 3 years old, and Capri Kobe Bryant was born last June.

Gianna, better known as Gigi, had a promising youth career and a competitive pugnaciousness that reminded everybody of her dad. Bryant told Jimmy Kimmel in 2018 that Gianna wanted to play in the WNBA.

News of Bryant's death inspired an outpouring of grief around the sports world and beyond, but it was felt particularly painfully in Los Angeles, where Bryant was unquestionably the sprawling city's most popular athlete and one of its most beloved



Associated Press

Kobe Bryant fist-bumps his daughter Gianna after the last NBA basketball game of his career, against the Utah Jazz in Los Angeles on April 13, 2016.

people. Buildings from downtown to Los Angeles International Airport were illuminated in Lakers purple and gold.

"I thought he was going to live forever," Lakers great Magic Johnson told KCBS-TV. "I thought he was invincible. ... There was nobody who took more pride in putting on that Laker uniform than Kobe. Nobody. He was just special. We will miss him and we'll remember him for his greatness, but let's not forget how he impacted the world, too."

Bryant retired as the Lakers' franchise leader in points, games played, 3-pointers and steals — no small feats on a franchise that has employed

many of the greatest players in basketball history.

A two-time Olympic gold medalist with the dominant U.S. team, Bryant retired in 2016 after scoring 60 points in his final NBA game. In December 2017, the Lakers hung banners retiring his No. 8 and No. 24 jerseys in the Staples Center, an unprecedented honor.

Bryant looms large over the current generation of NBA players, most of whom grew up either idolizing Bryant or absorbing his work ethic and competitive spirit in the same way Bryant's generation learned from Jordan. Bryant exemplified and passed on that mentality to James, Stephen Curry

and the NBA's current wave of high-scoring superstars.

Bryant was a basketball superstar for his entire adult life, and he grew up from a teenager to a respected veteran in the unforgiving Hollywood spotlight.

He entered the NBA draft straight out of suburban Philly's Lower Merion High School in 1996 after a childhood spent partly in Italy, where his father, former NBA player Joe "Jellybean" Bryant, played professionally.

Bryant spoke four languages and played a major role in the NBA's international growth over his two decades in the league, traveling the world and connecting with others.

The race for the WCC is on as five teams fight for second place

By SYDNEY FLEMING

BYU's status in the West Coast Conference seems uncertain after many teams in the WCC gained unexpected losses.

ESPN bracketologist Joe Lunardi tweeted "the WCC is a whole lot better than it's ever been" after a Saint Mary's fan asked what fans should think after losing to Pacific and Santa Clara.

BYU senior point guard TJ Haws believes the conference is tough every year.

"There are always talented teams and every game is a challenge to win," Haws said. "This year, I don't know what's different, but there are a lot of very good teams and it's gonna be interesting to see how it

all plays out at the end of the year."

One thing seems certain every year: BYU, Saint Mary's and Gonzaga compete for the top three spots in conference. Except this year every team is a contender.

Atop the standings is No. 2 Gonzaga, who broke a record while playing BYU on Jan. 18 with 33 consecutive wins against WCC opponents in regular season.

BYU head coach Mark Pope said he thinks the Gonzaga team is the best in the nation.

"They're obviously the best team in America," Pope said. "My initial thought is that our guys are playing so hard and they're putting their hearts on the floor."

BYU fell to Gonzaga 92-69 on Jan. 18, the worst margin of defeat for the Cougars

this season. The Cougars shot above their average with 51% from the field versus Gonzaga's 56%. Notably, BYU only shot 30% from three, although its season average is 40.2%. This performance came after BYU shot 50% from three in its previous game versus San Diego and 50% in the game before against Portland.

Despite the blowout, Pope said he was happy to play the No. 2 team in the country.

"This Gonzaga team is a gift to our league. They just are. The fact that we get to go on the road to play the number one team in the country, and we get to do that because they're in our league, it's awesome," Pope said. "They're so good that they can play bad and still win big."

With Gonzaga at the head, the WCC has five different

teams vying for second place: BYU, Saint Mary's, Santa Clara, San Francisco and Pacific. Saint Mary's sits one game ahead of the pack at 5-2, while the other four teams are in a four-way tie for third at 4-3.

Most of these teams have beat one and lost to the other. It's unclear who will end up on top, but senior Dalton Nixon thinks BYU could have a real shot at the conference championship.

"Obviously it's going to take a lot from everyone," Nixon said. "There's no game that's a freebie, and it's gonna be a grind and it's gonna be a battle every game, and if we can have that mentality to be prepared every night, I think that we give ourselves a great shot of being able to be successful throughout the year."

