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2022 Annual Report

University of Alabama in Huntsville

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2022 Annual Report

MISSION

The University of Alabama in Huntsville is a research-intensive, internationally recognized technological university serving Alabama and beyond. Our mission is to explore, discover, create, and communicate knowledge, while educating individuals in leadership, innovation, critical thinking, and civic responsibility and inspiring a passion for learning.

VISION

The University of Alabama in Huntsville will be a preeminent, comprehensive, technological research-intensive university known for inspiring and instilling the spirit of discovery, the ability to solve complex problems, and a passion for improving the human condition – a university of choice where technology and human understanding converge.

CORE VALUES

Integrity and Respect

We are guided by principles of ethics, treat others with deferential regard, and are civil in our interactions.

Diligence and Excellence

We work hard and are tireless in the pursuit of our goals and achieving outcomes of the highest quality.

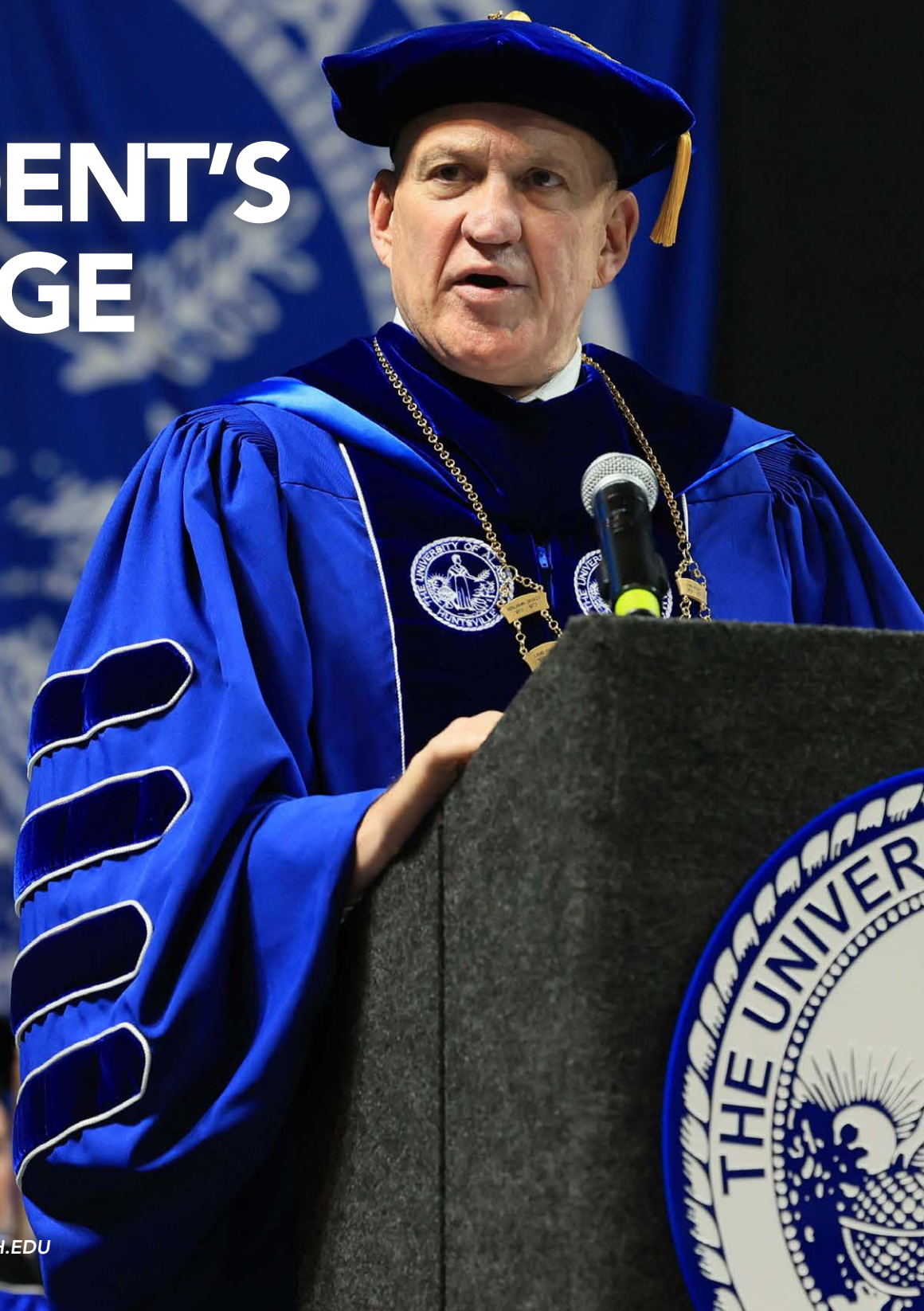
Inclusiveness and Diversity

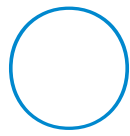
We honor the individual. We celebrate differences and use them to create unity.





PRESIDENT'S MESSAGE





One of my top priorities since coming to UAH is ensuring we are a comprehensive research university that is responsive to our community. Huntsville's growth represents a tremendous challenge to support this booming workforce need. Employers talk about how pleased they are with the quality of our graduates. They just want more of them!

This means recruiting plenty of outstanding young people. We've done a terrific job here in North Alabama, but we want to expand our reach. It's also about retaining them once they get here. How do we meet both these goals? By creating an environment at UAH that gives our students every chance to be successful.

This Spring we broke ground on an 80,000-square-foot Engineering building that will feature cutting-edge teaching and collaborative tools. Next, we'll turn our attention to the 58-acre Executive Plaza property, a site that will provide exciting amenities to enhance campus life, as well as venues to give people in our community more reasons to come see just how special we are. Housing can be a challenge for some students, so we are looking to add new residence halls as well.

We are a Carnegie R1 university, with research expenditures totaling approximately \$170 million last year alone. Five UAH programs rank in the top 20 nationally for federal funding. We do extensive work for the defense industry and in leading-edge fields, such as nuclear thermal propulsion, hypersonics, inertial fusion, integrated biometrics and Artificial Intelligence. We study weather in space to help combat the crippling effects of solar storms that can damage our power grids and digital communications networks. Our degree program in cybersecurity is first class, especially critical to this community, and our atmospheric science program is world-renowned.

Our College of Arts, Humanities and Social Sciences is a hub for interdisciplinary research and exploration. Our nurses are sought after by the local hospitals, our educators are needed by the local schools. UAH has a long and storied history of entrepreneurial spirit and innovation as well.

Great challenges make great opportunities. And UAH stands ready to meet them.

