



Igniting Progress through Science

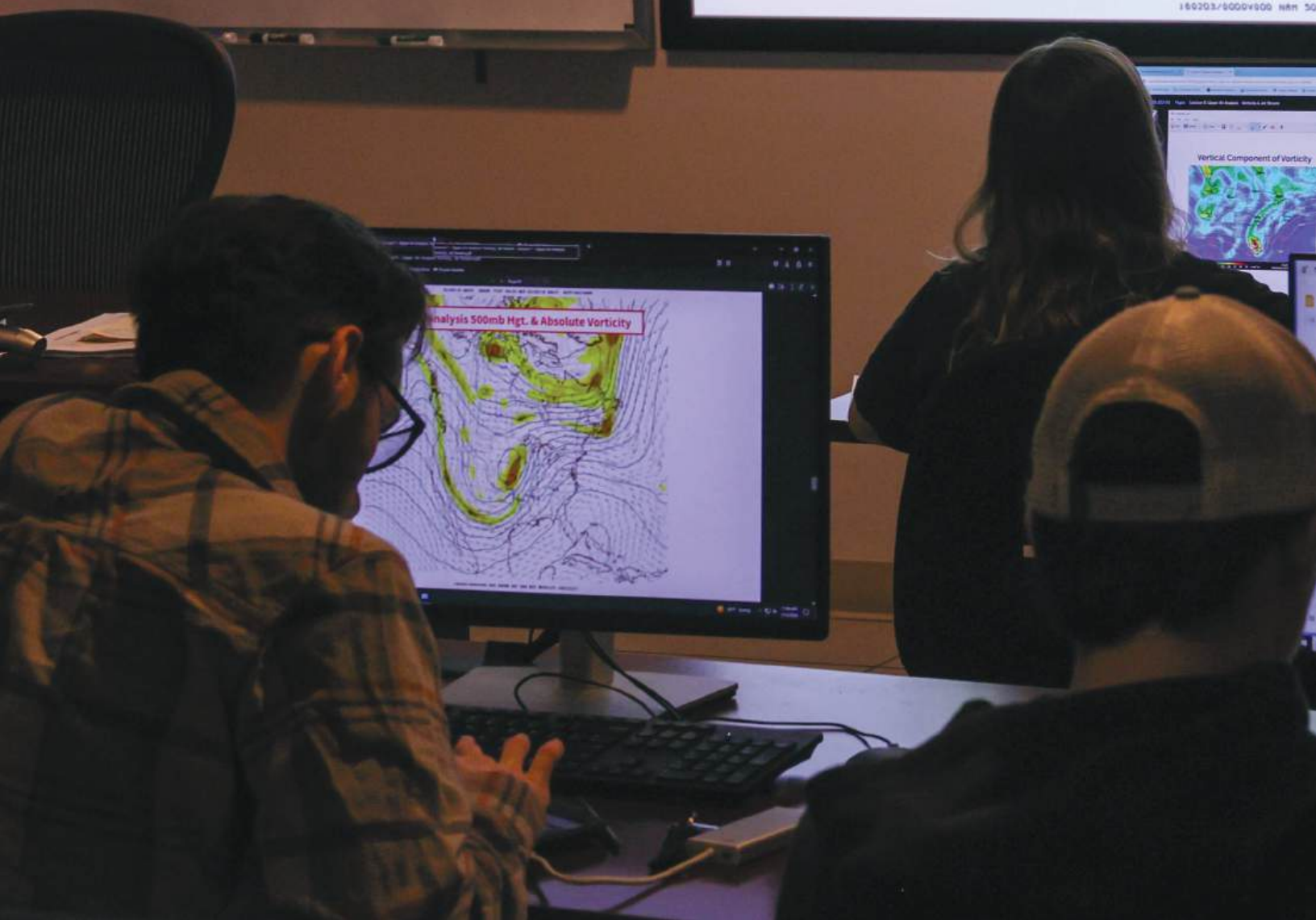
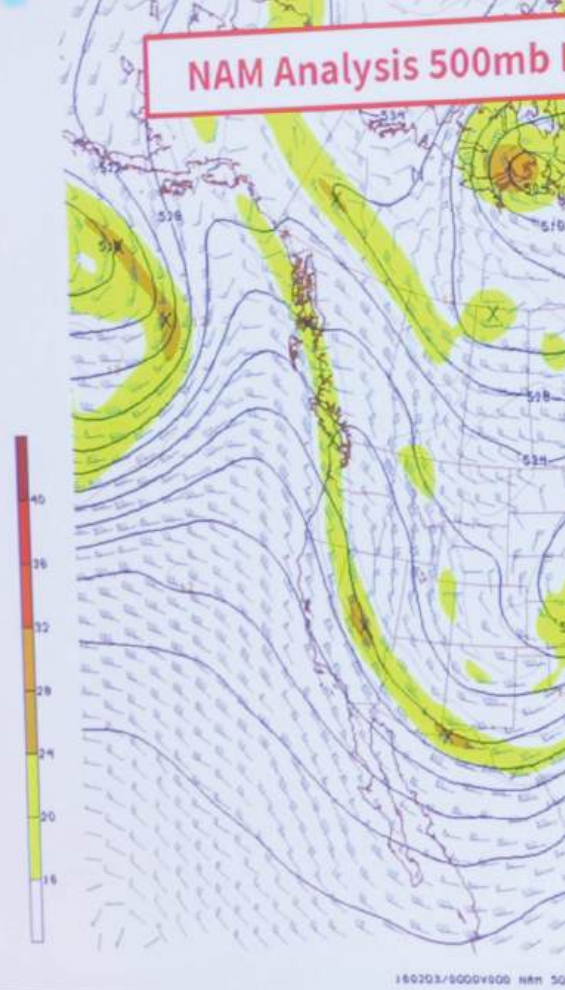
A STRATEGIC PLAN 2025-2032

