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# DEAN'S MESSAGE

**IT'S MY PLEASURE** to welcome you to our 2021-2022 annual report for the Smith College of Engineering and Technology (CET). I started as the college's new dean in June 2022 and am excited to share many encouraging statistics, wonderful news stories, and highlights from last year.

Our 11 departments within CET continue to shine. In 2021, we awarded 1,622 degrees, from certificates to master's degrees. Of these, 566 went to first-generation university students, 262 went to women, and 182 went to minorities. All these metrics exceeded our 2020 numbers. Our students are at the heart of everything we

do, and we love it when they succeed at UVU and beyond. We have some lofty goals for the coming year, which will enable and encourage our college to stretch and find greater success for our students.

**1. INCREASE MEANINGFUL INTERNSHIPS AND JOBS FOR STUDENTS.** An internship should be on-the-job, real-world training. Internships are a known best practice for inquiry-based learning and high-impact practices. Internships lead to jobs for graduates.

**2. ENHANCE STUDENT LEARNING WITH FACULTY-LED PROJECTS, PROGRAMS, AND PROFESSIONAL EXPERIENCES.** Our faculty have expertise in many areas of learning. When our faculty incorporate hands-on experiences in their teaching, student learning increases. We want faculty to connect with students in a way that will help those students build confidence and skills in their chosen fields. Faculty play an integral part in the college experience, and we want CET students to graduate feeling prepared and ready for the world.

**3. COMPLETE OUR NEW ENGINEERING BUILDING IN 2025. TECHNOLOGY AND ENGINEERING CAREERS ARE ON THE RISE, AND SO IS THE NEED FOR QUALIFIED WORKERS.** The Smith Engineering and Technology Building will help fill this critical need. Fundraising for this vital building is still ongoing. The Scott M. Smith family's $25 million gift helped kick off the building's funding; $15 million went directly toward funding the construction of the building, and $10 million went toward student success. Our state legislature contributed $80 million. This new building will feature state-of-the-art labs, classrooms, and equipment, enabling our students and faculty to interact in ways not currently possible.

While these goals are just a sampling of what we hope to accomplish in the future, one thing that never changes is our focus on student success. Each of last year's 1,622 degree awardees has a story. Each graduate has goals, dreams, and hopes. We are pleased to be part of their successful path and call them UVU Wolverines.

I appreciate your support. I hope you will enjoy this year's annual report!

Dr. J. Kelly Flanagan
*Dean, Scott M. Smith College of Engineering and Technology*

> **Our students are at the heart of everything we do, and we love it when they succeed at UVU and beyond.**

# CET BY THE NUMBERS: 2021–22

## NUMBER OF DEGREES AWARDED Source: UVU Institutional Research 2021-2022


(+424 from the last report)

| | |
|---|---|
| 16 | MASTER'S |
| 802 | BACHELOR'S |
| 484 | ASSOCIATE |
| 309 | CERTIFICATES/DIPLOMAS |
| 11 | GRADUATE CERTIFICATES |

## OF THE CET GRADUATES...

**566**[6] **first-generation students** (+117 from the last report)

**262**[7] **female students** (+78 from the last report)

**181**[8] **from minority groups** (+52 from the last report)

**653**[9] **in STEM programs** (+167 from the last report)

## DEPARTMENTS WITH THE HIGHEST DEGREE COMPLETION FROM 2020-21

**INFORMATION SYSTEMS AND TECHNOLOGY:** **404**[10]
(+133 from the last report)

**AVIATION SCIENCE:** **331**[11]
(+115 from the last report)

**COMPUTER SCIENCE:** **232**[12]
(+72 from the last report)

## ALUMNI SATISFACTION (RECENT UVU GRADUATES)

# 81% OF CET ALUMNI WORKING FULL TIME

**95%**
of construction management alumni working full time in the field

**92%**[14]
of technology management alumni working full time in the field

**87%**[14]
of computer science alumni working full time in the field

**11%**[13]
working part time

**95%**
of CET alumni report "excellent" or "good" for overall college experience satisfaction

## OTHER KEY METRICS

**1,242**
students enrolled in computer science during 2021, the largest in CET history

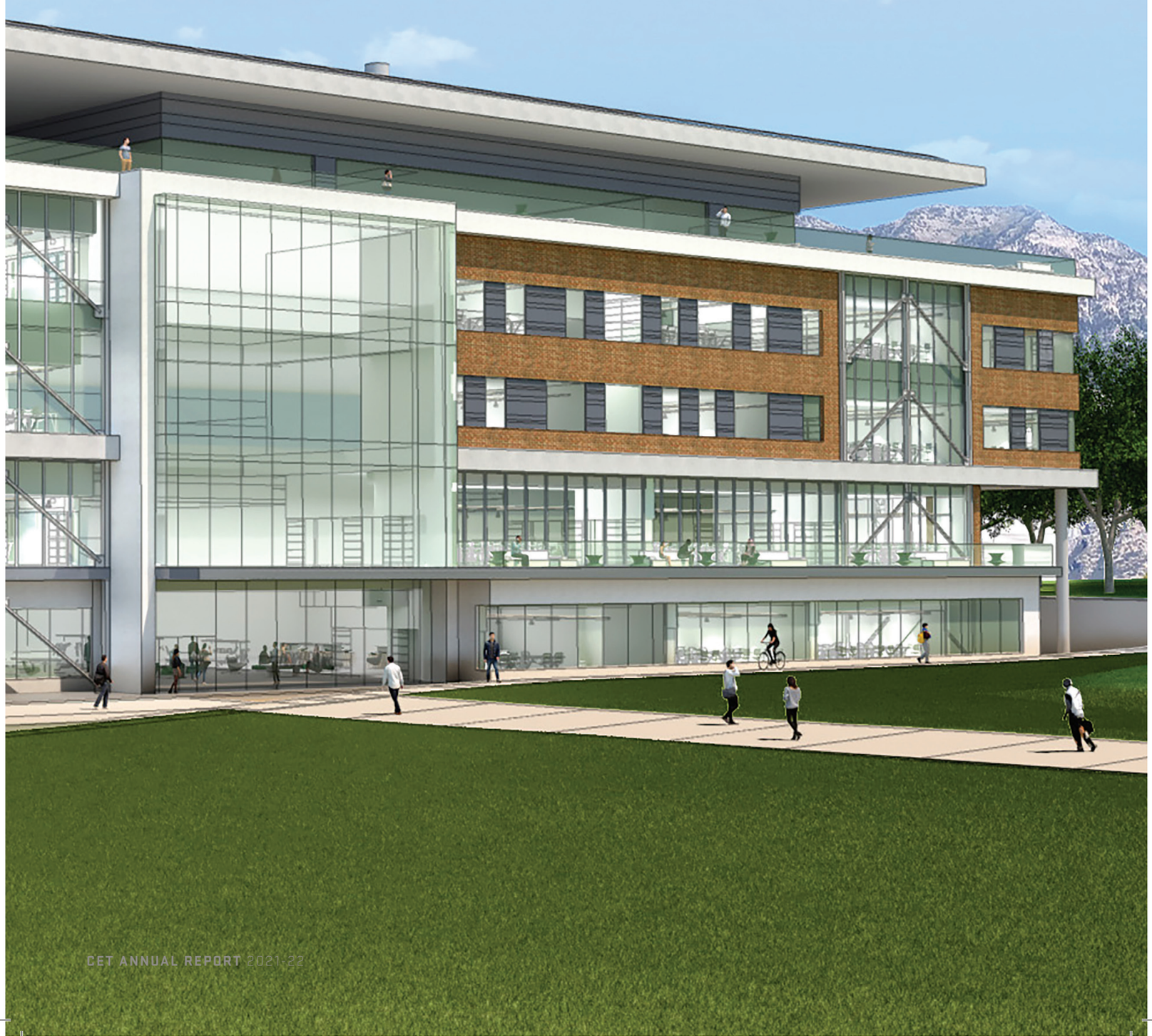
**331**
aviation science graduates make up the largest class in program history – aviation's first year in CET

