

THE UNIVERSITY OF
ALABAMA IN HUNTSVILLE



THE UNIVERSITY OF ALABAMA IN HUNTSVILLE IS ONE OF THE NATION'S PREMIER RESEARCH UNIVERSITIES, OFFERING A CHALLENGING HANDS-ON CURRICULUM THAT ENSURES OUR GRADUATES ARE PREPARED TO BECOME TOMORROW'S LEADERS.

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A MESSAGE FROM THE PRESIDENT DR. CHARLES L. KARR

A great community deserves a strong university. At UAH, we know that Huntsville is one of the best communities in the country, and we are glad to make this remarkable city our home. Each day, we are strengthening every aspect of our university.

Our strength begins with a healthy and well-rounded student population. Nearly 1,200 freshmen joined us this year, and they are choosing UAH for the opportunities inside and outside of the classroom. UAH students represent the first university to ever win the top prize of two NASA Artemis Student Challenges—the Human Exploration Rover Challenge and the Student Launch Challenge led by Marshall Space Flight Center—in the same year. This title has been dubbed the Earth2Sky Eagle Crown. Our student-athletes have the strength to make them champions as well. 2023 marked the ninth Gulf South Conference softball championship in program history. Thirty-nine student-athletes earned weekly conference honors, and within our 15 sports, 107 student-athletes earned a 4.0 GPA in the 2023 calendar year. Our students have a resiliency that is unmatched.

Next, our faculty experts are delivering a world-class education in America's Rocket City. They are bold, attentive, knowledgeable and passionate about our students. This year, UAH had a vast amount of faculty whose accomplishments continually made us proud of the professors and instructors who are teaching the next generation of engineers, nurses, scientists, educators, business leaders and artists. Their strength and wisdom are what ignites the desire for our students to be the best.

Lastly, we are strengthening our relationships within the research community as well. With our proximity to Redstone Arsenal and Cummings Research Park, we are mere steps away from some of the world's most innovative developments, such as NASA's Space Launch System and the Army's Hypersonic Weapons. We are a top-tier Carnegie R1 university with research expenditures totaling \$163.4 million last year. UAH is ranked in the top 25 of five federally funded programs nationally and number one among state of Alabama universities in six programs and areas including NASA and DOD expenditures. UAH only continues to add to our portfolio of challenging and essential research that will further explore new worlds and defend our nation.

UAH is strong because of our students, faculty and staff. UAH is strong because of our alumni and friends. UAH is strong because of our ability to research and study leading-edge technology. We know a great community deserves a strong university, and for Huntsville, that is UAH.