*Image by: Stephen Walker
Composite image made by combining data originally obtained by the Hubble Space
Telescope and the Chandra X-Ray Observatory of the Perseus cluster.*

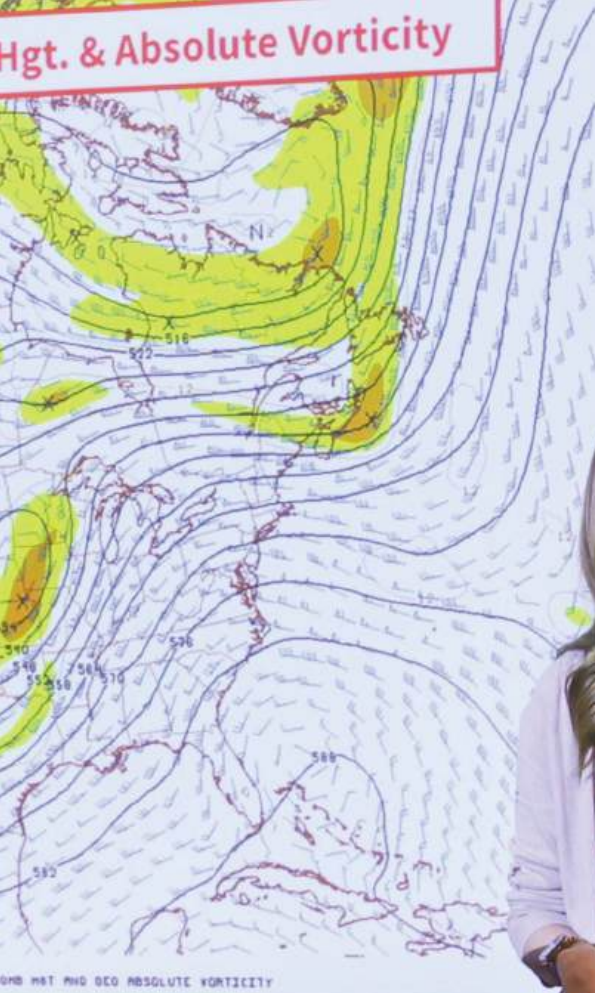

COLLEGE OF SCIENCE
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

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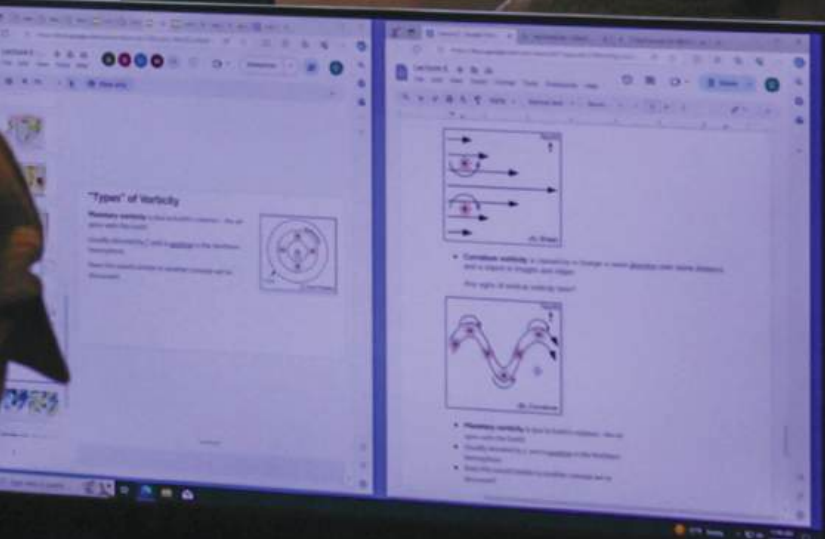