**6 OF CET'S 11**
programs saw growth in female enrollment in 2021, including computer science, construction management, culinary arts, digital media, engineering technology, and transportation technology

**6,165**
CET majors enrolled in 2021, making CET the largest UVU college

**"Karen and I are delighted to support UVU and its students. Utah County is a special place for us. We want to give back in a way that will make an impact, honor my profession, and make Utah County a better place to live. We found the perfect match with UVU."**

**– SCOTT M. SMITH**



## SCOTT M. AND KAREN SMITH ANNOUNCE $25 MILLION GIFT

Qualtrics co-founder Scott M. Smith and his wife, Karen Smith, announced a $25 million gift to help fund UVU's planned engineering building. The building is part of UVU's response to the state's need for higher education to increase the number of engineers and computer scientists in Utah's workforce.

"Karen and I are delighted to support UVU and its students in this way," Scott Smith said. "Utah County is a special place for us. Our families settled in Utah County in the pioneer days, our children were raised here, and we started Qualtrics in our home in Provo. We want to give back in a way that will make an impact, honor my profession, and make Utah County a better place to live. We found the perfect match with UVU."

The Smiths' grant jump-started the private fundraising campaign to raise the $40 million needed to start construction on the 180,000-square-foot, five-story building that will be located on UVU's Orem Campus. UVU received additional support from the state legislature for this transformational building.

"We honor those who sacrificed and worked hard to bring us to this point. We now celebrate Scott and Karen Smith and their visionary gift," said UVU President Astrid S. Tuminez. "Their generosity will benefit thousands of students — many yet to be born. They will change people's lives and help fill a critical need to increase the number of engineers in Utah now and in the future."

There are more than 6,000 students in UVU's Scott M. Smith College of Engineering and Technology, and that number continues to increase. Space is at a premium as hallways have been converted to student and faculty meeting places. The new building will solve the critical need for more lab and office space, classrooms, and conference rooms and will align technical infrastructure with existing and emerging technologies as the number of students grows.

# DEEP LEARNING WITHIN THE ROBOTICS INDUSTRY

**BY** SASHA PETROV, *INFORMATION SYSTEMS AND TECHNOLOGY*

*The following is an excerpt from a student's paper for the course IT 3750, Network Security and Operations Capstone. In this paper, the student, Sasha Petrov, showed a great understanding of deep neural network (DNN) machines, the pros and cons of their use, and the mathematics behind their function. Deep learning is on the forefront of the robotics industry today, and this paper is just one example of how UVU students are being prepared with relevant knowledge for careers in the field.*

## ABSTRACT

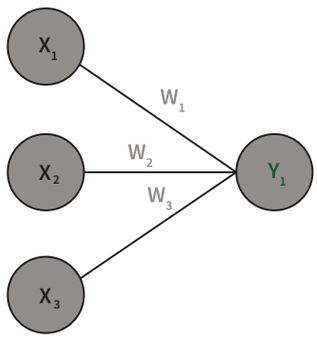
Deep learning, a machine learning technique, is gaining traction within the robotics industry. Deep learning is a subfield of machine learning and utilizes brain-like neural networks but within a machine rather than a person. While neural networks within AI have been used and improved upon within the field for years, deep learning is a subset of neural networks and is a newer AI technology. … Deep learning, like any other technology, is vulnerable to security breaches in certain environments. … While artificial intelligence can be an intimidating subject for many, it doesn't have to be. Exploring the benefits of utilizing it can be an aid in understanding why it is a tool to be used and when it should and shouldn't be. …

## NEURAL NETWORKS AND DEEP LEARNING

Neural networks take a human mind, its thought processes, and analytical abilities, and put it in a machine. The human brain works in incredible ways, and one of those ways is logical deduction from accumulating knowledge and information from the environment around us. …

While training sets are important, none of this would be possible without the math behind neural networks. Math is vital to utilizing this technology and understanding how it works. Using a combination of linear algebra, biology, and statistics, neural networks can achieve what seems impossible.

Below is an explanation of how a neural network would be derived.




$$Y_1 = \text{Activation}(b + W_1 * X_1 + W_2 * X_2 + W_3 * X_3)$$

$$f\left(b + \sum_{i=1}^{n} x_i w_i\right)$$

*Note: Equation to derive neural network*

In this case, the first formula in figure 2 is the proper equation for how the math is done for a single neuron. The second formula in figure 3 is breaking it down to show how that calculation is done step by step. …

## THE PROS OF UTILIZING DEEP LEARNING

With a new understanding of not only how deep learning works but also the security utilized behind it, what are the general pros to using this technology in the industry? While some might be very critical and wary of this type of tech, there are many reasons to use it.

From a business perspective, good deep neural network (DNN) machines can save on personnel

Deep learning is on the forefront of the robotics industry today, and this paper is just one example of how UVU students are being prepared with relevant knowledge for careers in the field.

costs. These costs tend to add up, and in cases where businesses need to hire lots of call center employees, it is not only costly but also has a lot of turnover. High turnover rates create costs for companies due to needing to get quick hires at any given moment. DNN machines help fix this problem. While yes, these machines take jobs that humans could be doing, these jobs often don't have enough employees as it is and have a heavy workload. If a company can utilize a machine to take on basic call center duties in helping customers, this means that customers are getting responses instantly instead of waiting on hold for basic questions that can be answered quickly. And while this technology is still advancing, there has been a clear spike in businesses switching to automated voice and message chats to deal with the high demand for customer service.

From a consumer perspective, these technologies allow for a more streamlined experience. Waiting on hold can often turn people away from calling for help with a problem, but if that problem can quickly be solved using a few keystrokes, it can make the experience a lot more pleasant. A delivery drone option would be an incredible way to get packages and deliveries in a timely manner. Not only would the customer get their item on time, but quick delivery would become much cheaper due to companies saving on employee costs.

#### THE CONS OF UTILIZING DEEP LEARNING

Many businesses are extremely hesitant to use this technology, and with good reason. ... There are many security concerns as well as easy hacks to cause harm using DNN machines. It is a major liability for these companies to have machines that can be so easily hacked into. Morally, it would be wrong for a business to deploy machines vulnerable to such hacks, but at the same time, it can be incredibly difficult to mitigate those vulnerabilities in a costly and timely manner.

