Each academic year, we pause to acknowledge the accomplishments of our students and faculty over the prior year while looking forward to, and planning for, the years ahead.

This past year was quite exciting for the College. From having our programs recognized in key ranking reports, to cutting-edge faculty and graduate research projects, to students participating and winning in competitions on the national stage, our activities are not only supporting our own mission but the University’s path to becoming a Top Tier institution. (https://www.unlv.edu/toptier)

**A FEW OF OUR HIGHLIGHTS INCLUDE:**

- Four of our graduate programs are ranked in *U.S. News & World Report’s Best Graduate Schools*, and two of our programs ranked in the prestigious Shanghai Ranking’s Academic Ranking of World Universities (ARWU).
- The College is continuing our partnership with Lockheed Martin, working on their ORION project to put a man on Mars.
- A 3D-printed hand created by Engineering students and faculty has made its debut at all 30 Major League Baseball Parks thanks to Hailey Dawson, a young, local girl with Poland Syndrome who the College has been working with for over four years.
- In spring, the College held its largest ever Fred & Harriet Cox Senior Design Competition, showcasing prototypes of over 40 engineering and computer science student teams with over 160 students judged by eight industry partners.

These achievements are a testament to the College’s “can-do” attitude and our upward momentum.

This year, Engineering faculty are inspiring more than 2,600 undergraduates and 300 graduate students every day in the classroom and laboratories with their knowledge, experience and passion for educating the next generation of engineers, scientists and entrepreneurs. Those numbers reflect a 34% growth over the past five years, and we see no signs of it slowing.

To meet this need, we have embarked on the biggest project in the history of the Howard R. Hughes College of Engineering – the Advanced Engineering Studies Building – to provide the facilities required to support our continued growth. The new building will foster cutting-edge research in biomedical, big data and cybersecurity through integrated research facilities, increase research revenue and productivity, inspire a generation of innovators and entrepreneurs, and begin a new era of collaboration with industry and community partners.

I am extremely proud of the work our faculty, staff and students continue to do and excited about the future of the college. Thank you for your interest and support of the Howard R. Hughes College of Engineering.
CAPTION: DEAN VENKAT IN THE THOMAS BEAM ENGINEERING BUILDING’S GREAT HALL. A REPLICA OF HOWARD R. HUGHES’ H-1 RACER, IN WHICH HE SET A WORLD RECORD FOR SPEED, HANGS IN THE BACKGROUND. (UNLV CREATIVE SERVICES).
Inside the netted flight test facility at UNLV, two unmanned aerial vehicles (UAVs) glide effortlessly around each other in what appears to be an ethereal dance.

But this isn’t just for show. The UAVs are performing an important function: remotely detecting and identifying radioactive materials on the ground. Their closely
coordinated movements prevent them from crashing into one another and ensure they optimally cover the area they’re flying over.

Mechanical engineering professors Alexander Barzilov and Woosoon Yim developed these drones with radiation detection and navigation capabilities so they could carry out dynamically tracked radiation measurements where terrestrial (ground) robot deployment might not be possible—for example, in areas where there is considerable debris, steep downgrades, or deep water. Mechanical engineering doctoral student Jameson Lee, who specializes in dynamics and controls, has also been working with Yim and Barzilov on the project.

In the wake of nuclear accidents and natural disasters such as Fukushima and Hurricane Harvey, researchers like Barzilov, Yim, and Lee have increasingly turned their attention to the role robots can play in assisting emergency response teams with damage inspection, chemical detection, and even search-and-rescue efforts.

“In the wake of nuclear accidents and natural disasters such as Fukushima and Hurricane Harvey, researchers like Barzilov, Yim, and Lee have increasingly turned their attention to the role robots can play in assisting emergency response teams with damage inspection, chemical detection, and even search-and-rescue efforts.”

“With the ability to monitor over large areas, UAVs can effectively enhance the situational awareness capabilities of first responders,” Yim said.

“For this test, our UAVs are set up with sensors to detect radiation,” Barzilov added. “However, they could just as easily be equipped with chemical sensors, thermal imaging cameras—whatever type of sensor the situation calls for.”

TAKING TO THE SKY

The use of drones by hobbyists and some professionals (such as photographers) has proliferated over the past few years. In general, what they fly are remote-controlled UAVs. A “pilot” controls the movements of the vehicle with a stick and rudder. To a lesser extent, some may use vehicles which are preprogrammed to fly a certain route, adding a layer of automation.