Charles L. Karr
President



UAH AT A GLANCE

University Community

9,237

STUDENTS

553

FACULTY

1,590

STAFF

47K+

ALUMNI

Incoming Freshman Class – Fall 2022

26

AVERAGE ACT

3.91

AVERAGE HS GPA

1,172

FRESHMAN CLASS

Graduates

2,310

DEGREES AND
CERTIFICATES AWARDED IN
ACADEMIC YEAR 2021-2022

93%

CAREER OUTCOME RATE
2021-2022 GRADUATES

\$62,200

HIGHEST EARLY CAREER MEDIAN
SALARY IN ALABAMA

–Payscale

#1 ROI

IN THE STATE FOR BOTH IN-STATE
AND OUT-OF-STATE STUDENTS

–Payscale

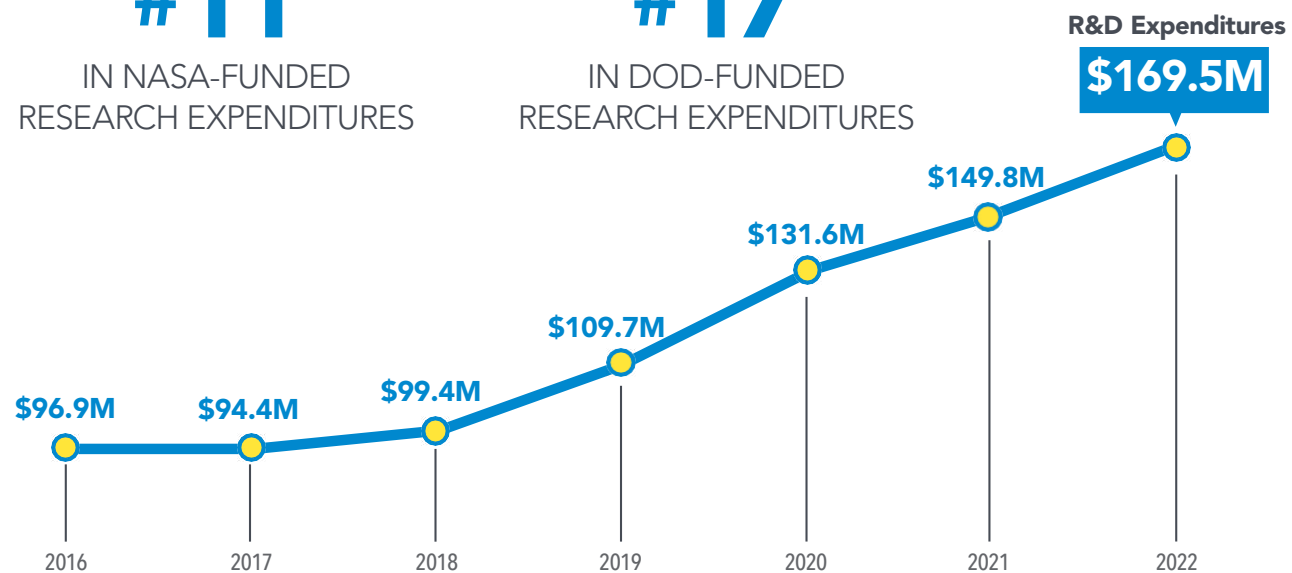
Research

#11

IN NASA-FUNDED
RESEARCH EXPENDITURES

#17

IN DOD-FUNDED
RESEARCH EXPENDITURES



National rankings for federally-funded research expenditures

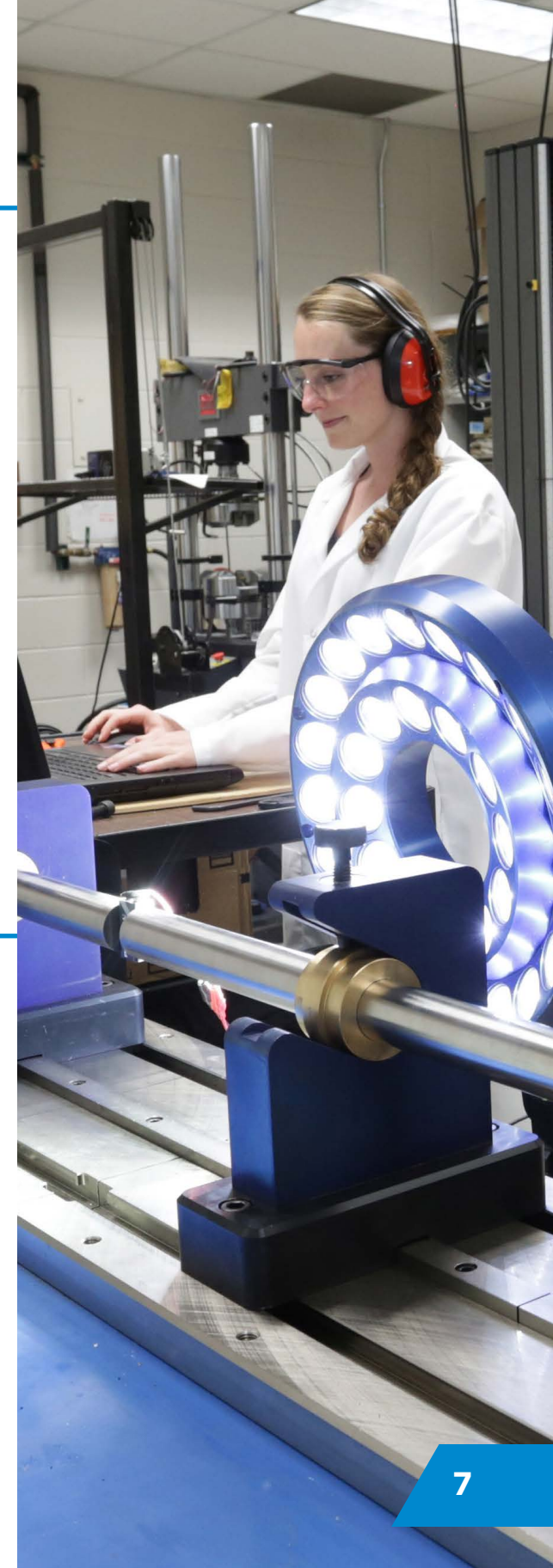
#6 AEROSPACE/AERONAUTICAL/ASTRONAUTICAL ENGINEERING

#9 COMPUTER AND INFORMATION SCIENCES

#10 ATMOSPHERIC SCIENCE AND METEOROLOGY

#12 ASTRONOMY

#18 INDUSTRIAL AND MANUFACTURING ENGINEERING



TRENDS

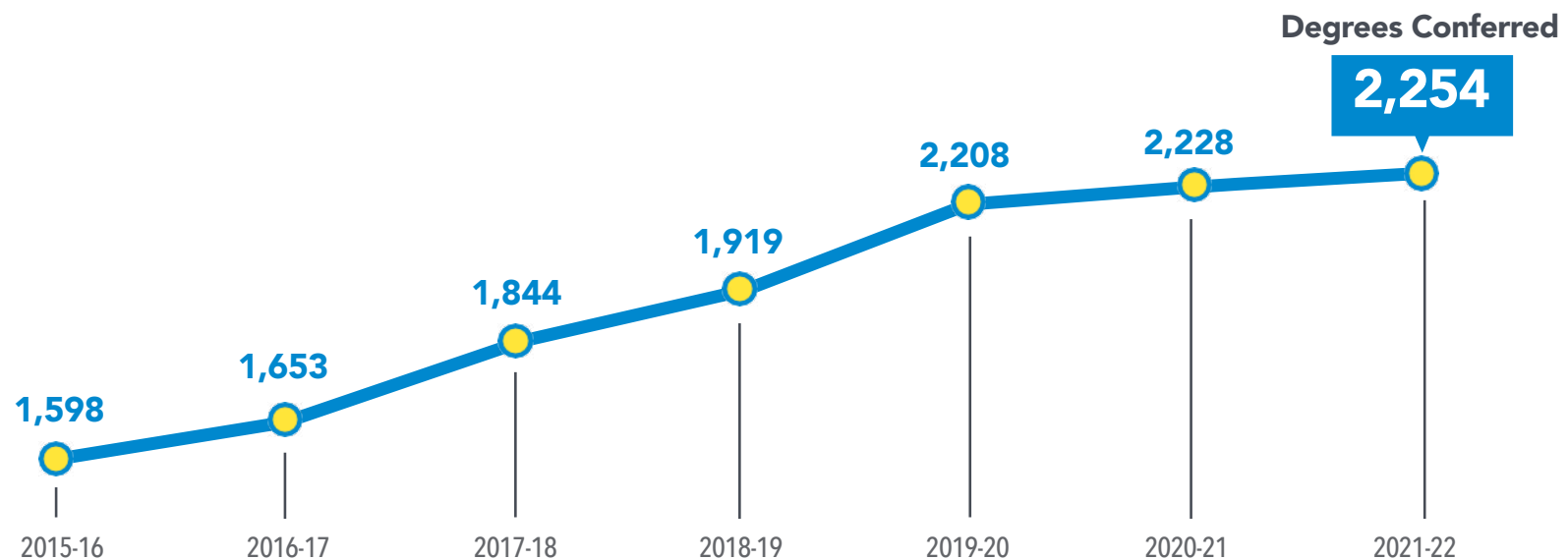
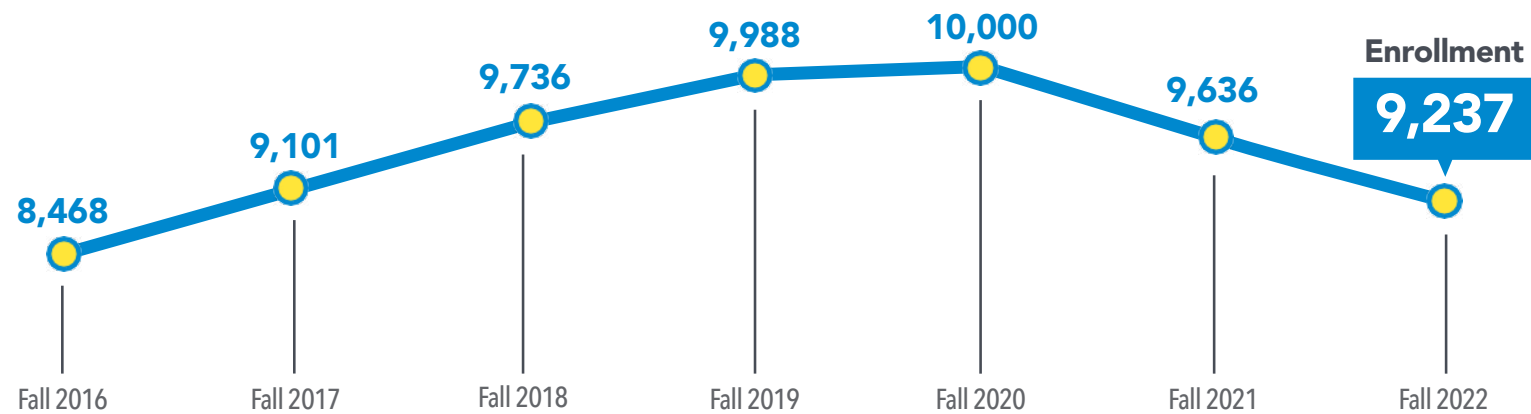


9%

INCREASE IN
ENROLLMENT SINCE
FALL 2016

41%

INCREASE IN
DEGREES CONFERRED SINCE
ACADEMIC YEAR 2015-16





WHERE WE EXPAND HORIZONS

This is the place that opens new fields of ever-expanding exploration and creativity. No matter your interests, UAH can unleash the intellectual curiosity required to meet the complex demands and challenges of the future. We welcome students at any phase of their scholastic journey to experience the unique research and educational opportunities this university offers. From early childhood to advancing through your career and beyond, UAH inspires lifelong learning and outreach to help you forge a path of innovation, growth and discovery.



K-12 Outreach Programs

- ▶ Alabama Math, Science, and Technology Initiative Host University
- ▶ Systems Management and Production Center – STEM Help Outreach Program
- ▶ Girl Scouts Cybersecurity Training
- ▶ GenCyber Camps