Charles L. Karr

UNIVERSITY FACTS

563

Number of Faculty

1,123

Number of Staff

50,002

Number of Alumni
Living Today

1,176

2023 Freshman Class

26.7

Average ACT Score
Fall 2023 Freshman Class

3.93

Average GPA
Fall 2023 Freshman Class

1,892

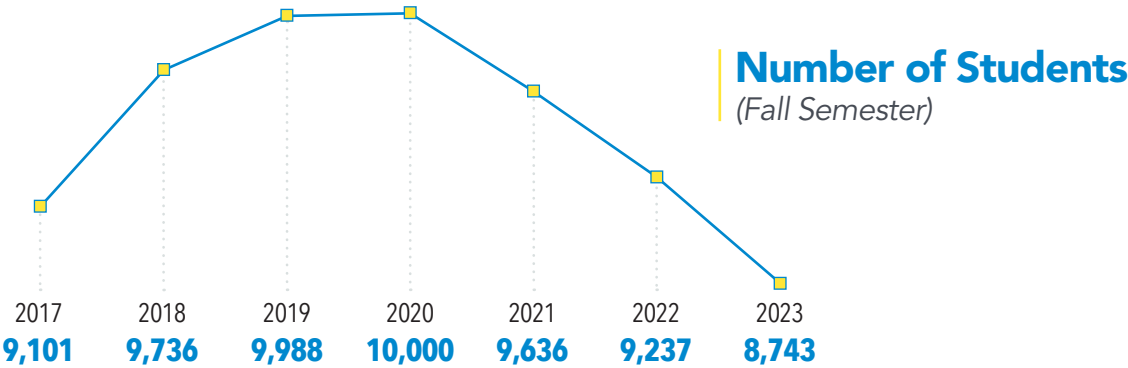
Graduate School Enrollment
Fall 2023

14

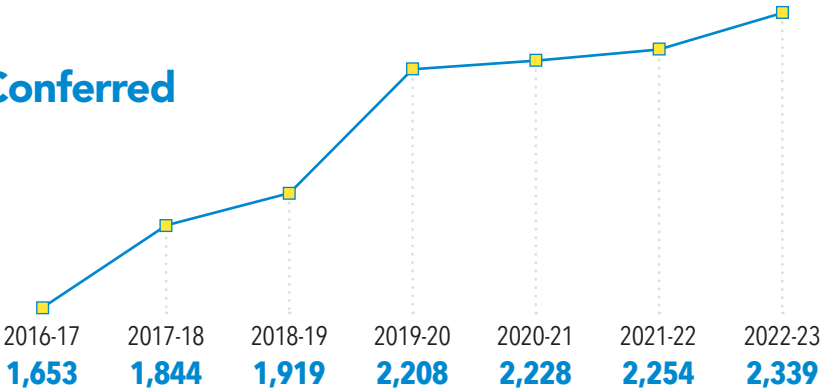
Patents Received

52

Invention Disclosures
submitted in FY23



Degrees Conferred



UAH Research

\$163.4M

Research & Development Expenditures for FY22

FY22 marks the 11th year in a row UAH has had **five or more federally funded research expenditures ranked in the top 25** of National Science Foundation Higher Education Research & Development Survey Rankings.

National Rank



State Rank



AEROSPACE/AERONAUTICAL/ASTRONAUTICAL ENGINEERING

6

1

ATMOSPHERIC SCIENCE & METEOROLOGY

9

1

ASTRONOMY

9

1

COMPUTER AND INFORMATION SCIENCES

10

1

INDUSTRIAL AND MANUFACTURING ENGINEERING

24

2

NASA RESEARCH EXPENDITURES

13

1

DEPARTMENT OF DEFENSE RESEARCH EXPENDITURES

16

1

UAH HEALTH & WELL-BEING

We prioritize the holistic well-being of our students through comprehensive health and wellness programs. Central to the mental well-being of our students is *Togetherall*, an innovative online platform providing a confidential and supportive environment for students to navigate their mental health. With anonymity assured, users can freely express themselves, engage in meaningful conversations and access resources for managing mental health challenges. The platform, available 24/7 and overseen by trained professionals, empowers students to take charge of their mental wellness journey at their own pace, with self-assessments, creative tools and a diverse array of self-guided courses.

In tandem with mental health support, our University Fitness Center stands as a hub for physical activity and wellness, offering inclusive memberships with an extensive range of amenities. From a spacious gymnasium accommodating various sports and activities to indoor pools for aquatic fitness and instruction, our facilities cater to diverse preferences and skill levels. Additionally, our Cardiovascular Center boasts state-of-the-art equipment connected to a Cardio Theater system for an engaging workout experience. With group fitness classes, fully equipped weight rooms and certified personal trainers available for guidance, UAH ensures that students have access to the resources necessary to prioritize their physical fitness and overall well-being. In 2023 UAH achieved GOLD status in the FISU Healthy Campus Program.

Moreover, UAH promotes physical wellness through initiatives like Charger Cycle, addressing sustainability while offering practical solutions to transportation and parking issues on campus. With 100 bikes available for checkout through University Recreation, students can embrace active commuting options, contributing to a healthier campus environment, while enjoying the convenience of easy mobility.



UAH FIRST GENERATION STUDENTS PROGRAM: CELEBRATING ACHIEVEMENTS AND SUPPORT IN 2023

The UAH First Generation Students Program, "First & Proud," continues to thrive, providing essential support and resources to students who are the first in their families to pursue a bachelor's degree.

The core mission of "First & Proud" is to recognize the significant achievement of being a first-generation college student. The program acknowledges the unique challenges these students may encounter and endeavors to equip them with the necessary tools to succeed academically and personally.

Throughout 2023, the First Generation Students Program at UAH demonstrated unwavering dedication to fostering a supportive environment. By identifying students who meet the criteria of having neither parent complete a bachelor's degree, the program aims to cultivate a sense of community and shared experience among these pioneering individuals.

In the pursuit of academic excellence, the program offered a range of resources to assist first-generation students in their educational journey. From mentorship initiatives to tailored academic support, UAH ensured that these students had access to the resources they needed to thrive both in and out of the classroom.