The Cougars are trying to win the WCC, even though Yoeli Childs was out for 13 games this season. The senior forward averages 21.2 points and 9.7 rebounds, shooting 59.1% from the field and 54.5% from three-point range. With Childs playing the entire game, BYU is 7-1.

Coach Pope took a careful approach to Child's injury.

"We need to make sure that he is not putting himself at risk for reinjury with his finger because the cost of that would be monumental," Pope said. "We need to be really judicious and smart about it and give him the best chance to complete this season the way he wants to."

Of the five teams vying for the No. 2 ranking in the WCC, BYU ranks highest at No. 29. Saint Mary's come next at No. 34, followed by San Francisco at No. 94 and Santa Clara at No. 99. Pacific rounds out these five teams with a No. 126 rankings as of Jan. 26.

Despite these rankings, no game can be discounted when it comes to the WCC. Numbers don't seem to tell the entire story behind these teams, as



Addie Blacker

BYU forward Kolby Lee reaches to score in the face of a San Diego defender. BYU is currently part of a four-way tie for third in the WCC.

many are winning and losing games they did not expect.

Before the San Diego matchup a few weeks ago, Pope said the team's only responsibility each week is to focus on each team that is in front of them.

"We've gotta come play as hard as we can," Pope said. "This is the biggest game we've ever had this season and if we approach it that way, then we'll have a really good chance to compete. If we don't, then we don't."

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2020

BYU THE DAILY UNIVERSE

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Dilbert®

Panel 1: Dilbert: "I DON'T THINK YOUR PLAN WILL WORK." Boss: "PFFFT. OF COURSE YOU DON'T."

Panel 2: Dilbert: "YOU ARE TRYING TO SABOTAGE ME BECAUSE YOU ARE JEALOUS OF MY SUCCESS." Boss: "THANK YOU. APOLOGY ACCEPTED."

Panel 3: Dilbert: "YOU READ MINDS AS WELL AS YOU MAKE PLANS." Boss: "NOT TO YOUR FACE. PROBLEM SOLVED."

Panel 4: Dilbert: "I WAS GOING TO GIVE THIS ASSIGNMENT TO ALICE, BUT I KNOW SHE WOULD COMPLAIN ABOUT IT." Boss: "I DON'T WANT IT EITHER. DO YOU PLAN TO COMPLAIN ABOUT IT LATER?"

Panel 5: Dilbert: "I DON'T WANT IT EITHER." Boss: "DO YOU PLAN TO COMPLAIN ABOUT IT LATER?"

Panel 6: Dilbert: "NOT TO YOUR FACE." Boss: "PROBLEM SOLVED."

Peanuts®

Panel 1: Charlie Brown: "I'VE BEEN THINKING ABOUT SOMETHING..."

Panel 2: Charlie Brown: "CHARLIE BROWN HAS REALLY BEEN A DEDICATED BASEBALL MANAGER... HE'S DEDICATED HIS WHOLE LIFE TO OUR TEAM..."

Panel 3: Charlie Brown: "THEREFORE, I THINK THAT WE SHOULD GIVE HIM A TESTIMONIAL DINNER!"

Panel 4: Charlie Brown: "DO YOU THINK HE REALLY DESERVES A WHOLE DINNER?"

Panel 5: Charlie Brown: "HOW ABOUT A TESTIMONIAL SNACK?"

Panel 6: Linus: "HELLO, LINUS." Charlie Brown: "I'M TRYING TO ORGANIZE A TESTIMONIAL DINNER FOR CHARLIE BROWN..."

Panel 7: Linus: "WOULD YOU BE INTERESTED IN COMING?"

Panel 8: Linus: "WHAT'S ON TV THAT NIGHT?"

Garfield®

Panel 1: Garfield: "WOW..."

Panel 2: Garfield: "I FEEL REALLY ENERGETIC"

Panel 3: Garfield: "MAYBE A NAP WILL MAKE IT GO AWAY"

Panel 4: Garfield: "EWW! CAT FOOD SMELLS JUST AWFUL!"

Panel 5: Garfield: "ENJOY"

Panel 6: Garfield: "WHY WOULDN'T I, WITH A PRESENTATION LIKE THAT?"

Pickles®

Panel 1: Pickles: "WHO'S THAT GUY WHO USED TO BE IN THAT TV SHOW I USED TO WATCH ALL THE TIME?"