- ▶ Engineering Camps
- ▶ Creating Entrepreneurial Opportunities Program
- ▶ College Academy
- ▶ Shadowing Summer Community of Scholars



Undergraduate and Graduate Studies

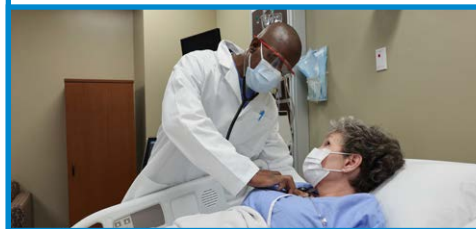
- ▶ College of Arts, Humanities, and Social Sciences
- ▶ College of Business
- ▶ College of Education
- ▶ College of Engineering
- ▶ College of Nursing
- ▶ College of Science
- ▶ Graduate School
- ▶ Honors College

From early childhood to advancing through your career—The UAH Education Continuum



Early Childhood Learning

- ▶ UAH RISE School
- ▶ Office of School Readiness
- ▶ 4-Year-Old Grant Classrooms
- ▶ Early Head Start Classrooms
- ▶ Head Start Classrooms



Community College Programs

- ▶ Visiting Student Program
- ▶ Shadowing Summer Community of Scholars
- ▶ Dual Nursing Degree Programs



Professional and Continuing Studies

- ▶ Professional Development Solutions – Certificates, Short Courses, and Customized Training
- ▶ Osher Lifelong Learning Institute

A woman with short reddish-brown hair and glasses, wearing a blue sleeveless dress, is smiling and looking down at a student. The student is wearing a grey t-shirt with a blue and yellow graphic. Another student in a blue plaid shirt is visible in the foreground. The background is a plain white wall.

ACADEMICS

UAH offers over 100 fields of study across eight colleges, in addition to 17 research centers and institutes. With a multitude of internships and co-ops available where a student's knowledge is tested and honed by an array of business and industry partners, UAH is renowned for its experiential approach to learning that provides undergraduate and graduate students alike the chance to apply career-ready skills to help them grow and succeed. Students sharpen their skills through real-life research with an absolute array of educational opportunities to choose from. Education begins in the classroom, but it doesn't end there.