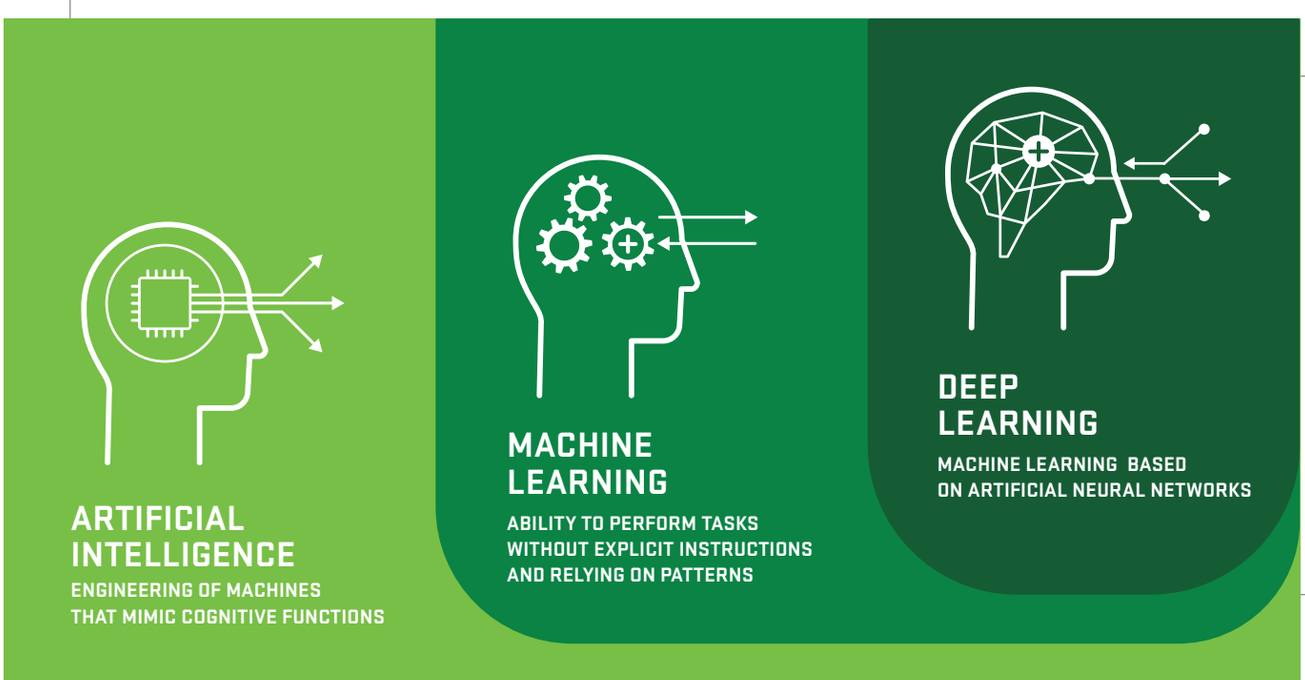
From a consumer perspective, there can be lots of risks involved in trusting in AI technology. Because of how easy it is at the moment to hack these machines, consumers are worried that information can get into the hands of the wrong people. And their concerns are warranted. As this technology becomes more widely used, it would cause vulnerable information to get into the hands of those that will use it for the wrong

reasons. For instance, if a customer hired a delivery drone to deliver their packages, it could become easier for package thieves to steal. Once they figure out how easily they can fool the drones, they could cause the drone's system to malfunction, and the customer's package can be stolen. In this case, the customer loses out, but so does the business because they need to compensate the consumer for their losses.

Another major problem is the lack of laws surrounding the use of AI. Especially the use of it on humans. The facial recognition dilemma comes into play here. At what point does the government say that this type of technology is a risk to human rights? At the moment, there are many EU countries discussing how to limit the use of this technology, but the majority of countries haven't taken any impactful steps to help keep the general public safe. …

**CONCLUSION**

Concluding all of this, robotics is a major focal point for those designing and creating deep learning algorithms. Whether those robots include the stereotypical robots people imagine or those that run within a computer, there are many aspects to this technology that are untapped but also unregulated. Many laws and regulations need to be placed on it. Unfortunately, this technology is so new that it may be a few more years before any major reforms are passed. Overall, this technology is impressive and will help propel the human race to new levels, but it should be done in an ethical and safe manner.




**“You’re going to make a lousy somebody else. You were born to be you.”**

## 2022 DIGITAL MEDIA ARTS FESTIVAL

*By Kenzie Christensen*

“Together we rise” was the general theme and what Hall of Fame speaker Dan Clark told a group of high school students during the annual Digital Media Arts Festival on May 10, 2022. Fourteen high schools and four tech centers across Utah brought their digital media students to UVU to participate in this Utah State Board of Education-sponsored event and receive awards for recent achievements and submissions.

More than 70 awards for first, second, and third place, as well as honorable mentions, were given to students in categories such as web design, 3D animation, T-shirt design, stop motion animation, and more. The students participated in the award ceremony and congratulated and recognized students who had submitted entries and given so much time and energy. Davis High School won the Spirit Award for having the most students in attendance and the most entries.

The students then had the opportunity to listen to world-renowned speaker Dan Clark, who called UVU one of the greatest schools not only in the state but in the universe. The overall theme of Clark’s speech was motivating high school students to not only be themselves but also to believe they have the capacity to accomplish something greater. “You’re going to make a lousy somebody else,” Clark said. “You were born to be you.” Clark encouraged students to seek out what they are passionate about and continue that path no matter what anyone else says. He ended his speech by saying, “It’s what we do when no one’s around that matters.”

Following the speech, students participated in small break-out rooms with interactive and engaging classes taught by UVU faculty and staff. The wide range of classes included a drone class, a filmmaking class, and a class entitled “How Being a Media Creator Can Get You More Dates.” With 10 break-out rooms, there was something for all digital art students in attendance.

## CET WELCOMES THE SCHOOL OF AVIATION SCIENCES INTO THE FAMILY

In operation since 1988, the UVU School of Aviation Sciences has trained and educated thousands of FAA-certified pilots and aviation industry professionals. As its safety record and graduate job placement rate of over 92% attest, uncompromising safety and top-notch quality are the themes of its flight training and academic curriculum. The flexibility granted through online and on-campus course delivery options makes UVU an ideal choice for anyone with an interest in aeronautical careers.

"The School of Aviation Sciences is honored and excited to be joining the highly respected professionals and staff within the CET family at UVU," said Ryan Leick, department chair of the School of Aviation Sciences. "This gives all of us such a unique opportunity to explore research and to collaborate on topics of interest and curricula that help drive career opportunities for our graduates and the economic growth of our state associated with the aerospace industry and transportation systems.