Panel 2: Pickles: "RED SKELTON?"

Panel 3: Pickles: "ERNEST BORGNINE?"

Panel 4: Pickles: "CHUCK CONNORS?"

Panel 5: Pickles: "ROD SERLING?"

Panel 6: Pickles: "SID CAESAR?"

Panel 7: Pickles: "WOW, YOUR MEMORY ISN'T VERY GOOD, IS IT?"

Panel 8: Pickles: "ARE YOU STILL TRYING TO THINK OF THAT GUY'S NAME WHO USED TO BE ON THAT TV SHOW YOU USED TO WATCH?"

Panel 9: Pickles: "YEAH, I CAN'T BELIEVE I CAN'T REMEMBER HIS NAME. HE WAS ON THAT TV SHOW FOREVER."

Panel 10: Pickles: "I GUESS IT'S LIKE SOME FAMOUS GUY ONCE SAID... FAME IS FLEETING, BUT OBSCURITY IS FOREVER."

Panel 11: Pickles: "DO YOU REMEMBER WHO SAID THAT?"

Panel 12: Pickles: "NOT A CLUE."

Non Sequitur®

Panel 1: "GOOD MAHNNIN', DEANS... SIT WHEHEHVAH YOU LIKE OFFSHOOT DINER?"

Panel 2: "THANK YOU! MY, HOW QUAINIT IT IS HERE!"

Panel 3: "YOU CAN PUT YOUR HATS AND COATS ON THE RACK AND GET COMF-TABLE"

Panel 4: "UM..."

Panel 5: "IT'S OK, HONEY. NO ONE ELSE IS HERE"

Panel 6: "I SEE... ESCAPED CRIMINALS GOIN' INCOGNITO, EH? HEH-HEH..."

Panel 7: "WELL..."

Panel 8: "...DEPENDS ON WHICH SIDE OF THE POND YOU'RE ON"

Panel 9: "OH, HARRY, STOP. HE'S JUST KIDDING... SORT OF"

Panel 10: "POND?"

Panel 11: "SO WHAT BRINGS YOU TO MAINE IN THE MIDDLE OF WINTAH?"

Panel 12: "WE'RE LOOKING FOR A NICE, QUIET PLACE TO RELOCATE AND START A NEW LIFE"

Panel 13: "OH... SO AH, YOU TWO FANOUS?"

Panel 14: "HEH-HEH... APPARENTLY NOT HERE! UNDER ALL THIS GEAR, WE'RE MEG AND HARRY"

Panel 15: "OH, MY... SORRY..."

Panel 16: "...BUT I DON'T FOLLOW POP MUSIC ANY MAN"

Panel 17: "I THINK WE HAVE A NEW RELOCATION LEADER"

Panel 18: "YES!"

Zits®

Panel 1: "UGH! THE FLU HAS RUINED ME!"

Panel 2: "ARE YOU SICK, HECTOR?"

Panel 3: "NO, BUT ARJUN, SANG-OOK AND KRISTIN ARE OUT FOR THE WEEK!"

Panel 4: "I THINK HE'S TALKING ABOUT HIS ROBOTICS TEAM."

Panel 5: "THERE ARE DWEEDS NAMED KRISTIN?"

Panel 6: "JEREMY! YOU AND PIERCE COULD BE ON MY ROBOTICS TEAM!"

Panel 7: "HUH?"

Panel 8: "THE COMPETITIONS ARE AWESOME! YOU GO HEAD-TO-HEAD WITH OTHER S.T.E.M. KIDS!"

Panel 9: "SO, US AGAINST NERDS?"

Panel 10: "DON'T WORRY, THEY WON'T MAKE FUN OF YOU."

Sudoku

Use the numbers 1-9 once in each row, column and marked grid of 9. Puzzles increase in difficulty from left to right. Solutions are at universe.byu.edu/sudoku.

		3	8						9	6				3	4						3		6		5				1			3	7
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			6	2					3	7					5	6		8				5					6	3		4	2		5

The New York Times Crossword

Edited by Will Shortz No. 1223

ACROSS

- New World natives noted for their pyramids and calendar
- Amazon or eBay
- Intriguingly foreign
- Companion of Io, Ganymede and Callisto among Jupiter's moons
- Pitcher between a starter and a closer
- Biblical birthright seller
- Biblical boat captain
- TV warrior princess
- Snow day activity
- No longer slumbering
- State religion of Iran
- Fix, as an election
- John of "Full House"
- Female sheep
- Bu\$ine\$\$ execs
- Iridescent birthstone
- Declare
- Metalworker's tool
- Chow down
- Note between fa and la
- Popular apple variety
- Prom rental
- El ___ (Pacific Ocean phenomenon)
- School grp. that might hold a walkathon
- Play a game during Hanukkah ... with a hint to 15-, 21-, 42- and 47-Across
- Russian czar known as "the Great"
- Tolkien's Lord of Rivendell
- Six-line stanza
- Afternoon nap