In contrast, unmanned aerial systems (UAS) like Yim and Barzilov’s encompass an entire suite of resources that work together, including the UAV, a ground-based controller, and the system of communications connecting the two. The researchers’ system also incorporates adaptive technology, meaning the UAVs have been programmed to identify different situations and respond accordingly. They can also automatically sense, detect, and avoid fixed obstacles while in flight—including moving ones like birds and other UAVs.

On a rooftop at UNLV, a graduate student sits at the control computer monitoring two UAVs as they run through their motions. The small net-enclosed space limits the number of UAVs that can be flown at one time. With a 4.5-foot diameter, these are not small machines, but they appear to glide effortlessly all the same.

“When out in the field, the number of UAVs would increase substantially and be referred to as a “swarm.” By working in cooperative swarms, UAVs can carry out and accomplish complex missions that a single drone couldn’t easily do on its own. They can be programmed to move together or perform individual missions, carrying out their own defined task but always remaining in constant contact with each other and/or the home base to meet project goals.

In short, they collaborate to get the job done.

And since battery life and payload weight pose the two biggest challenges for UAVs, working with multiple units is not only more efficient; it also provides more accurate and comprehensive data. Unmanned ground vehicles (UGVs) can also complement the effort since one of the team’s large UAVs can only be airborne for approximately 30 minutes, whereas the battery of a UGV might last for hours. Collaborative operation of UAVs with UGVs can provide the best of both worlds, in some cases.
PLUG AND PLAY
Surprisingly, Barzilov and Yim’s project—which was supported by $893,698 in funding from Savannah River Nuclear Solutions—originally started with the task of developing interchangeable plug-and-play components for UAVs with mobile manipulation capabilities. The plug-and-play functionality of on-board sensors allows for “hot plugging,” the ability to add and remove devices (in this case, sensors) to a computer system while the computer is running and do so in a way the operating system automatically recognizes.

“It’s basically a USB-based device that anyone can use,” Barzilov said.

Plug-and-play components enable those in the field to quickly and easily swap out sensors, which becomes extremely helpful in situations where users on the ground may be first responders or experts in hazardous materials but may not know much about computer software and hardware.

Sensors can include chemical detectors, radiation detectors, and infrared cameras. The UAVs are even equipped with an automated arm that can either pick up samples and bring them back to home base or deploy sensor packages in the field.

With the radiation detection sensor Barzilov and Yim have equipped their UAVs with, the swarm can distinguish between neutron and photon radiation signatures based on signal parameters. A team-developed mapping algorithm helps create visual maps of radiation levels and hone in on the source of a leak or spill.

The team has tested its approach via a source-seeking experiment using a simulated light source, but the real test will be when they get a chance to use their UAVs and sensors in a real-world scenario. Considering Nevada’s history in the nation’s nuclear testing program, there are ample opportunities right here.

There are concerns regarding the feasibility of using robots—whether aerial or terrestrial—for prolonged periods of time in radiation-contaminated areas. High levels of radiation can cause hardware and software to malfunction, and if the radiation is strong enough, it would be almost impossible to equip a UAV with the amount of shielding necessary to protect it without adding too much weight. But it’s certainly a better alternative than jeopardizing the health of humans who might be involved in detecting such materials.

“Our systems and sensors need to be built economically, with the acceptance that we may only get a certain amount of use from them, and then they must be replaced,” Barzilov said. “In a sense, they’re designed to be disposable.”

Although their current research is focused on radiation mapping, Barzilov and Yim envision that the team’s UAV technology could easily make its way into the commercial sector, given its plug-and-play nature. In addition to disaster relief operations, UAVs equipped with various sensors can be used for routine maintenance checks and inspections around nuclear reactor sites, chemical plants, power lines, and bridges. They can help create maps for geographic regions too difficult for humans to access and monitor government land and wildlife as well.