"We can now offer an interdisciplinary approach to education, training, and solutions to a variety of challenges we face regarding the future of human and cargo mobility and the technologies and infrastructure associated with them. For the first time, UVU owns the entire breadth of engineering and technology disciplines that meet the needs of the entire life cycle of transportation vehicles, technologies, infrastructure, and operations."

In 2021, its first year in CET, the School of Aviation Sciences graduated 331 students — the single biggest graduation class in the program's history.

# ROCKY MOUNTAIN POWER FOUNDATION HELPS FUND MIXED-REALITY DIGITAL MEDIA PROGRAM

*By Josh Berndt*

UVU's Scott M. Smith College of Engineering and Technology (CET) is utilizing a grant from the Rocky Mountain Power Foundation to continue blending virtual and augmented reality (VR/AR) technologies in STEM-related educational applications. This partnership allows UVU faculty to utilize the technology in a newly formed mixed-reality and simulation degree program in UVU's Department of Digital Media, with classes beginning in fall 2022.

The grant from the Rocky Mountain Power Foundation revolves around Microsoft HoloLens 2 augmented headsets, which allow users to work with virtually placed objects within a physical space. Mixed-reality technology involves blending physical and digital worlds and liberating users from screen-bound VR experiences, such as headsets that block out the physical world. UVU Digital Media professors Michael Harper, Marty Clayton, and Paul Cheney are the strategic leaders of this initiative and the new degree program. This technology adds to UVU's already deep cache of technology equipment for students to utilize in their current degrees.

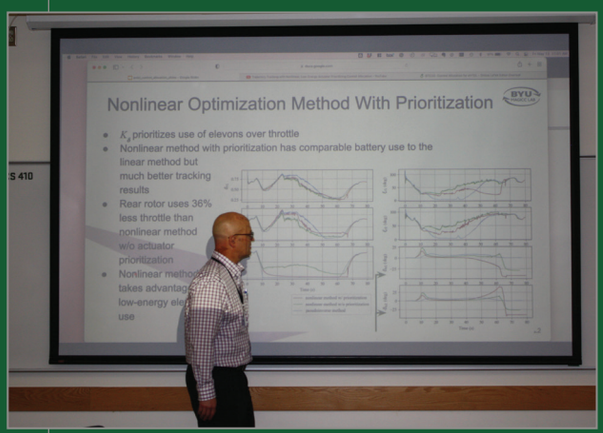
**"I love that our program has been able to give students the option to experience state-of-the-art technologies which can enhance our current reality. "**

"The next decade of extended reality technologies will form the foundation of the next 100 years of our technology-based world," Michael Harper said. "Without the help of our partners, we could not have accelerated our capabilities to meet these goals. We are extremely grateful for their help and vision as we create amazing opportunities to learn STEM and emerging technologies for our students."

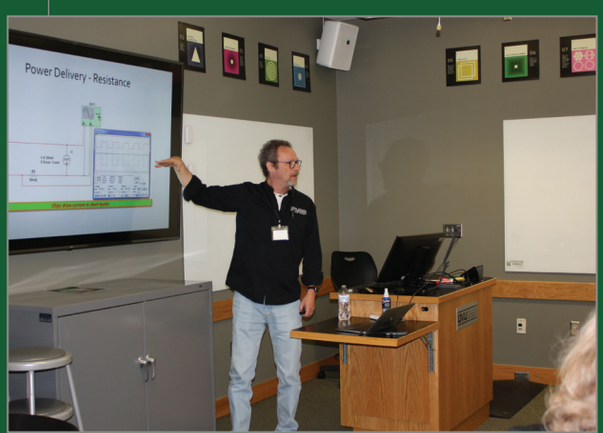
Nearly 30 students participated in UVU's first two mixed-reality essentials pilot courses offered in fall 2021 and spring 2022. These classes and this type of technology are expected to grow tenfold and greatly influence the degree program as it is built and implemented. UVU also plans to offer similar classes to Utah high school students enrolled in concurrent enrollment programs. In addition, the university hosts area high school teachers in mixed-reality teacher-training workshops.

"I love that our program has been able to give students the option to experience state-of-the-art technologies which can enhance our current reality," UVU Digital Media student Chelsea Hansen said. "Being a part of the mixed-reality essentials class increased my opportunity to learn more about the next generation of technologies that will help our world. Out of all the devices, the HoloLens 2 really caught my attention, as it fulfilled my childhood dream of holographic reality — something I think is not too far away from consumer usage. Thanks to having this hands-on experience, I feel more prepared to navigate future job markets in digital media."

# I-ETC CONFERENCE HOSTED BY CET IN 2021








**The Intermountain Engineering, Technology, and Computing Conference (I-ETC) gathers students, faculty, and industry experts across Utah to discuss current research and industry best practices for digital products.**


# WOMEN IN CONSTRUCTION

*By Kendyl Call*

According to the U.S. Bureau of Statistics, women make up only 11% of the construction industry. But with a rapid projection of over 7.25 million new jobs in 2022, construction companies are looking to hire more women, and UVU stands ready to train and deliver.

"Utah Valley University has a great construction management program that requires applicable classes as well as internships," said Shalae Johnson, a senior and a woman looking to build a career as a project director or a project manager. Johnson said her favorite parts of the program have been the competitions, where her team placed first, and her internship.

Another element of her UVU experience was being a part of the Women in Construction group. Soon to be an official club, Women in Construction looks to inspire female students with unique experiences and opportunities as they pursue careers in construction. During last year's Utah Valley Parade of Homes, Women in Construction had the opportunity to visit The House That She Built. This home in Saratoga Springs was the first-ever 100% all-women-built home. Several UVU construction technologies and Brigham Young University construction management students took a private tour of the home and met with some of the women who built it. UVU President Astrid S. Tuminez spoke to the students as well.

"I received great advice from an experienced woman in construction to learn as much as I can because, whether I want to or not, I will stand out in a crowd of guys wherever I go, and people will remember the female in construction," Johnson said. "This was a motivating moment to be competent. At first, it was intimidating to be the only woman surrounded by guys, but in time I have learned that, as a woman, I have a different perspective that adds value to construction management, and I seek to gain the respect of my peers by learning and working hard to pursue my goal as a construction manager."

**“At first, it was intimidating to be the only woman surrounded by guys, but in time I have learned that, as a woman, I have a different perspective that adds value to construction management, and I seek to gain the respect of my peers by learning and working hard to pursue my goal as a construction manager.”**




*UVU makes continuous strides toward achieving women’s equality, both on and off campus. Our Women’s Success Center recently celebrated its 10th anniversary, and organizations like Women in Construction further our efforts to #BreaktheBias and bring women to the table.*

# UVU MECHANICAL ENGINEERING STUDENT PRINTS 3D HANDS FOR CHILDREN IN NEED

*By Alessia Love*

Matt Thomas, a junior majoring in mechanical engineering at UVU, is one of those exceptional individuals who is always serving others. His last service project was printing prosthetic hands on a 3D printer for underprivileged children in the Philippines and South America.

Thomas' venture into 3D printing began in March 2020, at the beginning of the COVID-19 pandemic. Doctors and nurses everywhere were in desperate need of 3D-printed respirators with reusable filters. Being mechanically inclined, Thomas purchased materials and taught himself how to use the printer.