DOWN

- Joke that goes viral on the internet
- x or y, on a graph
- "Star Wars" character who could this clue have written?
- When twilight begins
- Zilch
- Nativity ___
- Indian megacity of 28+ million
- "Yes, mon ami"
- Ferocious dinos
- Sheltered shoreline spot
- Business sign that's flipped in the morning
- NPR's ___ Liasson
- Cone's retinal counterpart
- Big part of an elephant
- Guitar pioneer ___ Paul
- Insult, slangily
- St. Louis landmark
- Some prom hairstyles
- Insert for a blocked blood vessel
- Cough syrup qtzs.
- Hawkeye's player on "M*A*S*H"
- Bit of equipment in fishing and basketball
- Uno + due
- QB Manning
- Politically unaffiliated: Abbr.
- Wrath
- What the vengeful seek to settle
- Lose, as fur
- Comic strip "___ and Janis"
- "You hate to see it"
- "Why ___ even bother?"
- Cash in India
- Turnpike turnoffs
- Falsehood
- Politically unaffiliated: Abbr.
- Wrath

ANSWER TO PREVIOUS PUZZLE

YOUTH GOOF REBA
 ARNIE OMAR EVIL
 MADEA LITE MANE
 LORD OF THERINGS
 DRS WAX
 BADGER JOIN DDT
 ARIES POOF AURA
 RICEKRISPIESBOX
 BAEZ OTIS NEALE
 SLY ACHE AVAILLS
 OAK TRI
 PLANTWORKSHOP
 SLO TOBE AILEY
 ROVE AVON GLARE
 YEARN REED ELVES

The New York Times Crossword

Edited by Will Shortz No. 1224

ACROSS

- Offset, as costs
- Old cornball variety show with Buck Owens
- "The Misanthrope" playwright
- Beer buy
- *Bologna, e.g.
- Of a ring-shaped part of the iris
- Commencement celebrant, in brief
- *Device for holding papers together
- Renter's contract
- Alternative to café
- Larsson who wrote the "Millennium" trilogy
- Capp and Capone
- First things you learn
- *Carpenter's decorative molding
- Low in fat
- Co. in the Dow Jones index since 1979
- Museum-funding org.
- N.Y.C. museum, with "the"
- Genetic "messenger"
- Personal manner
- *Abundant harvest
- Common bar order, with "the"
- "One more thing ..." in a text
- Hesitant assent
- Yelps of pain
- On the briny
- With 63-Across, singing group ... or a hint to the ends of the answers to the four starred clues
- Española, por ejemplo
- Ballplayers with birds on their caps
- See 54-Across
- David Bowie song whose title subject is "waiting in the sky"
- Take apart, as a tapestry
- Book that might include "Silent Night"
- Managed, somehow
- Way in or out
- Lady (nickname in jazz)
- Played at a hoedown, perhaps
- ___ hall (place to play)
- Dutch-speaking Caribbean vacation spot
- Hairy Himalayans
- Bring on board
- Bring to bear, as pressure
- Of a historic period
- "Monster's Ball" Oscar winner
- Black-purple fruit from a palm tree
- Cincinnati radio station of bygone TV
- Director of 2000's "Charlie's Angels," to film fans
- In need of cheering up
- At hand

ANSWER TO PREVIOUS PUZZLE

GRAPH PLAYA BAG
 MADEA OARED JLO
 ODORLESSGAS OFF
 VEST ERIE
 TIDRESSWORKER
 BADAASS LAHR
 OMEN AMISH SLO
 HEADLESSCHICKEN
 ODS OPINE HYPE
 ALEC GRAPES
 FEARLESSLEADER
 SMUT HUNS
 TOT HAIRLESSDOG
 OJO EXPEL LAURA
 PIS READS EMERY

The New York Times Crossword

Edited by Will Shortz No. 1224

ACROSS

- Ghostbusters' character ___ Spengler
- Does the crawl, say
- Bone paralleling the fibula
- Epitaph words
- Compensate for a sprained ankle, say
- Hook's sidekick about Dr. King
- Lakeside rental
- Loses one's cool
- Liveliness
- Brit's "Baloney!"
- Pseudocultured
- Not staged
- Target of an ID thief
- Wild guess
- Impose, as a tax
- Cleaned the dishes?
- Brimless chef's hat
- Feeling of wonder

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The New York Times Crossword

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BYU hosts 11th year of semi-annual Sports Hero Day



Hannah Miner

BYU women's volleyball player McKenna Miller passes the ball to a student at Sports Hero Day.