FIVE STUDENTS EARN DOD SMART SCHOLARSHIP

Five UAH students have been awarded the nationally competitive Department of Defense (DOD) Science, Mathematics and Research for Transformation (SMART) Scholarship. The honorees include Kelly Campo, industrial and systems engineering; Mario Ward, mechanical engineering; Joslyn Fletcher, aerospace engineering; Jeremiah Driscoll, cybersecurity engineering; and Sydney Gothart, mechanical engineering. DOD SMART is a scholarship-for-service program in which the DOD provides a full scholarship for recipients to pursue STEM degrees that are focused on research to further the DOD's mission. For every year of funding toward an undergraduate or graduate degree, SMART Scholars commit to working that amount of time for the DOD as a civilian employee. DOD SMART offers annual summer research internships at DOD facilities across the U.S. to prepare students for full-time employment at the DOD.

COMPUTER SCIENCE GRAD WINS SCHOLARSHIP TO STUDY IN JORDAN

Jasmine Le, a computer science graduate, won a Critical Language Scholarship (CLS) to study Arabic in an intensive language setting at a university in Jordan, where she experienced a year's worth of immersive language instruction in just over three months this past summer. Sponsored by the U.S. Department of State, the CLS program is part of a U.S. government effort to expand the number of Americans studying and mastering critical foreign languages. CLS scholars gain language and cultural skills that enable them to contribute to U.S. economic competitiveness and national security. CLS provides academic instruction in 15 languages vital to U.S. national security and economic prosperity. CLS participants are considered to be "citizen ambassadors, sharing American values and promoting American influence abroad."

STUDENT DESIGN TEAM CREATES INTERACTIVE LIGHT SHOW

A student team from the Department of Electrical and Computer Engineering designed and deployed an interactive light show for visitors to the Huntsville Botanical Garden as part of a senior design project. The project was created by four engineering students, including Team Lead Steven Byrd, Software Co-Leads Savannah Flaherty and Trey Thompson, as well as Hardware Lead Tristan McCarver. The students arranged rebar poles in a grid pattern for the light show. The design that powers the project consists of passive infrared sensors linked with a Raspberry Pi which serves as the "brains" of the system. As visitors walk by, the sensors detect a thermal signature that measures heat in the infrared region of the optical spectrum, which in turn activates the interactive feature of the lighting display.

100+
AREAS OF STUDY

8
COLLEGES

93
DEGREES



UNDERGRADUATE STUDIES

U AH's innovative academic programs, support services and cutting-edge research deliver an extraordinary educational experience, as well as unique opportunities for undergraduate students to craft their futures with creativity in mind. With a vast selection of fields to choose from, the quality of our undergraduate programs helps students off to a fast start in attaining life goals and preparing to successfully join the global marketplace.

STUDENT DEVELOPS BUTTERFLY-LIKE MICRO-AERIAL VEHICLE

Graduating senior Thomas Clark is working to develop a micro-aerial vehicle that can fly like a monarch butterfly. His project took second place in the American Institute of Aeronautics and Astronautics Regional Student Conferences Region II Undergraduate Category, competing with more than 170 papers presented by students across the southeast. "The monarch is one of the most efficient fliers among insects and offers a good basis for design," Clark says. "The vehicle is entirely 3D printed. The wings were designed using computerized tomography scans of actual monarch wings that were then turned into CAD models. A fleet of these vehicles can scan an area much faster than a single large drone. This has applications in the fields of search and rescue and exploration."

EARTH SYSTEM SCIENCE STUDENT NAMED GOLDWATER SCHOLAR

Emily Wisinski, an Honors student in the Department of Atmospheric and Earth Science, was named a 2022 Goldwater Scholar. The Barry Goldwater Scholarship is given annually to applicants in the natural sciences, engineering and mathematics with the goal of providing the country with a continuing source of highly qualified scientists, mathematicians and engineers. Colleges and universities are allowed to nominate only four undergraduate students annually, making it a premier award in the U.S. Wisinski has been working on a project to create a comprehensive hail damage "swath events" database covering the Great Plains and Midwest that employs remote sensing and geographic information systems.

FOUR HONORS STUDENTS OFFERED DAAD RISE INTERNSHIPS

Four Honors students have been offered German Academic Exchange Service (DAAD) Research Internships in Science and Engineering (RISE) summer internships. The honorees include Sydney Miller, aerospace engineering and mathematical sciences; Jonathan Swindell, computer engineering; Alexandra Fedrigo, mathematical sciences; and Tom Teper, aerospace engineering. DAAD RISE internships provide opportunities for STEM sophomores and juniors to conduct specialized research in Germany for up to 12 weeks. This internship provides STEM students who want to study abroad with a hands-on research experience that will aid future graduate school, fellowship and job applications. DAAD RISE interns receive a monthly stipend and travel costs and are matched with a host university according to their area of interest. Interns also have the opportunity to attend a three-day RISE meeting in Heidelberg.



7,169
UNDERGRADUATE
ENROLLMENT

1,172
FRESHMAN CLASS

44%
HS GPA OF 4.0 OR BETTER
—2021 Freshman class

GRADUATE STUDIES

Our master's and doctoral programs include national leaders in engineering, the sciences, business, nursing, education, arts, humanities and the social sciences. Over 600 graduate degrees and certificates are awarded each year in more than 70-plus fields of interest. UAH graduate students work side-by-side with industry, science and government partners and mentors to develop real-world solutions to real-world problems. Whether a student is continuing on to graduate school directly from an undergraduate program or seeking to gain greater knowledge for advancement of their career, UAH makes it possible.

SAROJ KUMAR NAMED SSPI OUTSTANDING PROFESSIONAL AGE 35 AND UNDER

Saroj Kumar, a doctoral candidate in the Department of Mechanical and Aerospace Engineering and mission designer for advanced propulsion systems in the Propulsion Research Center, has been recognized by Space & Satellite Professionals International as one of 20 outstanding young space and satellite professionals age 35 and under. Kumar's research at UAH began with nuclear fusion propulsion and now involves nuclear thermal propulsion (NTP). He is currently working on modeling NTP systems for robotic exploration missions to the outer solar system, along with determining NTP engine parameters for NASA's Flagship and New Frontiers class robotic exploration missions. Kumar also holds a patent on a three-axis spacecraft reaction wheel actuator system design developed with his team while working on the small satellite mission.

PROJECT TO IMPROVE LUNG CANCER SCREENING FOR AFRICAN AMERICANS LED BY UAH STUDENT

Antonia D. Bates-Ford is leading a Huntsville Hospital project to overcome barriers to lung cancer screening participation experienced by African Americans. Ford is a DNP student in oncology clinical education at UAH, and she has been chosen as the project's nurse navigator. "This is the first time that UAH and Huntsville Hospital have worked together on a project like this, and I am honored that they have trusted me with being part of a body of work that has the potential to really effect change in an underserved community," she says. The investigation will involve patients at two local clinics from January through September 2023, culminating with the presentation of findings at the Society to Improve Diagnosis in Medicine conference in October.