Of course, not every company that could utilize the technology would be able to employ a Federal Aviation Administration-licensed drone pilot, but Barzilov and Yim’s technology could open up opportunities for new companies specializing in UAVs to form and provide such services—an interesting diversification prospect for Nevada’s economy.
Enrolled graduate students — **27% FEMALE, 73% MALE**

Compared to ASEE data — **25% FEMALE, 75% MALE**

*ASEE (American Society for Engineering Education)*

**Four Graduate Programs ranked**

2019 U.S. News & World Report’s Best Graduate Schools

- Civil Engineering: #89
- Electrical / Electronic / Communications Engineering: #144
- Environmental Engineering: #76
- Mechanical Engineering: #126

**GRADUATE DEGREES AND CERTIFICATES OFFERED**

- **GRADUATE — 13**
  - (including Master of Science in Transportation, Biomedical Engineering, and Materials & Nuclear Engineering)

- **CERTIFICATES — 3**
  - (including Graduate Certificates in Nuclear Criticality Safety and Solar & Renewable Energy)

**Fast Facts**

- **95%** increase in grant dollars awarded over last 5 years
- **18%** increase in research expenditures over last 5 years
- **1:6** faculty are Fellows
- **329** proposals funded in last 3 years
- **38%** increase in faculty headcount over last 8 years
- **50%** graduate students have research/teaching assistantships
- **15**

**15**

GRADUATE DEGREES AND CERTIFICATES OFFERED
Building a Better Pancreas

MECHANICAL ENGINEERING STUDENT MICHELLE QUIZON IS SEARCHING FOR THE RIGHT MATERIALS TO HELP BUILD ARTIFICIAL ORGANS THAT COULD HELP MAKE DIABETES A THING OF THE PAST

Spring 2018 commencement speaker Michelle Quizon’s sister is a Type 1 diabetic. Most of us might learn the basics to help a family member through any emergencies that could cause, and let it go at that. Quizon? She’s looking for a cure.

Quizon’s father was in the Navy, meaning the family had to move around. For the 10 years prior to coming to UNLV, Quizon grew up in South Korea. It was hard, she said, as a Filipina in a society that was largely homogeneous.

“With dark curly hair and dark skin I stood out, and not in a good way,” Quizon said. “My abilities and grades were questioned by authorities, so much so that I internalized my incompetence. It wasn’t until junior high school that my physics teacher told me I should pursue engineering.”

That was the spark she needed. She set off on the engineering path, which led her to UNLV and the Howard R. Hughes College of Engineering. What she found was a diverse campus that allowed her to blossom.

“When you come here, people do not look at you by your race or your ethnicity or any of those superficial predetermined traits you have. They look at your character. Everyone (at UNLV) wants you to succeed, and that’s definitely a change,” she said.
Of course, that spirit holds as much for extracurricular activities as it does for academics. She entered competitive powerlifting because a friend helped introduce her to the sport.

As a sophomore, Quizon approached Mohamed Trabia, associate dean for research, graduate studies and computing, about coming aboard a project. He put her to work on research involving diabetic pressure insoles.

In 2016, she returned to South Korea for a summer to study materials for artificial muscles, and wrote an honors thesis on the same subject.

Now, she continues her studies at Georgia Tech as a Ph.D. candidate to work on her research.

Eventually, she hopes to work in the academy or as a research scientist or engineer for a major diabetes company like Dexcom. She wants to help develop artificial organs, like a pancreas, that could replace damaged ones.

All because someone once said ‘yes.’

Edited article originally written by Jason Scavone and appeared on the UNLV News Center.

UNLV Outstanding Graduate Student: Zakai Olsen

Zakai Olsen is a rising star in robotics research, but his fascination with the tech-heavy field didn’t begin in a campus engineering lab.

As a teen, Zakai competed in the FIRST Lego League, a national robotics competition designed to encourage young people to consider careers in STEM fields. Mission accomplished.

After completing his undergraduate mechanical engineering degree from UNLV with a 3.96 GPA, Zakai upped the ante for his master’s degree and graduated with an impressive 4.0 GPA.

Distinguished Professor Kwang Kim said, “He is the best undergraduate and master’s student with whom I have worked during my academic career.”

Zakai’s research is focused on advancing techniques for 3D-printed soft robotics, particularly 3D-modeling of biological structures. He’s presented his work at professional conferences; written two published journal articles (with four pending) and a book chapter; and participated in research funded by NASA and the National Science Foundation, the latter of which included a summer working with peers at a university in South Korea.

Edited article originally written and published by the UNLV News Center.

Edited article originally written by Jason Scavone and appeared on the UNLV News Center.
Esports Win Brings UNLV to the Forefront of Competitive Gaming

COMPUTER SCIENCE AND ENGINEERING STUDENTS ARE HELPING THE UNIVERSITY TAKE THE LEAD

While football and hockey make their way to Las Vegas, a new athletic phenomenon is taking hold – Esports gaming. Thanks to innovative developments in their Esports programs, UNLV and Boise State were chosen to face off in the first-ever Mountain West Esports Showdown.