By HANNAH MINER

On Friday, Jan. 24, Y-Serve hosted Sports Hero Day, an event that invites sixth-graders from around Utah County to come to campus and interact with some of BYU's student athletes.

Sports Hero Day is an opportunity for kids to meet current BYU athletes and learn from them and is meant to encourage students to follow their dreams and to give them hope for their futures.

During the event, students rotated in groups to different participating sports teams. The athletes spent about half an hour teaching their group the basic technique of their sport, as well as essential life skills like hard work and unity. During each rotation,

students had the chance to talk to the athletes and play games with them.

Sports Hero Day Executive Director Chad Parrish said that the goal of the event is to give kids good role models and show them that it takes more than just being good at a sport to be successful. He added that through the activities during the day, students learn important skills such as teamwork.

Head of the Sports Hero Day Volunteer Committee Sidney Jones said the event aims to help kids see that their dreams and goals can become reality. He said that by meeting college athletes, kids will be able to see that their dreams are not out of the ordinary.

"The biggest goal is to encourage the students to not give up or say that things are unattainable," Jones said.

He added that having

conversations with current college athletes could be a pivotal moment for a student and the experience will hopefully encourage them to reassess their own situations and build solid dreams. He said that it's very important that kids don't just give up because their goals seem too lofty.

BYU volleyball's Kennedy Eschenberg said that she loves participating in this event. As a future elementary school teacher, she enjoys the opportunity to interact with the kids.

"It's cool to be able to share your sport with people who are so excited, and sixth-graders are just so excited to learn and have fun," Eschenberg said.

This year is the 11th year in which BYU has hosted Sports Hero Day. The event happens twice a year and features different athletic teams and athletes each time.



Chris Bunker

A new study has shown that pollution in Utah, as seen in this inversion, can shorten life spans.

Air pollution decreasing Utahns' life spans, new report shows

By ERIKA MAGAOAY

Air pollution is taking years off of Utahns' lives according to a report from BYU environmental science professor Ben Abbott and student Isabella Errigo.

According to the report, 75% of Utah residents are losing one year of life and 23% are looking at losing five or more years.

"The findings were quite surprising," Abbott said. "There's a common misconception that only sensitive groups are affected, but air quality is affecting everyone."

The report states that because air pollution is not directly observable, it's rarely recorded as a cause of death. However, it contributes to a variety of acute and chronic health problems that result in death, including heart attack, cancer, neurological disorders and miscarriage. "It really impacts every bodily function and every human body system," Errigo said.

"We know poor air quality kills people the same way we

know smoking kills people," Errigo said. "If the air got better, we're not saying you'd have zero negative health issues, but we know poor air quality exacerbates health issues that are already there and progresses diseases and illnesses quicker."

Not only are people suffering more and dying sooner, they're dying poorer. According to the report, air pollution costs Utah 1.8 billion in both direct and indirect costs.

The study is an expert assessment comprised of research and input from over 20 researchers of public health, medicine, atmospheric science and economics, according to Abbott.

"For the last year, out of all of the available studies, national and international, no one has been able to provide these numbers," Abbott said.

Errigo is hopeful that helping people understand how air quality affects them economically and physically will motivate them to improve air quality.

"It has to be a mass movement," she said. "This won't be solved by just one or two

people taking the train."

According to the report, 100,000 to 300,000 people in the U.S are dying from air pollution each year. In comparison, 40,000 people died in traffic accidents in 2018 across the U.S. according to the National Safety Council.

A number of clean air initiatives exists to try and prevent the negative effects of air pollution, such the Clean the Darn Air policy proposal or Envision Utah's clean air recommendations. Yoram Bauman, one of the founders of Clean the Darn Air, said that requiring a carbon tax could help improve the air quality.

"It's my view as an economist that if you're going to tackle air problems, you need to provide financial incentives," Bauman said. "It's not going to happen by magic or encouraging everyone not to pollute the air."

"One point to get across is no one intervention or change is going to solve the problem," Abbott said. "It will be dozens, maybe even hundreds of different measures that work together to solve the problem."

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