He organized a group of 3D printing enthusiasts to create the respirators and filters. Some had no experience, requiring Thomas to spend many hours creating digital tutorials. In addition, he produced several training videos on viruses, masks, and materials.

"Our group printed roughly 2 million devices for doctors and nurses in Utah, New York, and even Israel," Thomas said. "But I wanted to help in other ways. So, I started doing 3D printing research, and I thought, what about kids who don't have hands?"

While researching, Thomas learned about a nonprofit organization called Enabling the Future (ETF), whose grassroots mission is to recruit volunteers globally to print free 3D hands, arms, and fingers lost through war, disease, or natural disaster.

Partnering with ETF, Thomas has been able to print and assemble 14 hands for underprivileged children in the Philippines and South America. "One 3D prosthetic hand, printed and assembled, costs less than $10," he said, "but the hand means the world to the person who receives it."

ETF had given Thomas printing files, but he found them cumbersome with long processing times. Ever the engineer, he redesigned and remixed the files, which made printing and processing faster and easier, and he ultimately shared the design with ETF.

"Seeing children pick up a piece of sidewalk chalk, or pick up a water bottle, or balance on a bike when they couldn't do it before makes it worth the hard work," Thomas said. "The cherry on top is seeing what the mechanical hand does for them."

**"Seeing children pick up a piece of sidewalk chalk, or pick up a water bottle, or balance on a bike when they couldn't do it before makes it worth the hard work. The cherry on top is seeing what the mechanical hand does for them."**

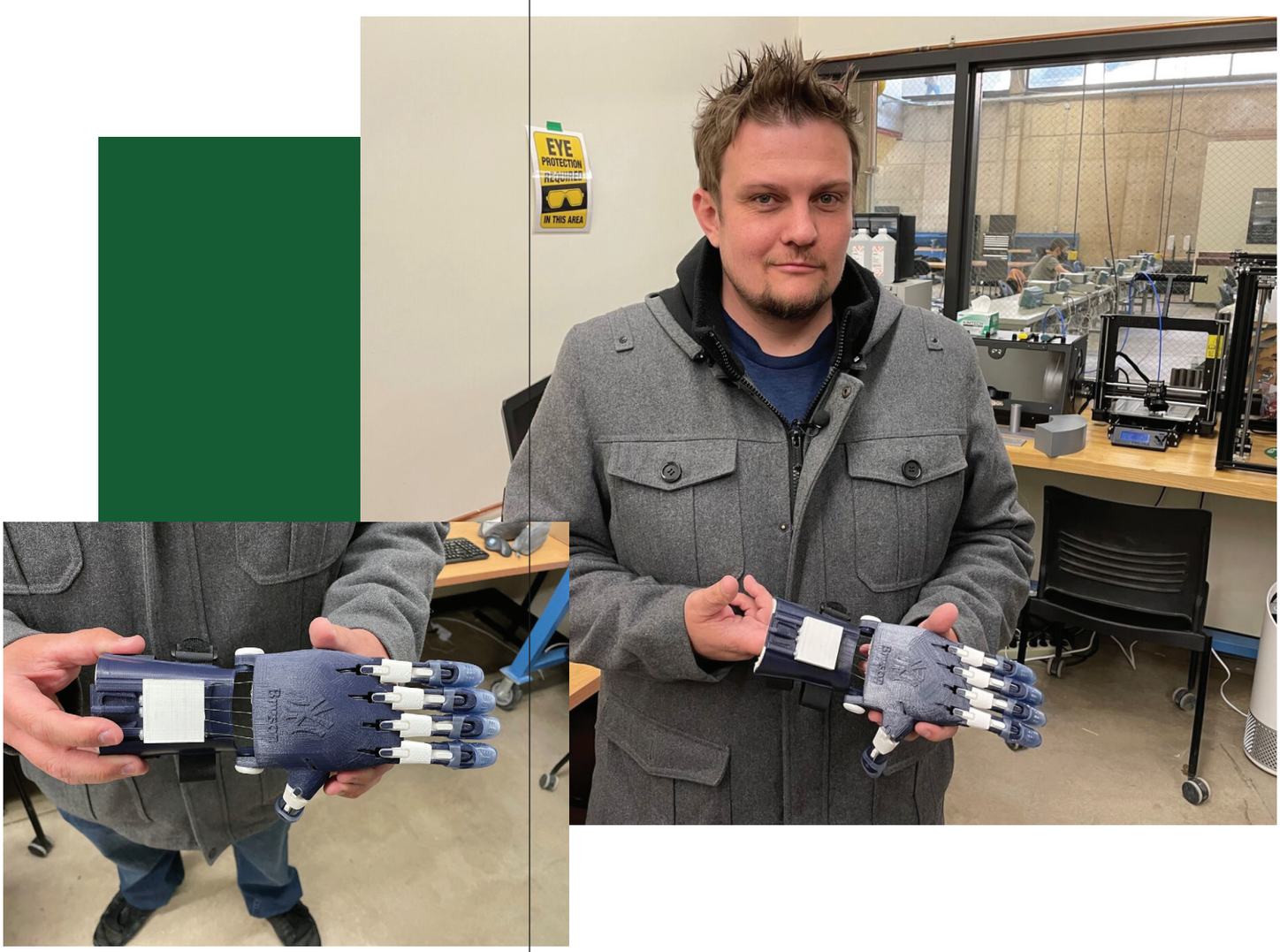
His UVU academic advisor was impressed with his efforts and suggested that he turn his work with ETF into an internship for credit. Part of his internship included conducting a study to determine if the parts and materials could be sanitized, used for food containers, or were viable in the medical field. Working with ETF, Thomas grew 10 types of bacteria, cultured them, and imaged the parts under the electron microscope. “Being able to add the microbiology portion to my mechanical engineering study has been beneficial to me and the department,” he said. “I have taken classes in anatomy, phlebotomy, microbiology, as well as medical classes. I love to learn and connect the dots.”

All was going well with school and Thomas’ service projects when tragedy struck — his mother passed away from COVID-19 vaccine complications on Mother’s Day in 2021; she was his rock and foundation.

He explained that his mother worked for years as a head nurse at the University of Utah Hospital’s Intensive Care Unit and had battled Type 1 Diabetes since her mid-teens. Many days her diabetes made her sick at work. “I watched her battle diabetes every day as she saved young lives at Primary Children’s Hospital,” Thomas said. She was vaccinated for COVID-19, and unfortunately, the vaccine jump-started her immune response, which caused a heart attack that took her life.

Thomas’ mother lived by a quote that she often repeated to him: “You’ll never regret being kind.” “I thought it was just a perfect example of her,” he said. “I have always tried to live by the quote. I’m not perfect at it, but I’m getting there. She was always there for me and guiding me.”

Thomas’ mother’s quote became his motto for service.