THE ESPORTS BOOM
Since its inception, the world of Esports has grown from a small centralized community into a world populated with millions of players – and as research shows, its own economy.

Some gamers have become so skilled that they have fan bases, sponsorships, and even professional gaming careers. According to data by Newzoo, the Esports gaming industry will reach $905 million this year and $1.1 billion by 2019.

Looking to become research authorities in a city quickly becoming the Esports capital, UNLV has integrated innovative approaches to Esports through academia and collegiate sports. In 2016, UNLV’s International Gaming Institute (IGI) launched the first-ever academic course and lab focused on synthesizing the gaming and casino industry while designing competitive events, improving the Esports experience models, and exploring big data related to gamer and fan behavior. But the Esports campus community existed well before that with the formation of 8-bit, founded in 2012 by a small group of college students.

UNLV LEVELS UP
In spring, UNLV’s 8-bit Esports team was crowned champions as they came head to head with Boise State in the first-ever Mountain West Esports Showdown. The club has 900 members online with weekly events pulling 80-100 people, making it one of the largest student organizations on campus. Students are known to practice 10-15 hours a day, some performing 360 controlled and precise movements per minute.

JULIAN LUGOD WAS ORIGINALLY A NURSING MAJOR BUT CHANGED HIS MAJOR TO COMPUTER SCIENCE AFTER JOINING THE 8-BIT ESPORTS CLUB AND FINDING HIS TRUE PATH – WORKING FOR A GAMING DEVELOPER. (UNLV CREATIVE SERVICES)

“When you’re coaching and watching other people play versus playing yourself, you witness the glory others find in succeeding. It’s a different type of pride than when you’re playing, but it’s pride nevertheless.”
Recognized for its excellence in intercollegiate athletics, Mountain West saw an opportunity to secure a foothold into the digital world as Esports gains momentum as a global industry. The teams were asked to compete in three challenges – League of Legends, Rocket League, and Overwatch. They won League of Legends and Overwatch, beating out Boise State, an officially sanctioned varsity team.

The competition was broadcasted by Twitch, a video game live-streaming service that has more than 100 million users and 2.2 million monthly broadcasters.

“Now, instead of running small-scale weekly events for the community, I have dreams of running events in convention centers that attract people from all over the world, and I’ve already succeeded in doing that twice.”

“For women especially, if you dream of becoming a gamer, the best advice I have is to dive right in. Take all of your drive, energy, and dedication and become the change you wish to see in the Esports community.”

YZZI OCAMPO, COMPUTER SCIENCE MAJOR, BECAME INVOLVED WITH 8-BIT AT ITS INCEPTION WHEN HER BROTHER, MILO, CO-FOUNDED THE CLUB. SHE WAS ONLY IN 8TH GRADE AT THE TIME. (UNLV CREATIVE SERVICES)

MECHANICAL ENGINEERING MAJOR MILO OCAMPO CO-FOUNDED 8-BIT ESPORTS WITH HIS BROTHER TO CREATE A PLACE FOR THOSE WHO NEVER FELT LIKE THEY BELONGED TO FIND COMMUNITY AND OPPORTUNITY.
Computer Science Professors Help Students Tackle Digital Crime in First-Ever UNLV GenCyber Camp

As black hat hacking plagues the digital world, the Howard R. Hughes College of Engineering hopes to contribute to a solution by teaching students about cybersecurity and how to be good digital citizens.

This summer, Computer Science Professors Dr. Ju-Yeon Jo and Dr. Yoohwan Kim directed the first ever UNLV GenCyber summer camp where students were able to learn the basics of cybersecurity and different opportunities in the field. The event was offered at no cost to students and jointly sponsored by the National Security Agency (NSA) and the National Science Foundation (NSF).

The goal of the camp is to increase awareness about cybersecurity careers and diversify its workforce through education and hands-on application. According to Cyber Defense Magazine, the need for cybersecurity professionals is at an all-time high with a projected 1.8 million job vacancies by 2022. Through programs like GenCyber, UNLV is hoping to bridge the workplace gap. UNLV’s Howard R. Hughes College of Engineering is the only location in the state of Nevada offering the camp.

Forty-four students from 29 different schools across the valley were accepted from a pool of 140 applicants. Students participated in various hands-on activities about cybersecurity covering computer basics, networking, encryption techniques, online behavior, cybercrimes, and protection. Students also visited the Mob Museum and heard from cybersecurity experts working to improve Las Vegas’ information systems.

“You go from something scrambled and random to something that actually translates to the human language and it’s really cool,” said high school student and camp participant Adrian Montenegro.