DOCTORAL STUDENT WINS BEST STUDENT PAPER AT JANNAF

Samantha Rawlins, a doctoral student majoring in aerospace systems engineering, won best student paper after presenting at the Joint Army Navy NASA Air Force (JANNAF) Interagency Propulsion Committee Meeting. The student is investigating methods for designing and testing a safe and reliable nuclear thermal propulsion engine. Her paper, "Nuclear Thermal Propulsion System-Level Uncertainty Reduction Through Reliability-Driven Design," investigates how considering reliability early in the engineering process can impact a nuclear thermal propulsion engine's design and test program to ensure it operates successfully in space. The student is advised by Dr. Dale Thomas, a professor and eminent scholar in the Department of Industrial and Systems Engineering and Engineering Management. "When NASA flies its first nuclear thermal propulsion engine, it will have Samantha's fingerprints on it," he says.

2,068
GRADUATE
ENROLLMENT

70+
GRADUATE DEGREE AND
CERTIFICATE PROGRAMS

12
AVERAGE CLASS SIZE



RESEARCH

Launched from America's quest to the Moon and beyond, UAH has developed cutting-edge research capabilities in engineering, robotics, cybersecurity, space plasmas and astrophysics, data analytics, hypersonics, optical systems, rotorcraft unmanned systems, severe weather, atmospheric science, space propulsion and so much more. Our faculty, staff and students conduct research with NASA's Marshall Space Flight Center, the U.S. Army, the Missile Defense Agency, the Defense Intelligence Agency, the Federal Bureau of Investigation, the National Science Foundation, the National Oceanic and Atmospheric Administration, the Department of Energy, the National Institutes of Health and many others.

Dr. Lingze Duan with UAH-developed interferometer.

**5 PROGRAMS
RANKED IN THE
TOP 20
NATIONALLY**

–NSF HERD survey

\$169.5M

RECORD HIGH ANNUAL
R&D EXPENDITURES

**R1 STATUS
“VERY HIGH
RESEARCH
ACTIVITY”**

–Carnegie Classification

FAA GRANT HELPS COORDINATE DRONES DURING DISASTER RESPONSES

The Federal Aviation Administration (FAA) awarded the Rotorcraft Systems Engineering and Simulation Center a three-year, \$828,070 grant to better coordinate drone responses to natural and human-made disasters. UAH will collaborate with four other universities to focus on procedures that will integrate unmanned aircraft systems (UAS) operators with federal, state and local disaster preparedness and emergency response organizations to ensure proper coordination during emergencies. For example, to support hurricane relief and recovery, this research will tie together flood modeling and UAS missions in order to measure rising water, as well as operate these systems for wildfire response. Investigations will also focus on delivery of data products for incident commanders, such as photos, videos and geographic data about natural and human-made disasters and emergencies like wildfires, hurricanes and train derailments.

NSF CAREER GRANT AIMS TO IMPROVE SEVERE WEATHER RESILIENCE

Dr. Abdullahi Salman, an assistant professor of civil engineering, was awarded a \$505,000 National Science Foundation (NSF) Faculty Early Career Development (CAREER) grant to research methods of improving hurricane and severe weather resilience of coastal communities. “The emphasis is on the impact of coastal hazards, particularly hurricanes, on electric power systems, water networks and road networks,” Dr. Salman says. “These systems are interdependent. For example, water-treatment plants, pumping stations and storage tanks require electricity to function. So, it is crucial to consider the interdependency and cascading failures in modeling system performance and resilience.” The research will examine how socioeconomic factors like income, age and health status influence resilience improvement and post-disaster recovery planning.

TEXTING IS KEY TO FIRST RESPONDER TEAM SUCCESS

Dr. Kristin Weger, an assistant professor of psychology, is the principal investigator leading research sponsored by UAH’s New Faculty Research Program into how first responder teams can better grasp an emergency situation when they use continual, clear texting of factual information. Experienced emergency responders most frequently make situational awareness errors because of perceptions resulting from pertinent factual information not being shared, or that is inaccurate or incomplete. Data collected from student teams as they texted each other during a Network Operation Fire simulation showed the more accurate and digestible the message, the quicker the meaning can be processed to inform decision-making. Sharing basic factual information about team elements – such as location of first responders to others and current capabilities and resources – aids situational awareness and action-taking.



BEYOND EARTH

Reaching for the stars is our lasting and future legacy, and our university is the focal point for doing just that. Whether it's research on space plasma and its applications closer to home, plumbing the mysteries of solar weather, helping to reveal new astronomical wonders or supporting the Artemis missions to the Moon and Mars, UAH has the proven academic rigor and beneficial partnerships with the aerospace industry, the government and other institutions necessary to carry on this vital mission. This continuing thirst for new knowledge and experiences beyond our home world makes a positive impact globally.

Image credit: NASA

UAH ALUMNUS GUIDES SLS TO SUCCESSFUL ARTEMIS I LAUNCH

Mechanical engineering alumnus John Honeycutt, who has shepherded the NASA Space Launch System (SLS) since 2015 as SLS Program Manager, watched with pride as the largest rocket ever built was launched into space in 2022, marking the next step toward bringing human explorers back to the Moon and beyond. The SLS produces 8.8 million pounds of thrust, more power than any rocket ever created, the culmination of efforts from all 50 states, overseen by Honeycutt. "My No. 1 goal was to fly our first mission successfully and then fly the second mission as soon as possible," the alumnus says. "My long-range goal is for everybody working on this program to look back and say it's the best thing they've ever done."

\$2.3 MILLION NSF GRANT TO PREDICT HARMFUL SOLAR WEATHER EVENTS

Dr. Gang Li, a professor of space science, is the principal investigator on a four-year, \$2.301 million grant from the National Science Foundation to develop a scientific model to predict how Coronal Mass Ejections (CME) influence the energetic particle radiation environment in the inner solar system and Earth's magnetosphere. The grant supports a multidisciplinary team, including UAH, the University of Michigan, the University of Wisconsin-River Falls and the National Solar Observatory, to provide an open-source tool to forecast space weather by developing a machine learning-assisted CME model for the lower solar corona, and a particle tracing model for transport to the magnetosphere, to help researchers advance the nation's scientific expertise and resilience against space weather hazards that could threaten everything from space station astronauts to electronics and communication systems.