# TRANSPORTATION TECHNOLOGIES STUDENTS VISIT INDIANAPOLIS 500

*By Josh Berndt*

For many in the transportation industry, Indianapolis, Indiana, is considered the holy land for its iconic raceways, museums, and overall history. A select group of UVU Transportation Technology students had a rare glimpse behind the curtain of that great city with some amazing events. Professional-in-Residence Instructor Jeff Holm; professors Todd Low and Mike Elbert; and Student Media Program Director Grant Flygare guided eight students on a three-day whirlwind tour of the Performance Racing Tradeshow, the Indy 500 Speedway, and Cummins Corporate Headquarters Museum. They also had an exclusive tour of Speedway Engineering.

The 2021 trip to Indianapolis is the second time Holm and the UVU crew have taken students and introduced them to a wide variety of industry leaders. Students rubbed shoulders with lead engineers, marketing experts, and some of the biggest names in automotive, including Doug Boles, two-time Indy Car champion owner and current president of the Indianapolis Motor Speedway. Boles invited the UVU team to the Indy Speedway corporate conference room and spent over an hour with them, answering questions about the industry.

The students also enjoyed a special educational breakfast that was reserved exclusively for educators and students, where they heard a keynote from Boles and racing icon Roger Penske.

These experiences were all, in part, due to connections Holm has made over his years in the industry.


**“I’ve always wanted to give back and this opportunity is one of those chances. I’m grateful to do it.”**

“Not many have been blessed to do what I’ve done [in the automotive industry],” Holm said. “But I’ve always wanted to give back and this opportunity is one of those chances. I’m grateful to do it.”

The trip also included a special, closed-to-the-public tour of the Cummins Corporate Headquarters Museum, held specifically for UVU students. The museum demonstrates its dedication to design by showcasing industrial equipment out of the shop and displaying it as product design.

This most recent event is just a sampling of the industry experts and leaders UVU staff has secured for students. In 2019, three-time IndyCar World champion and Indy 500 winner Sam Hornish Jr. met with students as well.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CUMMINS
Special
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# PUTTING THE EXPERIENCE IN USER EXPERIENCE DESIGN

*By Billy Clouse*

UVU Digital Media loves engaged learning. It's what they do.

Mike Harper, a digital media professor at UVU, launched the idea to connect students to tech companies across the United States. One student nicknamed it "UXpeditions" to combine the field of user experience (UX) design with the actionable excitement of an expedition.

Every semester, faculty members Emily Hedrick, Mike Harper, and Dan Hatch create unique opportunities for students to travel to tech companies and work with UX designers. The students don't just meet with tech professionals, but they also work side-by-side with them on design challenges.

Past UXpeditions have taken students to San Francisco, Seattle, New York City, Amsterdam, Indianapolis, Austin, and Denver. Companies like Apple, Microsoft, IBM, Facebook, Nintendo, and the NFL have welcomed UVU students to participate in developing design ideas and strategies.

Every UXpedition has a different focus in digital media. Students are planners, designers, digital publishers, photographers, videographers, and even drone pilots.

"I go on UXpeditions for the experience I gain working in the field and connections I make with fellow students and professionals," said Mariah Foerster, UVU Class of 2022 student.

UXpeditions have opened doors for student internships and networking opportunities beyond graduation. They open up an entirely new world for students to participate at the highest levels of the industry.

*Engaged learning is at the core of the UVU student experience. Unique academic opportunities that let our students dig into their fields and gain real-world experiences contribute to our ranking as #1 in Utah for alumni earnings.*

**“I go on UXpeditions for the experience I gain working in the field and connections I make with fellow students and professionals.”**





## UVU DOMINATES SKILLSUSA IN STATE COMPETITION

*By Makenzie Christensen and Josh Berndt*

UVU showed its skill and expertise by taking first place at this year's SkillsUSA Competition on March 24-25, 2022, in Salt Lake City. This put UVU on the road to nationals in Atlanta, Georgia, from June 20 to 25, 2022. In total, UVU tallied 43 medals at the state competition (24 gold, 15 silver, and four bronze). The next-closest school was Salt Lake Community College, with 32 total medals. The students who placed first in their respective categories will compete at the national event.

"By the time a student has won first place in the state and advanced to nationals, they are deemed to be the top 1% in the nation," said Darin Taylor, UVU architecture and engineering professor and UVU SkillsUSA director. "I can't think of a better bullet point on a resumé than saying you were first in your state and perhaps one of the top three in the nation if you make the medal podium. Not only are students recognized by winning medals, but many of them also come home with thousands of dollars in prizes."

**"I realize the value that I gained going through those competitions and how it has enriched my professional life."**

SkillsUSA is an opportunity for students from both college and high school to show their expertise and talents in many different skills, ranging from computer programming to firefighting to job interviewing. More than 400,000 students from across the country compete in SkillsUSA. To be entered into this competition is a great honor, and an even bigger honor is to medal at the state and move to the national competition. Not only are the students in this competition able to continually build upon their skills and improve, but they are also able to use the awards received as great resumé builders and gain sought-after positions during school or following graduation. These students are fortunate to also network and learn from industry leaders in their fields who judge the competitions.

"SkillsUSA helped me with public speaking and being able to think on my feet in a room full of people who want to know answers to questions within minutes of being told the issue at hand," said Rob Scheon, Axis Steel president and UVU and SkillsUSA alumni. "I often reflect on my experiences competing in extemporaneous speech two years in a row and being successful in those competitions. I realize the value that I gained going through those competitions and how it has enriched my professional life."

The Smith College of Engineering and Technology (CET) sent 72 total students to the state competition in 31 categories.

**WINNERS INCLUDED:**

- Additive manufacturing: Benjamin Collier and Dallin Hansen
- Architectural design: Lindsey Barker
- Audio/radio production: Jaden Higbee and Hunter Stanley
- Cabinetmaking: Brigg Edwards
- Commercial baking: Eloise Clayton
- Computer programming: Ashton Young
- Culinary arts: Timothy Gee
- Cyber security: Kaylan Hall and Christopher Predovich
- Diesel equipment technology: Kyle Young
- Engineering technology: Jaden Bond, Jonathon Mott, and Chris Shober
- Internetworking: Robert Jones
- Mechatronics: Alex Marcum and Joseph Walker
- Motorcycle service technology: Justin White
- Power equipment technology: Schuyler Hyde
- Related technical math: Yan-Ho Hyrum Ng
- Restaurant service: Macady Hall
- Robotics and automation technology: Daniel Edlund and Toria Edwards van Muijen
- Technical drafting: Laura Richardson

UVU students continued their success at the national SkillsUSA competition in Atlanta, Georgia. UVU earned five national championship gold medals, three silver, and one bronze. The eight medals tied UVU for first place in the country in postsecondary colleges and universities.

Much like the Olympics, SkillsUSA is based on an overall ranking determined by the total medal count earned during the national competition. Over the past 21 years, UVU has consistently been ranked among the top five in the nation.