Key highlights of the 2023 First Generation Students program include:

Over the past five years, 15% of our first-year class comprised first-generation students, as reported

through federal student aid submissions. Additionally, through an annual survey and self-identification, we estimate that approximately 1 in 7 undergraduates are first-generation students.

"First 2 Grad" was established as a registered student organization and holds regular meetings. Their mission statement, "Support, Mentor and Inspire," reflects their commitment to assisting first-generation students.



JANUARY

Education receives \$2.8M U.S. Department of Education grant to support teachers of English Learners



FEBRUARY

Advancement raises \$175K to support Athletics, Nursing and Engineering

Montgomery Mayor Steven Reed shares his perspective during the Black History Month program

MARCH

Graduate student transforms hobby into a successful weather experiment in Antarctica

Researcher to study the cause of lithium-ion battery failures

APRIL

Business acc... a \$100K gift SAIC

Record high nearly \$170M in research a... development funding; 5 programs in the Top 20

Raymond B. Engineering Building is the major construction project

Engineering Professor named a Fulbright U.S. Scholar

UNMATCHED
Accomplishments

Take a look at
the top stories
in 2023.

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ranked
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MAY

Softball captures
9th Gulf South
Conference
Championship

Two graduate
programs listed
by U.S. News and
World Report of the
best in the nation

More than 1,000
students joined the
Charger Alumni
Family

Honors student
awarded Fulbright
English Teaching
Assistantship

JUNE

University wins top
prize at two NASA
Artemis Student
Challenges dubbed
the Earth2Sky Eagle
Crown



JULY

Two Engineering
students recognized
nationally as
Women in Defense
Scholars

Osher Lifelong
Learning Institute
celebrates 30 years
at UAH

AUGUST

Honors
Engineering
student received
a Department of
Defense Science,
Mathematics
and Research for
Transformation
Scholarship for
Service

Artificial
Intelligence is
used to enhance
classroom teaching
and the lives
of autistic and
neurodiverse
individuals

SEPTEMBER

Seven graduates
joined the roster
of Alumni of
Achievement
honorees

Seven former
student-athletes
were enshrined in
the UAH Athletics
Hall of Fame

Go Gold! University
achieved GOLD
status in the
FISU Healthy
Campus
Program



OCTOBER

Cybersecurity
software integrated
on a Lockheed
Martin technology
demonstrator
CubeSat

Nursing researcher
to study
cardiometabolic
disease among
Black women in the
Deep South

NOVEMBER

Tennessee
residents continue
to receive in-state
tuition

Nearly \$1.4M in
research awarded to
study atmospheric
science,
astrophysical
phenomena in
propulsion and
NATO's disaster
relief drone
technology

DECEMBER

Researchers
designed
limestone putty
nanogenerator
to harvest energy
from everyday
motion to power
small devices

Science received
\$2M gift for
Chemistry
initiatives from the
McMullen Trust

More than 1,300
students become a
part of the Charger
Alumni Family

NEW ACADEMIC PROGRAMS

2023 saw further development of UAH's academic offerings. Two new degree programs – engineering technology and child, family and community development – hit a significant milestone with the graduation of their inaugural cohorts. Five other degree and certificate programs also began.

Engineering technology in the College of Science aims to fill a growing demand for a technically prepared workforce for the expanding high-tech economy in North Alabama. This applied program lets students explore the integration of engineering principles and modern technology, preparing graduates for jobs in the local automotive, construction, advanced manufacturing, aerospace or defense industry.

The College of Education's child, family and community development program lets students work with children, adolescents and their families in a community setting. Its goal is to develop

leaders in the field who focus on improving these lives through high-quality early care and education programs, nonprofit agencies, children's museums, recreation centers or similar specialized programming.

The College of Business expanded its undergraduate BSBA programs to include a major in analytics. Analytics was already offered on the master's level.

The College of Nursing added a nursing education concentration to its previous Master of Science in Nursing programs: family nurse practitioner, nursing adult-gerontology acute care and nursing administration.

The College of Science began a Ph.D. in chemistry that offers three degree pathways: academic, entrepreneur and executive. The academic path provides students a traditional Ph.D. experience with flexibility through a choice of core chemistry courses and individual, mentored courses. The entrepreneur and executive paths integrate chemistry research with an MBA component.