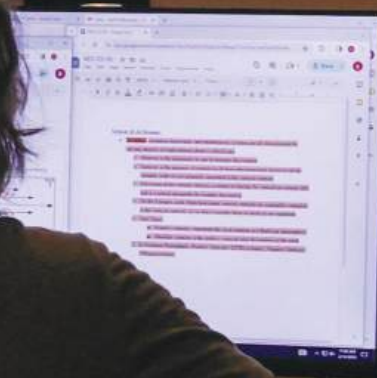
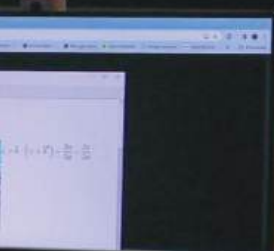
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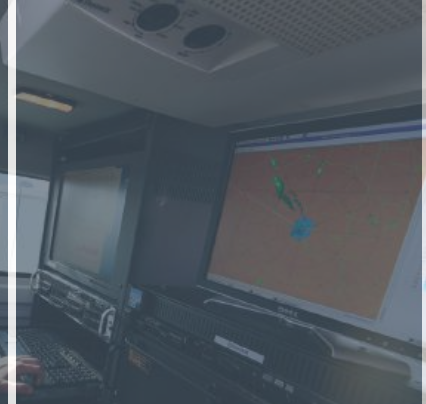
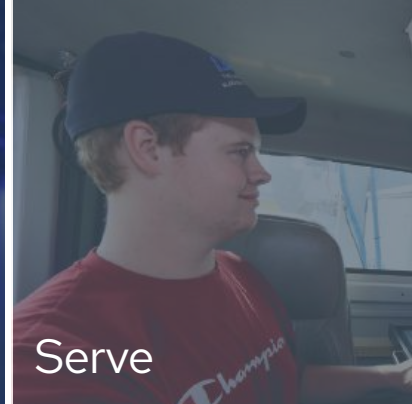
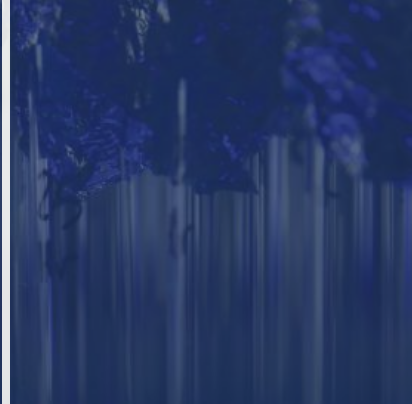


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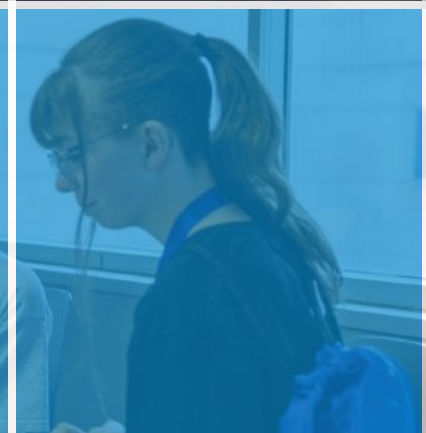