GRADUATE STUDENT HELPS FIND BLACK HOLE IN DWARF GALAXY

Graduate physics student Shrey Ansh is the lead author of a paper in The Astrophysical Journal describing the discovery of an intermediate-sized black hole buried in gas and dust in a dwarf galaxy. "This is one of the first heavily obscured intermediate-mass black holes found in a dwarf galaxy," he says. Typically, galaxies have supermassive black holes at their centers and astronomers can observe them as the surrounding gas and dust fall into them. Shrey collaborated with Dr. Chien-Ting Chen and Dr. Doug Swartz, both scientists at the University Space Research Association Science and Technology Institute, as well as other international researchers, to achieve a multi-wavelength analysis of the dwarf Seyfert-2 galaxy J144013+024744. The new midsized black hole contains 160,000 times the mass of the Sun.

Photo credit: NASA/JPL

DIVERSITY, EQUITY AND INCLUSION



Offering enriching programs of self-discovery that promote cross-cultural perspectives and create mutual opportunities for exchange, UAH fosters an inclusive environment for people of all races, ethnicities, cultures, ages, religions, languages, abilities, genders and sexual orientations. UAH works to continually strengthen and celebrate diversity through its steadfast commitment to improving social and cultural awareness, encouraging understanding through education, training and engagement with others as a top priority.



Photo credit: Gotham Artists

SOCIAL CHANGE ACTIVIST KEYNOTES 2023 MLK COMMEMORATION

Ben O'Keefe, a social change activist, highlighted the 2023 Martin Luther King, Jr. Commemoration as keynote speaker. O'Keefe is a public speaker and Forbes 30 Under 30 award-winning Chief Executive Officer of Chaotic Good, a social impact company promoting diversity, anti-racism, social justice and conversations on LGBTQ+ equality and masculinity. He is head of Diversity & Impact Production at Creator+, a next-generation content studio and distribution platform for digital-first storytellers. General admission to the event was open to the greater Huntsville community for a minimum donation to further support the department's efforts to meet its \$25,000 endowment goal for the Dave McGlathery Trailblazer Scholarship Fund, a scholarship that seeks to empower first-generation UAH students to build a more just society.



ODEI LAUNCHES INCLUSIVE EXCELLENCE CERTIFICATE PROGRAM

The Office of Diversity, Equity & Inclusion (ODEI) announced the launching of the UAH Inclusive Excellence Certificate Program. This initiative provides an online course that supports Diversity, Equity and Inclusion (DEI) training and awareness at no cost to the entire UAH community. Created by Katie Greene, an education & resource specialist in the ODEI, the program comprises 15 modules organized into three branches: Diversity, Equity and Inclusion. Each module includes a recorded lecture, a Speak Your Truth video and additional resources/information, as well as a number of self-reflection exercises or learning assignments. Students, staff and faculty have been encouraged to take this professional development opportunity, no matter their DEI experience level. Completion of the full certificate is eligible for 3.0 Continuing Education Unit credits.



UAH CELEBRATES PRIDE 2022

Throughout October, UAH Pride 2022 events were celebrated in honor of LGBTQ+ History Month, hosted by the Office of Diversity, Equity & Inclusion and campus partners. The Diversity and Inclusion Student Alliance kicked off the festivities by partnering with the Salmon Library and Queer Straight Alliance by auctioning art pieces depicting historical LGBTQ+ figures placed throughout campus. In celebration and honor of National Coming Out Day, Living Out Loud was created as a UAH Pride tradition program to focus on the shared experiences of LGBTQ+/GSM students. Other UAH Pride 2022 events included the Counseling Center Comm(UNITY) Extravaganza, the Pride Prom: MasQUEERade and the annual Pride Month Resource Fair and Festival, capped by the Pride Parade from the Altenkirch Lawn Greenway at the Student Services Building to the Morton Hall Quad.

Photo credit: Chuck Edgeworth

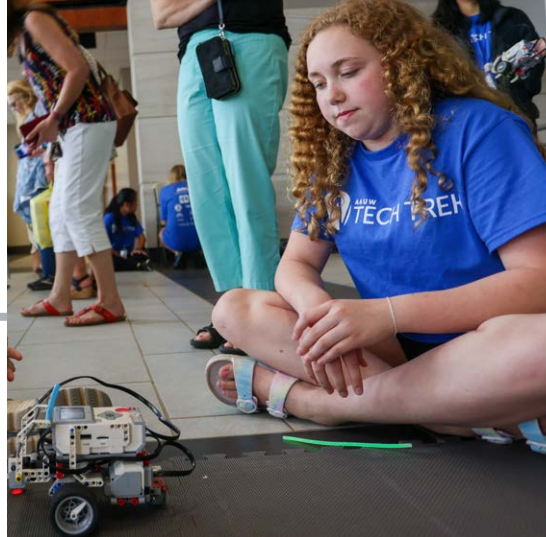
COMMUNITY ENGAGEMENT

We recognize there is power in coming together as a community with a shared commitment to meaningful activities that not only benefit the UAH family, but also the world beyond our campus. The mission of a premier research university is to explore, discover, create and communicate knowledge, while educating students in leadership, innovation, critical thinking and civic responsibility. One of the best ways to meet these goals is through essential collaborations within our community through a special emphasis on outreach and engagement that serve both equally well.



UAH BASKETBALL PLAYERS BUILD BEDS FOR LOCAL FAMILIES

The men's and women's basketball teams, along with President Karr, volunteered with Sleep in Heavenly Peace to build and deliver 25 beds to those in need. Men's basketball head coach John Shulman said he was glad to have the opportunity to help children in the Huntsville community. "Hopefully, 25 kids will have a bed that most of us take for granted," he said. Women's head coach Andrea Lemmond agreed. "For them to be fired up for an opportunity like this, we have special students." The event took place just 24 hours after both squads hosted West Alabama. "We're sanding, drilling and just doing different things to help make beds," UAH men's basketball senior guard CJ Williamson said. "It's really a blessing that we get to give back."



UAH HOSTS 7TH TECH TREK CAMP TO BOOST STEM INTEREST AMONG GIRLS

UAH hosted the Tech Trek camp, an event designed to raise awareness and interest in science, technology, engineering and math (STEM) fields for rising eighth grade girls from across the state of Alabama. Working in partnership with the American Association of University Women, this year's event marked the seventh time UAH has hosted the weeklong residential camp that invites girls to immerse themselves in the wonders of science and technology, all led by successful women scientists, engineers and professionals. A total of 64 girls from 24 Alabama counties participated on the UAH campus from June 12 to June 18. The campers are nominated by their teachers. The camp featured intensive hands-on experiments and activities that promoted interest in STEM fields.



SMDC 65TH ANNIVERSARY CELEBRATED WITH LT. GENERAL KARBLER

UAH celebrated the 65th anniversary of the U.S. Army Space and Missile Defense Command during the Bill Penney Crossover Classic basketball event held on Veterans Day. In attendance were Lieutenant General Daniel Karbler, the commanding general of the U.S. Army Space and Missile Defense Command and Army Forces Strategic Command at Redstone Arsenal, as well as UAH President Charles L. Karr. "On this day of national appreciation, I think I speak for everyone at UAH when I say thank you to all of the military veterans here tonight, for your service, your sacrifices and your love for our country," Dr. Karr said during the event. Established in 1957, the SMDC is celebrating its 65th anniversary as the first program office for ballistic missile defense.