Two College of Science undergraduate and graduate certificates introduce students to geographical information systems (GIS) and remote sensing and prepare them for careers directly in the GIS field or where GIS experience is valuable.

With ever more career opportunities available to our students, UAH remains committed to maintaining its No. 1 ranking as the best value among colleges in the state of Alabama.



UAH CHARGER ATHLETICS

UAH student-athletes continued winning traditions in competition, in the classroom and in the community.

The men's basketball team won the 2022-23 Gulf South Conference (GSC) Regular Season Championship on Feb. 25. This propelled them to the 2023 GSC Men's Basketball Championships as the No. 1 seed.

The softball team captured the GSC Softball Championships on May 6. The Chargers' ninth championship was also the fifth time that UAH has gone undefeated at the GSC tournament. They went to the NCAA Division II tournament for the 20th consecutive year and made it to the regional final.

Student-athletes succeeded academically, too. Of the 363 student-athletes in the spring semester, 177 earned a 3.5 GPA or higher to make the Dean's List, and 75 earned a 4.0 for the President's List. In the fall, there were 368 student-athletes with 151 on the Dean's List and 59 on the President's List.

Student-athlete's 2023 community service efforts were recognized in January 2024 when UAH was named a finalist for the NCAA Division II Award of Excellence. UAH was also a finalist in 2022.

The NCAA cited UAH's partnership with the One Love Foundation, which educates students about relationship violence and abuse. UAH used workshops, training sessions and a dedicated game to advance One Love's mission to give

young people the tools and resources needed to identify and deal with unhealthy relationships and bring life-saving prevention education to their communities.

Chargers completed other service projects in 2023. For the second consecutive year, the men's and women's basketball teams built beds with local volunteers from the national organization Sleep in Heavenly Peace, which aims to provide beds for the estimated two to three percent of American children who don't have one.



RESEARCH

UAH's Higher Education Research and Development (HERD) expenditures for FY23 totaled \$163 million, while the university's five-year total is \$724 million since FY19. FY22 marks the 11th year in a row UAH has had five or more federally funded programs ranked in the top 25. UAH is 6th in aerospace engineering, 10th in computer and information sciences, 9th in atmospheric science, 9th in astronomy and astrophysics and 24th in industrial and manufacturing engineering. The university is also 13th in NASA and 16th in DOD expenditures.

Mechanical and aerospace engineering faculty won awards totaling \$750,000 to collaborate with the Los Alamos National Laboratory (LANL) on research to advance one of the most sought-after goals of plasma physics, plasma fusion energy. Dr. Gabriel Xu and Dr. Jason Cassibry are studying magnetized high-energy density plasma interactions that could one day lead to abundant clean energy.

Three researchers discovered a gamma-ray burst 2.4 billion light-years away that ranks as the brightest ever observed. Dr. Peter Veres, Dr. Michael S. Briggs and Stephen Lesage, all associated with the UAH Center for Space Plasma and Aeronomic Research, collaborated on the discovery. The researchers operate the Gamma-ray Burst Monitor at UAH.

Dr. Azita Amiri with the College of Nursing was awarded a **\$25,000 Network of Practice Grant by the Bloomberg American Health Initiatives to examine life expectancy inequities in Alabama.** The initiative is designed to address social environmental determinants of health in selected neighborhoods in the region which suffer from poverty, low literacy, environmental injustice and unequal disease burdens.

Incredible Breakthroughs

UAH research scientist Dr. Andrew White developed the **NASA Short-term Prediction Research and Transition Center (SPoRT) Lightning-Artificial Intelligence (AI) tool**, which can predict the probability of the threat of lightning up to 15 minutes before an actual strike. In July 2023 the product was used for the first time to successfully forecast a threat to a country music festival in Cullman, Ala., protecting 35,000 concert-goers.

Dr. John Bennewitz was awarded a \$650,000, 45-month Air Force Office of Scientific Research grant to **develop an advanced propulsion system that will facilitate surveillance of space between the Earth and the Moon** by the United States Space Force. The research will support surveillance of cislunar space, or out to approximately 385,000 kilometers.

A student team won \$99,998 in research grant funding from the United States Environmental Protection Agency to develop a low-cost household water filter that removes per- and polyfluoroalkyl substances from drinking water in small, rural, Tribal and disadvantaged communities. The grant is part of the EPA's People, Prosperity and the Planet Program, a competition open to university students working to design innovative solutions for a sustainable future.