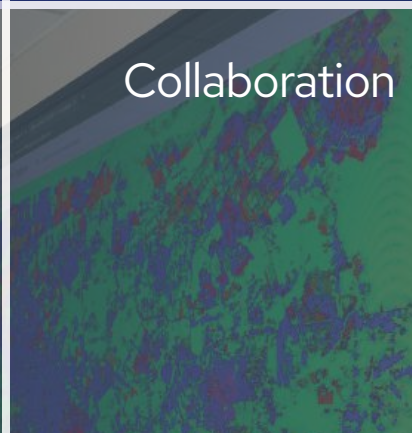
Serve



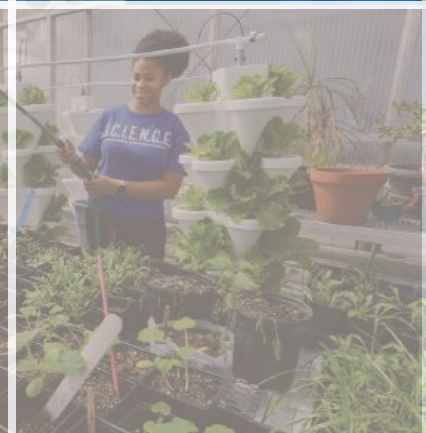
Connect



Ignite



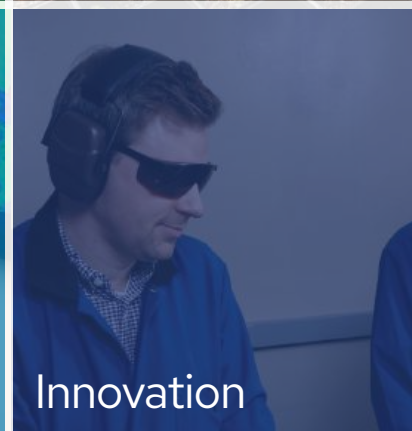
Collaboration



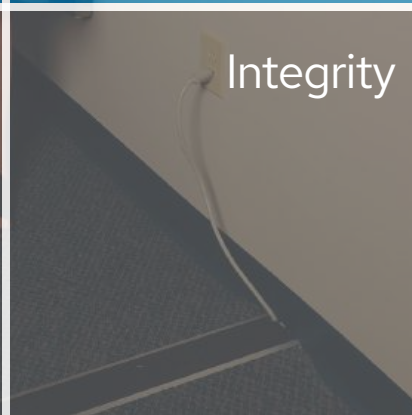
Community



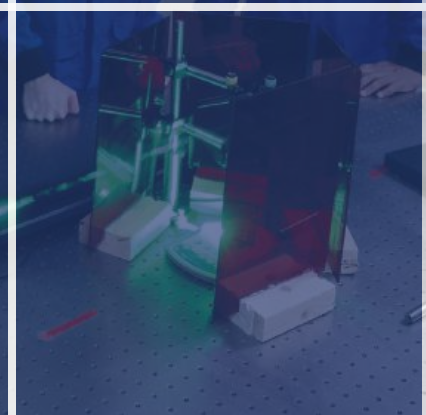
Excellence



Innovation



Integrity



MISSION:

The mission of the College of Science at The University of Alabama in Huntsville is to expand scientific knowledge and facilitate the application of science for the benefit of society through excellence in education and research.

Serve.

We support our community with leading scientific expertise, workforce development opportunities, and world-class educational programs in the sciences.

Connect.

We serve as a vibrant hub that connects our students with professional opportunities, our educators and researchers with national and international partners, and our scientific expertise with societal and economic needs.

Ignite.

Through the creativity, dedication, and experiences of our faculty, staff, and students, we generate new ideas, discover and disseminate new knowledge, and create novel technologies to empower future generations.

SERVING OUR COMMUNITY. CONNECTING PEOPLE. IGNITING INNOVATION.



VISION:

Igniting Progress through Science.

Science is the key to solving some of the most challenging problems we face as a society and a nation. Through world-class research in fundamental and applied sciences, we seek to collaborate with our community partners to implement advancements and innovations necessary to create a bright future for the people in our state, our nation, our planet, and beyond.

Our faculty and scientific staff are recognized national and international leaders and experts in their fields, with a history of success in fundamental and applied research. Leveraging the experience of our outstanding faculty, we offer undergraduate and graduate degrees that enable students to become the highly skilled scientists and technical leaders they aspire to be. Our programs are designed for students to get involved in impactful research and internships early on so they can learn in the classroom, in the laboratory, and in the community.

CORE VALUES:

Collaboration and Community
Excellence and Innovation
Integrity and Responsibility

VALUE PROPOSITION: The College of Science is home to world-class research programs and offers pathways to high-quality science degrees that equip our students with the knowledge and skills for advanced professional and research careers.