ECONOMIC IMPACT

As Madison County's 12th largest employer, UAH provides a significant economic impact to the area and greatly contributes to the local and state tax base. The research efforts of our faculty, staff, students and alumni provide the innovation and discovery vital to propel growth and spur the creation of new commercial products and services for the booming technological corridor that is North Alabama. Our graduates, partnerships and programs expand company profits, significantly benefit government and federal endeavors and attract new companies and talent. UAH will always be a critically important driver of the economic engine for this region, the State of Alabama and beyond.

\$615M

ANNUAL ECONOMIC
IMPACT IN ALABAMA

72%

UAH GRADUATES
LIVE IN ALABAMA

59

INVENTION DISCLOSURES
SUBMITTED IN FY 22

UAH LEADS \$20 MILLION PLASMA PARTNERSHIP TO BOOST ALABAMA

Dr. Gary Zank, director of the Center for Space Plasma and Aeronomic Research and the Aerojet Rocketdyne chair of the Department of Space Science, is leading a \$20 million, five-year effort to develop transformative technologies in plasma science and engineering funded by the National Science Foundation. The program comprises nine Alabama universities and one private firm. The goals of the initiative are to develop new technologies using plasma – the most abundant form of matter in the observable universe – in hard and soft biomaterials, food safety and sterilization, as well as space weather prediction. “This grant will allow for ground-breaking plasma research, accelerating new technologies for a variety of applications, and will further solidify Alabama as a leader in this field,” says now retired Sen. Richard Shelby.

UAH BUSINESS ADVISOR NAMED 2022 STATE STAR BY SBDC

The national association of Small Business Development Centers (SBDC) named Michelle Kloske, Senior Business Advisor for the UAH SBDC, as the 2022 State Star in recognition of her contributions in serving Alabama’s small business community. The UAH SBDC works with a wide variety of clients to offer no-cost advising and training services to help businesses start and grow. Kloske advised approximately 600 unique clients over the past two years through SBDC events and one-on-one advisory meetings and supported more than 50 business start-ups, while facilitating the center’s How to Start a Business program each month. “Michelle Kloske exemplifies the mission of the UAH SBDC to help entrepreneurs and small business owners start and grow their businesses,” says Dean of the UAH College of Business, Jason Greene.

NEW DEGREE FOR ENGINEERING TECHNOLOGY WORKERS

A new bachelor’s program launched in 2022 aims to bridge the gap between engineering theory and technical application for full-time and non-traditional students. The Bachelor of Science in Engineering Technology degree meets the needs of students seeking to pursue a career in applied engineering and prepare them for the many opportunities available for highly-skilled technical workers. Required courses are offered at least once a year and can be taken either in a remote or hybrid format. The hybrid format provides students with the opportunity to meet in the classroom each week, but to access at least half of the lectures and supplemental material online. Nearly every course is accelerated, so courses are completed in seven weeks instead of 14.

CAMPUS INFRASTRUCTURE



At UAH our on-campus experience will always be a top priority. Our goal is to ensure our students, faculty, staff and visitors enjoy the highest quality facilities and infrastructure on our 500-acre campus to promote an environment that encourages academic excellence and discovery. As the university expands its footprint with new amenities and enhancements, the focus of each new project will be to not only improve our campus, but also to contribute to the quality of life of our campus community.

Renderings are conceptual and subject to change.



INITIAL APPROVAL RECEIVED FOR MAJOR ENGINEERING BUILDING PROJECT

The first phase of a new engineering building project has received conceptual approval from the University of Alabama System Board of Trustees to formally proceed with planning the construction of an 80,000-square-foot, multistory academic and research facility. This \$59.3 million facility will accommodate the College of Engineering's growth and greatly enhance the advanced research and development capabilities of UAH's flagship program. In Phase II, the existing Engineering Building will be repurposed to become an Education and Advanced Training Complex that will provide state-of-the-art learning environments, including a large teaching auditorium, technology-rich classrooms, a 200-seat in-the-round teaching arena and immersive technologies necessary for teaching and advanced workforce development and training. All stages of this multi-phased project are subject to Board approval.



UAH, CITY OF HUNTSVILLE PARTNER ON EXECUTIVE PLAZA DEMO

Demolition of Executive Plaza on the eastern edge of Cummings Research Park is complete, paving the way for a bold new vision for the Sparkman Drive site. UAH's conceptual master plan seeks to create a "college town" experience on the 58-acre property oriented toward life outside the classroom, with walkable housing and lifestyle amenities, such as dining, entertainment, regular events, outdoor recreation and a conference center and hotel to host both UAH and civic functions. The mixed-use plan combined with industry-ready office space will build relationships among students, faculty, business and the community, boosting recruiting and future job opportunities as well. UAH is in the early planning phase for the property. Once a plan has been formalized, it will be subject to approval by the Board of Trustees of the University of Alabama System.



ALTENKIRCH LAWN GREENWAY PHASE IV COMPLETED

Construction on the final phase of the Altenkirch Lawn Greenway project was completed this past year. The finalization of Phase IV now ties the greenway into the quad between Morton Hall and Frank Franz Hall, and its design composition includes seating areas, new lighting, security cameras, pedestrian walkways, bicycle lanes, extensive landscaping and green space, as well as ADA-compliant site improvements. The area is anticipated to become a vibrant location for gatherings and events. Numerous additional enhancements were performed as well, including the successful realignment of Ben Graves Drive, extensive paving improvements to parking lots and grounds enhancements to the east of the Conference Training Center.



ATHLETICS

BASKETBALL

The 2021-2022 UAH Men's Basketball team won the GSC Championship and advanced to their 11th NCAA tournament in the last 13 years.

LACROSSE

The 2022 UAH Women's Lacrosse team won their third GSC Tournament Championship, defeating Flagler College 15-12 in the final.

The 2022 UAH Men's Lacrosse team won the Peach Belt Regular Season Championship.

SOFTBALL

The 2022 UAH Softball team advanced to their 19th straight NCAA Tournament.

CROSS COUNTRY

The 2022 UAH Men's Cross Country team qualified for the NCAA National Championship Meet.

TRACK AND FIELD

The 2022 Men's Track and Field team won the GSC Outdoor Track and Field Championship and finished 14th at the NCAA Championships.





ALUMNI

Our alumni are shaping the future of our community and the world beyond. The innovation, creativity, and drive they display to support UAH's mission of leadership in research, scholarship and creative achievement are matched only by their selfless spirit of giving back. UAH's graduates include more than 47,000 alumni, among them entrepreneurs, artists, astronauts, athletes, nurses, scientists, educators and some of Huntsville's most impactful leaders.