The camp concluded with a cyber-drama event in which students were able to explain different cybersecurity topics via skits to family, faculty, and staff.

“Cybersecurity is everywhere. Fortune 500 companies invested 90 billion last year alone to protect our systems and infrastructure,” explained Jo.

View media news coverage at: https://tinyurl.com/unlvgencyber
**Building the Future – Advanced Engineering Studies Building**

**RECENT UPDATES:**

- Site preparation has begun.
- Academic program needs assessment completed.
- Building committee space allocation completed.
- Preliminary architectural drawings presented.
- NSHE Board of Regents funding priority approved.

“**The Advanced Engineering Studies Building will be the epicenter of an explosion of technology innovation, entrepreneurship and economic diversification.**”

Rama Venkat, Dean, Howard R. Hughes College of Engineering

(ABOVE) THE NEW BUILDING, LOOKING FROM THE SOUTH TO THE NORTH. (LEFT) THE BUILDING WILL FEATURE A “FLEXITORIUM,” AN ADAPTABLE AUDITORIUM/CLASSROOM/EVENT SPACE MADE POSSIBLE BY A DONATION FROM BUCK AND AURORA WONG.

**YOU’RE A PART OF OUR FUTURE RIGHT NOW**

The College is currently working with donors to raise approximately $30M. The construction of the new Advanced Engineering Studies Building is about more than creating a state-of-the-art space. It’s about creating a stronger, thriving Nevada. Your support plays a key part in realizing this future. Contact us to discuss gift giving and naming opportunities.

Jack Aylor 702-895-2913, jack.aylor@unlv.edu

**THE SPACE WE BUILD IS INTEGRAL TO THE STATE WE WILL Become**
Recent Grants

COLLEGE OF ENGINEERING

Jake Baker, Professor, Electrical and Computer Engineering

PROJECT: QUANTUM CRYPTOGRAPHY DETECTOR CHIP - PHASE II
AGENCY/COMPANY: FREEDOM PHOTONICS
AMOUNT: $266,000

Shubhra Bansal, Assistant Professor, Mechanical Engineering

PROJECT: METASTABILITY AND LONG-TERM DEGRADATION IN CIGS DEVICES:
EFFECT OF ALKALI TREATMENTS, BACK CONTACT AND EMITTER LAYERS
AGENCY/COMPANY: US DEPARTMENT OF ENERGY
AMOUNT: $280,540

Jacimaria Batista, Professor, Civil and Environmental Engineering and Construction

PROJECT: BENCH-SCALE EVALUATION TO SUPPORT ZVI-ENHANCED BIOREMEDIATION (BIO-ZVI) AT GALLERIA
DRIVE (NERT) SITE, HENDERSON, NEVADA - TASK 1
AGENCY/COMPANY: RAMBOLL US CORPORATION
AMOUNT: $244,635

David James, Associate Professor, Civil and Environmental Engineering and Construction

PROJECT: EVALUATION OF APPROACHES TO DETERMINE MIXING AND ASSIMILATION
OF REUSE EFFLUENT
AGENCY/COMPANY: U.S. BUREAU OF RECLAMATION
AMOUNT: $190,000

Jaeyun Moon, Assistant Professor, Mechanical Engineering

PROJECT: CHLORINATED SOLVENTS REMEDIATION USING COST-EFFECTIVE/REUSABLE NOVEL NANOMATERIALS:
LAB SCALE APPROACHES AND PROCESS SCALING-UP
AGENCY/COMPANY: SAVANNAH RIVER NUCLEAR SOLUTIONS, LLC
AMOUNT: $189,622

Paul Oh, Lincy Professor of Unmanned Aerial Systems, Mechanical Engineering

PROJECT: INSPIRE: MOBILE-MANIPULATING UAV'S FOR SENSOR INSTALLATION,
BRIDGE INSPECTION AND MAINTENANCE
AGENCY/COMPANY: US DEPARTMENT OF TRANSPORTATION
AMOUNT: $77,000
Andreas Stefik, Associate Professor, Computer Science

**PROJECT:** COLLABORATIVE RESEARCH: ACCESSCS FOR ALL: INCLUDING STUDENTS WITH DISABILITIES IN HIGH SCHOOL COMPUTER SCIENCE