Solving the World's Challenges

Dr. Gang Wang, Dr. Yu Lei, Dr. Ryan Conners and Dr. Moonhyung Jang have designed a **wearable biosensor that offers a new way to measure human muscle activation to potentially prevent injuries and enhance athletic performance**. The breakthrough is a triboelectric nanogenerator that converts mechanical or thermal energy into electricity. The design is self-powering, light-weight, disposable and costs much less to manufacture than traditional nanotechnology.



Dr. Avimanyu Sahoo was awarded three separate **federal grants totaling \$650,000 to support research projects involving learning-based control**. The studies are funding projects to advance personal protective equipment through the use of smart technologies; to enhance networked collaborative control tasks in dangerous environments like marine exploration and disaster management, and to develop AI-enabled robotic inspection platforms to improve the sustainability of energy infrastructure.

Dr. Gabe Xu and Dr. Jason Cassibry won a grant totaling \$457,963 to study 3D magnetic reconnection, a phenomenon at the heart of solar events, where magnetic field energy is converted to kinetic and thermal energy. The project, part of a \$9.96 million Department of Energy Funding Opportunity, seeks to examine this celestial process in the laboratory, ultimately leading to advances in space propulsion.

Dr. Sukanya Chakrabarti and Dr. Tom Donlon published a paper that will help illuminate how much dark matter there is in the Milky Way by studying the gravitational acceleration of binary pulsars. The researchers are measuring tiny accelerations of stars. As the number of data points grows, it will be possible to map the galaxy's gravitational field with unparalleled precision, including clumps of dark matter.



UAH IN THE MEDIA

UAH news has a reach that is worldwide. These are a few stories highlighted this year by many media outlets.

The science and art of lightning

SUNDAY MORNING

By David Popper
August 27, 2023 / 9:12 AM EDT / CBS News

f X



CBS Sunday Morning News

1 JULY 18, 2023

Editors' notes

Researchers operating Gamma-ray Burst Monitor discover brightest gamma-ray burst ever detected

by Russ Nelson, University of Alabama in Huntsville



phys.org

University of Alabama Huntsville showcases its value at 2023 Space & Missile Defense Symposium

The SMD Symposium is the leading educational, professional development and networking event in the space and missile defense community.



WZDX - FOX 54



NEWS

UAH planning \$24 million renovation for cybersecurity facility

Published: Aug. 31, 2023, 4:53 p.m.



Sparkman Drive entrance to the University of Alabama in Huntsville with the Shelby Center in the background.

By Paul Gattis | pgattis@al.com

Huntsville Times



Applications now open for UAH's Rocket Booster Summer Bridge Program | May 15, 2023 | News 19 at 10 p.m.

News / May 15, 2023 / 10:45 PM CDT

Incoming UAH freshman planning to major in science, technology, engineering, or mathematics fields can now apply for The Rocket Booster Summer Bridge Program.

News 19 - WHNT

Huntsville
BUSINESS JOURNAL
Keeping you informed and inspired

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UAH College of Nursing collaboration with Clarus aims to advance healthcare education

June 19, 2023 / In Education, Engineering, Featured, Lead, Medical, News, People, Science, Technology / by staff reports

Huntsville Business Journal

UAH hosts Adaptive Cycling Community Day and Clinic

The clinic allowed folks with physical or visual impairments -and those without - the chance to try out these accessible bikes.



WZDX - FOX 54

UAH GIVING

371 Number of Endowed Scholarships in FY23

2,865 Total Number of Gifts/ Pledges made in 2023

1,265 Number of Total Donors made in 2023

101 Total Planned Gifts, Including 11 New Commitments in 2023

\$16,750,352 Total Value of Gifts Raised (includes pledge payments, planned gift payments, and outright gifts)

\$3,292,103 Total Planned Gift Payments for FY23

\$98,487,807 UAH/UAHF Endowment Total

UAH works with alumni, friends, companies and other organizations to provide support and funding through a variety of giving programs. The university and the UAH Foundation raised a record-breaking \$16.7 million during fiscal year 2023, surpassing all previous fundraising achievements. The UAH Foundation donated \$8 million to UAH in support of the College of Engineering's new Raymond B. Jones Engineering Building. Planned giving also increased this year. These funds are not just donations or gifts; they are a valued investment in our students and community.





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