**UVU SKILLSUSA NATIONAL CHAMPIONS:**

- Architectural drafting (gold): Lindsey Barker
- Cabinetry and architectural woodwork (gold): Brigg Edwards
- Mechatronics team (gold): Alex Marcum and Joseph Walker
- Technical drafting (gold): Laura Richardson
- Computer programming (silver): Ashton Young
- Firefighting (silver): Paul Christensen
- Robotics and automation technology team (silver): Dan Edlund and Toria Edwards van Muijen
- Additive manufacturing team (bronze): Benjamin Collier and Dallin Hansen

# CONSTRUCTION TECHNOLOGIES STUDENTS COMPETE IN NATIONAL COMPETITIONS

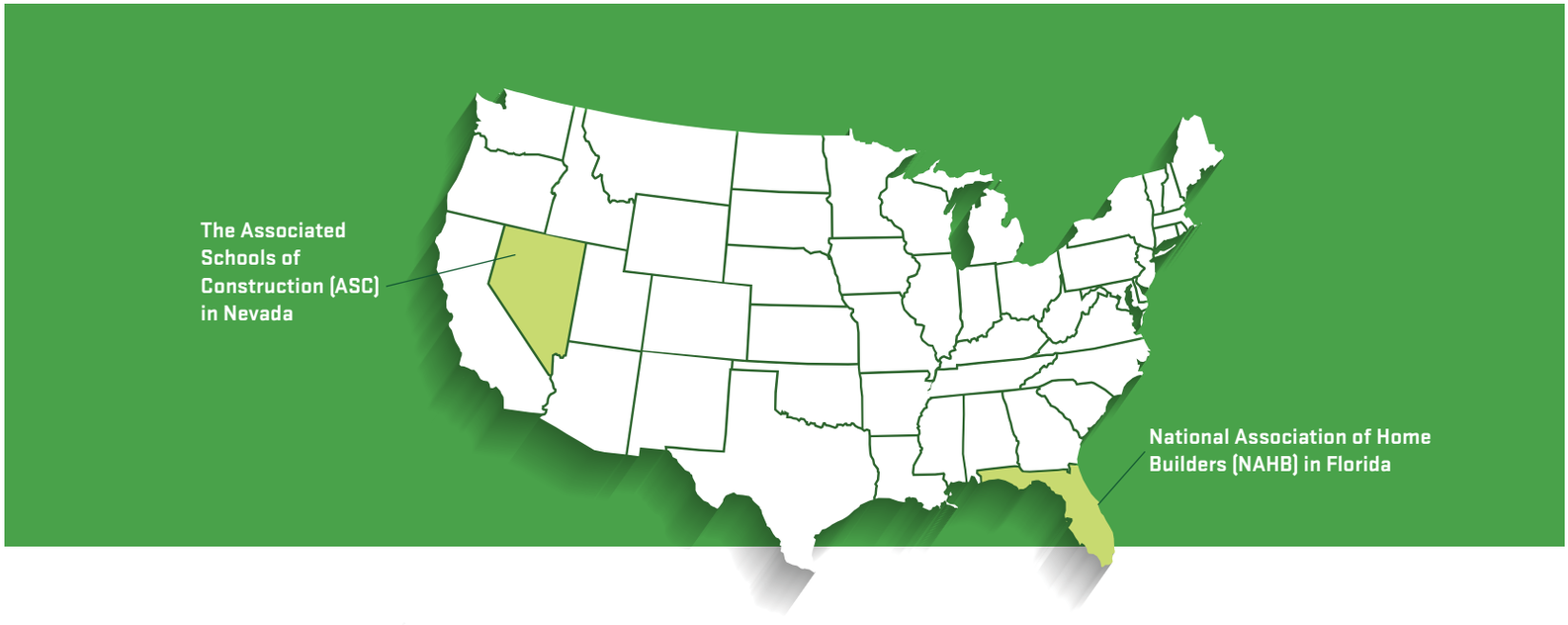
*By Kendyl Call*

UVU construction technologies students and faculty recently traveled and competed in two major national competitions: the National Association of Home Builders (NAHB) in Florida and the Associated Schools of Construction (ASC) in Nevada. Hard work and much preparation went into these out-of-state competitions, and it was a great opportunity to travel and apply construction management principles outside of the classroom with real-world problems and scenarios.

The NAHB competition requires extensive planning and research. Each fall semester, UVU construction management students spend five months creating technical plans, estimates, a project schedule, a project management plan, and an investment proposal to submit to the NAHB in December for the February competition. Then, selected team leaders and classmates present their work, along with other competitive schools around the country, to judges who are current construction industry professionals.

The ASC competition, held in Sparks, Nevada, hosted three different UVU student teams: heavy civil, commercial, and mixed-use. In this 16-hour competition, students are tasked with preparing winning plans and proposals for real-world problems recently experienced in the field. Many of the nation's top companies look to recruit future prospects in construction management programs around the U.S. from this competition. The experience and exposure students can gain at this event are extremely beneficial for their future careers.

The students chosen to compete and travel to the Florida NAHB competition this year were Cassidy Hullinger, Abdi Lucero, Austin Orr, Kade Campbell, Trevor Oldroyd, Max Flora, Tyler Moore, and Josh Torgeson. For the ASC competition in Nevada, UVU's heavy civil team featured students Josh Weight, Colton Lundell, Thomas Heathcote, Joseph Robins, Laydon Lundell, Byron Clawson, and two alternates: Bronson Young and Jordan Snow. The commercial group included Kent Hinchcliff, Landon Bingham, Austin Lucero, Shalae Johnson, Josh Burtenshaw, and Boe Archibald. Next, the mixed-use team recruited Brent Summers, Jeb Price, Hayden Lewis, Carter Benson, Jose Rangel, and Caleb Moravec, with Robert Warcup and Eric Linfield as the faculty coaches for the teams.



# UVU INFORMATION SYSTEMS & TECHNOLOGY STUDENTS TAKE FIRST PLACE IN GAME DAY ANALYTICS CHALLENGE

Since 2016, the University of Utah has conducted the Game Day Analytics Challenge to conduct an in-depth analysis of Twitter tweets on Super Bowl ads. This competition has teams of undergraduate and graduate teams from top universities in Utah, including the University of Utah, Brigham Young University, UVU, Southern Utah University, and Utah State University. This year, Alexa McKell, Sebastian Cruz, and Andrew Jensen of UVU placed first in the undergraduate competition, winning $1,000 in cash and other prizes and interviews with competition sponsors.

In the competition, students apply business analytics skills and gain practical knowledge, including data collection, data processing and cleaning, data analysis, and data visualization. Technology learned included PHP, MySQL, Python, MongoDB, Twitter API, and Domo. Teams then presented the best infographics and white paper in relation to extracted insights from the Super Bowl ads to judges from sponsored organizations, such as Swire Coca-Cola, Domo, Alteryx Sparked, Molio, Firetoss, Layton, and more.

Judging was based on the following criteria:

- Value of findings: Are the results relevant and helpful to advertisers? Does this information help inform if the marketing spend was successful?
- The complexity of findings: Judges are looking for relationships between variables and in-depth analytic conclusions.
- Quality of materials: Team deliverables should be of professional quality, well-written/designed, and easy to understand.
- Professional presentation: Judges are looking for students to deliver a business-quality poster presentation, including visual or other aids. Finalists also are expected to deliver an oral presentation in the final round.