**AGENCY/COMPANY:** NATIONAL SCIENCE FOUNDATION

**AMOUNT:** $472,458

Ke-Xun (Kevin) Sun, Professor, Electrical and Computer Engineering

**PROJECT:** NEUTRON RADIATION HARDNESS OF GAN AND WIDE BANDGAP SEMICONDUCTORS

**AGENCY/COMPANY:** MISSION SUPPORT AND TEST SERVICES, LLC (MSTS)

**AMOUNT:** $316,000

Hualiang (Harry) Teng, Professor, Civil and Environmental Engineering and Construction

**PROJECT:** TIER 1 UNIVERSITY TRANSPORTATION CENTER ON RAIL INFRASTRUCTURE (RAILTEAM)

**AGENCY/COMPANY:** U.S. DEPARTMENT OF TRANSPORTATION

**AMOUNT:** $1,416,900

Zhiyong Wang, Associate Professor, Mechanical Engineering and Brendan O’Toole, Chair and Professor, Mechanical Engineering

**PROJECT:** 3D PRINTED DRILL PLATE OPTIMIZATION

**AGENCY/COMPANY:** LOCKHEED MARTIN

**AMOUNT:** $40,000

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#RebelsGive, and Rebels Make an Impact!

Join us on October 11-12 for UNLV’s inaugural day of giving, #RebelsGive! This is an opportunity for alumni, community members, students, faculty and staff to come together and make an impact on the UNLV community.

You can decide how you want to participate. You can share how the College of Engineering has impacted your life in a photo or video and tag us on social media—@unlvengineering on Facebook and Twitter—or make a financial donation.

Whether it’s $5 or $500, your support makes a difference and helps show that #RebelsGive and Engineering Rebels make an impact!

Check out rebelsgive.unlv.edu to learn more and donate. We hope you’ll join us for #RebelsGive!
In spring, a group of UNLV students gathered to donate a box depicting a three-dimensional model of the state fossil—the ichthyosaur—to the Nevada State Museum.

The students met in EED 310 – Product Design which focuses on creativity and interdisciplinary flexibility. The class is part of UNLV's unique Entertainment Engineering and Design program with educational roots in theater, art, film, architecture, and various engineering disciplines. It is a joint effort between the College of Fine Arts and the College of Engineering, offering students the opportunity to work with new and emerging technologies in a rapidly growing field.

The Friends of Nevada State Las Vegas, a local non-profit, reached out to EED Professor Si Jung Kim with a project they were hoping he could help with. Previously equipped with a small donation bowl, the Nevada State Museum needed a model to enhance the museum visitors’ experience, and donations.

After presenting the idea to his EED 310 students, several took up the challenge, volunteering their time to complete it. The group of ten included students from Entertainment Engineering and Design, Civil and Environmental Engineering, and Biology.

Once planning began, students brought forth knowledge from their respective fields and learned “the overall design process, from the literature review to implementation,” said Kim.

The group challenged themselves with designing a model that was interactive, unique to the museum, and fused with a blend of fine arts and engineering.
“The brainstorming was the most complex and satisfying part of the process,” said civil engineering freshman Ben Dancel.

The students combined their expertise and focused on prehistoric Nevada when the ichthyosaur roamed the waters. The extinct marine reptile from the Triassic period (before the dinosaurs) had a long undulating body with flippers and a pronounced jaw full of sharp teeth.

“Kids love dinosaurs and fossils,” said biology major, Edison Smith.

Once chosen as the icon, students designed a model that featured the reptile and a small human figurine. Known to grow as large as a school bus, the comparison between the sea monster and the human allows museum visitors to visualize the enormity of the creature. The design was then printed and donated by local three-dimensional printing firm, Moment 3D.

The group challenged themselves with designing a model that was interactive, unique to the museum, and fused with a blend of fine arts and engineering.

The box also includes several tracks so donors can race coins past the figures into the tank, making donations an experience in itself.

Students bore witness to the success of their project as they watched the donation box be installed and light up with color-changing LED lights.

“It’s not just what you learn in the classroom. You have to learn outside of the classroom and bring it into practice,” said Rama Venkat, dean of the Howard R. Hughes College of Engineering.

The new donation box is now proudly housed in the museum’s main corridor.

Students who participated in the project include:

Edison Smith
Colbee Jones
Margeaux Martinez
Silver Mendoza-Matute
Casey Brokaw
Ben Jairus Dancel
Sean Troop
Tre Shannon
Carolina Nunez
Kevin Brekke
Join us October 11-12 as we invite all Rebel supporters to give back to UNLV. You can share what you love about the College of Engineering on social media, or make a donation.

See inside for details.