ENGINEERING SCHOLARSHIP ESTABLISHED BY \$400,000 GIFT

Lester Ross, Sr., Mary Makima Ross's husband, says his wife, who recently passed away, loved to give money to the "places where it would do the most good." The Mary Makima and Lester M. Ross, Sr. Scholarship in Engineering will continue to do just that, filling a much-needed gap for UAH's graduate engineering students. Graduate scholarships are less common than those for undergraduate students, and they provide the support those students need to focus on their research and complete their degrees. Through Mary Makima's generosity, UAH's graduate-level engineering students will be able to pursue their interests and career goals. This generous gift will enable the UAH College of Engineering to recruit and retain outstanding graduate students.



MULTI-GENERATIONAL UAH FAMILY CONTINUES LEGACY OF GIVING

Vella Dailey credits UAH with playing a significant role in her family's success. Vella and her husband Everett both attended UAH, as did her daughter and grandson. Vella also worked at UAH in the Human Resources Department. Those connections, as well as her grandson Russell's positive experience with the Department of History, prompted her to endow two scholarships at UAH, most recently by establishing the Dailey and Pope Family History Scholarship in 2022 with a \$25,000 gift to support undergraduate students pursuing a degree in history. The impact of endowed scholarships is a big part of why Vella gave to UAH. In 2018, she established the Everett and Vella Dailey Scholarship for Immunology Research to support graduate students pursuing a master's or doctorate degree in the biological sciences.



AMBER MCPHAIL USES CAMPUS AED UNIT TO SAVE OLLI MEMBER'S LIFE

For nursing alumna Amber McPhail, a day of routine appointments at the Faculty and Staff Clinic in Wilson Hall turned into a life-or-death emergency in April 2017. As UAH director of Student Health Services, she was attending to an ordinary office visit, when her office manager burst into the examining room. Patricia Patrick had collapsed in the same building while attending a discussion on Socrates with the Osher Lifelong Learning Institute. McPhail quickly deployed an automated external defibrillator (AED), a portable device used as a rapid response method to save lives during a cardiac arrest. Thanks to her rapid response, as well as UAH's foresight to make AEDs available across campus, McPhail was able to celebrate a five-year reunion with Patrick this past year.



2022 ALUMNI OF ACHIEVEMENT AWARD WINNERS

The Alumni of Achievement Award is the highest honor bestowed by the UAH Alumni Association. The award recognizes graduates who have distinguished themselves professionally and personally and who exemplify the high standards of UAH. Winners are selected by a committee from nominations made by alumni, faculty, and friends. The award was created in 2001 as part of the university's 50 years of class celebration.

(L-R) Kristin Spencer Spearman, Ruth Ann Hall, Jeffrey Langhout, Amanda Wood, Violet Edwards, Dr. Marilyn Riley

Noopur Davis ('88 M.S. Computer Science)

Noopur Davis is Executive Vice President Chief Information Security and Product Privacy Officer at Comcast Corporation, responsible for the cybersecurity and product privacy functions for all Comcast Cable businesses. Her team ensures the confidentiality, integrity and availability of Comcast products, services and infrastructure, and she serves on the Advisory Board of Comcast NBCUniversal TechWomen. Davis is the recipient of the Women in Cable Telecommunications (WICT) Society of Cable Telecommunications Engineers (SCTE) International Society of Broadband Experts (ISBE) Cablefax Women in Technology and WeQual awards. The alumna has been included on the Cablefax 100, Cablefax Diversity, Cablefax Most Powerful Women and Top Women in Technology lists multiple times.

Violet Edwards ('14 MBA)

Violet Edwards is Madison County Commissioner, District 6. Edwards was elected to office in 2020, becoming the first Black woman to serve on the county commission. She is also well known in the local non-profit sector for her leadership and advocacy work with various agencies, including Christmas Charities Year-Round, the North Alabama Coalition for the Homeless and United Way of Madison County. "Representing District 6 means advocating for our needs, seeing to our priorities and ensuring that the challenges unique to the district are not overlooked in the big picture," Commissioner Edwards says.

Ruth Ann Hall ('86 B.A. Criminal Justice)

Judge Ruth Ann Hall is a Circuit Court Judge for Alabama's 23rd Judicial Circuit. Since taking the bench, she has presided over the Adult Mental Health Court and the Juvenile Conference Committee. She founded the Juvenile Alternative Court, the first of its kind in the state, to address the mental health needs of juveniles in Madison County, as well as the Veterans Mental Health Court program where each case is assigned a mentor who is also a veteran and who supports them through the entire process. "We basically try to help them get their life back on track," Judge Hall notes.

Jeffrey Langhout ('91 M.S. Engineering Management)

As Director of the U.S. Army Combat Capabilities Development Command Aviation & Missile Center at Redstone Arsenal, Jeffrey Langhout heads a workforce of nearly 11,000 civilian, military and contractor engineers, scientists and researchers that comprises the largest engineering workforce in Alabama. Their mission is to deliver technologies and functional engineering expertise to the Army for advanced aviation and missile

systems, including building actual hardware, writing weapon systems software and supporting live test events. Jeffrey Langhout is the only Army engineer to have led multiple research, development and engineering centers, and in 2022 was inducted into the State of Alabama Engineering Hall of Fame.

Dr. Marilyn Riley ('20 DNP Nursing)

Dr. Marilyn Riley is Chief Nursing Officer in IU Health Frankfort Hospital in Frankfort, Ind. She pursued the DNP to become an influencer of nursing practice. The alumna chose workplace violence as a special area of emphasis, as noted in her DNP project, Reducing Violence in the Emergency Department, Improving Perception of Safety: An Aggression Prevention Team Approach. "Acts of aggression towards nurses has reached never-before-seen levels in Emergency Departments across the United States, and it increases by 15% or more every year," the alumna notes. This project proposes the implementation of an Aggression Prevention Team to respond to incidents to improve nurse safety.

Amanda Wood ('12 B.S. Education)

In 2022, Amanda Wood accepted the helm of the volleyball program at Hoover High School in Hoover, AL, after 10 seasons as head volleyball coach at James Clemens High School in Madison, AL, where she compiled a 254-202 mark. Wood led James Clemens to five regional appearances in 10 seasons. At Hoover, the alumna is responsible for coaching and overseeing the entire volleyball program for the ninth grade, junior varsity and varsity squads, and she teaches 10th grade U.S. History as well. Wood was a stellar athlete for the Lady Chargers volleyball squad from 2007-2008 and ranks eighth all-time in attack percentage (.262).

2022 Outstanding Young Alumni of Achievement Award Winner

Kristin Spencer Spearman ('06 B.S. Engineering)

Kristin Spencer Spearman is Vice President of Transmission Planning & Projects for the Tennessee Valley Authority in Chattanooga, TN, where she leads a group responsible for project planning and execution for one of the largest transmission systems in North America. "Ironically, as we move away from more carbon-based resources like coal plants and towards renewable resources like solar, the transmission grid must be modernized to keep up. It is exciting to be part of that. That technology has improved to the point that more people are skipping the gas pumps and using electricity instead. Therefore, low cost, reliable power is becoming more important than ever."



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