*Alexa McKell, Sebastian Cruz, and Andrew Jensen of UVU placed first in the undergraduate competition.*

# 2022 CET EXCELLENCE AWARD WINNERS

## STUDENT AWARDS

| | |
|---|---|
| Tu Phan | Valedictorian Bachelor's Degree |
| Jeremy Michael Goff | Valedictorian Associate Degree |
| Denouement Padilla | Student Excellence – Architecture Engineering Design |
| Adam Schade | Student Excellence – Aviation |
| Ava R. Decker | Student Excellence – Computer Science |
| Timothy Joshua Seyster | Student Excellence – Construction |
| Lindsay Peck | Student Excellence – Culinary |
| Sara Runyan | Student Excellence – Digital Media |
| Taylor Seipel | Student Excellence – Engineering |
| Madeline Nelson | Student Excellence – Engineering Technology |
| Austin Richard Anderson | Student Excellence – Information Systems & Technology |
| Daniel Monreal | Student Excellence – Technology Management |
| Richard Jackson | Student Excellence – Transportation Technology |

## CET FACULTY/STAFF EXCELLENCE AWARDS

| | |
|---|---|
| Arlene Arenaz | Staff Excellence Award |
| Kellie Johnson | Staff Excellence Award |
| Tyler Bird | Faculty Teaching Excellence Award |
| Owen Peterson | Faculty Teaching Excellence Award |
| Masood Amin | Faculty Service Excellence Award |
| Emily Hedrick | Faculty Service Excellence Award |

## UVU FACULTY EXCELLENCE AWARDS

| | |
|---|---|
| Masood Amin | Faculty Excellence Award |
| Todd Leonard | Faculty Excellence Award |
| Kyle Merrill | Faculty Excellence Award |
| Saul Montano | Adjunct Excellence Award |

ENGINEERING DEPARTMENT CHAIR MOHAMMAD SHERKAT MASOUM,
CET VALEDICTORIAN TU PHAN, AND INTERIM DEAN AFSANEH MINAIE

ARCHITECTURE AND ENGINEERING DESIGN DEPARTMENT CHAIR SID SMITH,
EXCELLENCE WINNER DENOUEMENT PADILLA, AND CET INTERIM DEAN AFSANEH MINAIE

CET FACULTY EXCELLENCE DINNER AT RESTAURANT FORTE


2022 FACULTY EXCELLENCE AWARDS

# ALUMNI SPOTLIGHT:
## NICK HOLT '08, CEDAR CITY AIRPORT MANAGER

UVU was a pioneer in online schooling, and this provided me with the platform that I needed to support my family, attend flight school, and obtain an accredited degree. I have not once regretted my decision to attend UVU and I know that it is because of my education that I have been able to get to where I am at today.

Believe it or not, I didn't always think that I would attend college. I grew up in a small farm town near Area 51 in rural Nevada, where I was able to watch a variety of aircraft maneuver overhead. This included a variety of military aircraft, wildland firefighting single-engine air tankers, Bureau of Land Management helicopters, and medical helicopters. I loved driving by the larger airports in Las Vegas and Salt Lake City, where I could see all the corporate jets, too. It wasn't until I graduated high school and found aviation that I decided a college education would be worth the time and financial commitment. My wife was a huge support and wanted me to chase my dreams.

As I began flight school and researched the industry, my passion was to fly corporate jets. I learned that many of these pilots either went into the military or had accrued higher flight time by going to the airlines for the experience. At the time, many pilots were not required

**"I have not once regretted my decision to attend UVU, and I know that it is because of my education that I have been able to get to where I am at today."**

to have degrees, but the writing was on the wall, and I knew that if I had a bachelor's degree, it would be easier for me to edge out my competitors. My wife was the one who found UVU, and we both quickly agreed that it was the right fit for me.

UVU had professors that were knowledgeable about the industry and cared about the education and well-being of their students. For someone who started out not wanting to attend college, I can tell you that I really enjoyed it, and I still love reading and learning about the field of aviation. Over the years, I have remained friends with some of the current faculty, and I know this culture at UVU remains in place today.

One of my fondest memories of my time at UVU was making it far enough in my training to be able to fly the Diamond Twin Star aircraft. This consisted of a three-day course learning the aircraft's systems, and it was the first time I was able to fly an aircraft equipped with a glass cockpit. It was the cutting edge of technology and UVU gave me the opportunity to experience it firsthand.

I love flying and have owned my own aircraft, but as my family grew and my kids got older, my goals changed. It became more important for me to find a job that would allow me to stay in aviation, still be able to be home at night, and be around for holidays, birthdays, and anniversaries. The decision I made to obtain a bachelor's degree through UVU has given me the flexibility within my career to make these types of decisions. Over the last 20 years, I have enjoyed being a part of the aviation industry and today, I am currently the airport director for one of the commercial service airports in Utah, and I am actively serving on the board of the Utah Airport Operators Association.

**NICK'S ADVICE TO FUTURE UVU GENERATIONS:**

- **Get a solid education. If you can't tell, UVU has my endorsement! I know that they will be a great resource as you gain your education!**
- **Focus on the task at hand and don't try to rush things. It takes time to build the layers of knowledge that you will need to become successful.**
- **Everything has a time and a season, and if you work at it day in and day out, you're going to reach your destination.**

# ALUMNI SPOTLIGHT Q&A:
## DIANE DAVIDSON '18, SOUS CHEF OF THE TREE ROOM AT SUNDANCE

**What are some of your highlights/fondest memories from your time at UVU?**
I loved how hands-on all my classes were and how much I would learn every day. It was the first time in my life that I was excited to go to school.

**How did your education prepare you for the work you are doing now as a professional?**
The skills I learned at UVU allowed me to jump-start my career. I didn't have to start at the bottom of the restaurant industry but instead was able to take everything that I learned and use it to find not just a job but a fulfilling career.

**What advice would you give your younger self (or a new UVU student) if you were just starting at UVU?**
The restaurant industry is a demanding and tough industry, but you can do it! Just work hard and keep your knives sharp.

**Are you doing now what you thought you would be doing when you began at UVU? How did your journey change in your college years?**
When I started school at UVU, I thought I wanted to become a pastry chef. However, after taking Chef Troy's class and Chef Peter's class, I fell in love with the hot foods kitchen, and I never looked back. Now, after working extremely hard and dedicating my life to this industry, I have been able to become the sous chef of the Tree Room at Sundance.

**Who was a professor or fellow student who impacted your educational journey? How?**
I had a lot of influential people help me throughout my career and educational journey. Chef Megan, Chef Troy, and Chef Peter influenced me the most while attending UVU. I loved each of their classes and learned so much from each of them. Their passion for the industry and their knowledge of food made me want to learn more and strive to be better. After I graduated, fellow alum Chef Ashley Parkins (former chef de cuisine of the Tree Room) really took me under her wing and became my mentor. She has had a huge impact on my career and taught me to grow my skills from a cook to a chef.

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