ABOUT THE UAH COLLEGE OF SCIENCE

The College of Science at UAH is driven by research excellence that forms the foundation for graduate programs in a broad range of disciplines, including Atmospheric & Earth Science; Biological Sciences; Chemistry; Computer Science; Mathematical Sciences; Physics & Astronomy; and Space Science, as well as interdisciplinary programs such as Biotechnology Science and Engineering; Cybersecurity; Materials Science; Optical Science and Engineering; and Software Engineering. Our faculty's high research activity is reflected in their publications, the intellectual property they create, the external research support they receive, and the consistent graduation of Ph.D. students in nine distinctive departmental and interdisciplinary programs, as well as through repeated confirmation in national rankings. We take pride in the innovative research our faculty and students perform, which is often conducted in collaboration with our community partners in Cummings Research Park, NASA Marshall Space Flight Center, and Redstone Arsenal. Through close ties with local businesses and industry, we ensure that our graduate programs help meet the demand for a highly-skilled workforce in our state and beyond, and our M.S. and Ph.D. students are prepared to become leaders who will push the boundaries of knowledge.

The College of Science likewise offers a broad range of rigorous undergraduate degree programs in Atmospheric & Earth Science; Biological Sciences; Chemistry; Computer Science; Engineering Technology; Mathematical Sciences; and Physics. Our Bachelor of Science graduates are highly prepared to pursue advanced science degrees and to meet workforce needs in and beyond the greater Huntsville area. We strive to connect our students early on with the opportunities to apply their newly acquired knowledge and skills in undergraduate research projects, co-ops, and internships. To help our students succeed and realize their potential, our faculty members are supported by professional advisors who meet with students individually, guide them through degree completion, and facilitate their connection with campus resources.

The College of Science strives to engage a broad range of learners through our curriculum. We continuously support UAH undergraduate students across all majors in achieving their career goals through Charger Foundations science courses, and we encourage and support interdisciplinary education and research at both the graduate and undergraduate levels. We strive to ensure low costs for students while maintaining high-quality standards, and by offering different course modalities, we serve the needs of various types of learners. The College actively promotes the professional development of our faculty and staff, encourages innovation in teaching, and seeks to create a welcoming and supportive environment that enables all of us to improve and realize our potential.

2025-2032 STRATEGIC PLANNING COMMITTEE

The development of this strategic plan was guided by a strategic planning committee with representatives from all academic departments that comprise the College of Science, along with two student representatives. Each department nominated up to two faculty representatives for this group.

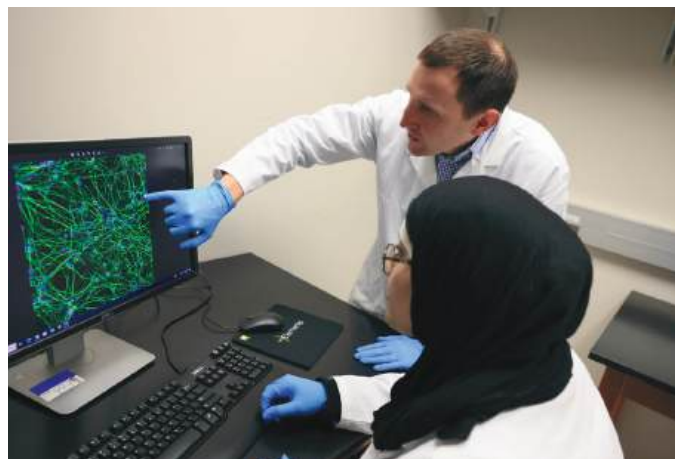
Jerome Baudry (Biological Sciences)
Lawrence Carey (Atmospheric & Earth Science)
Xiaomin Chen (Atmospheric & Earth Science)
Lingze Duan (Physics & Astronomy, Dean's Office)
Christy Fordham (Staff Representative)
Alisa Henrie (Engineering Technology)
Orkhan Huseynov (Engineering Technology)
Janna Jones (Student Representative)
Alex Mueller (Student Representative)
Subramania Athiray Panchapakesan (Space Science)
Nikolai Pogorelov (Space Science)
Satyaki Roy (Mathematical Sciences)
Seyed Sadeghi (Physics & Astronomy)
Rainer Steinwandt (Dean's Office)
Bernhard Vogler (Chemistry)
Huaming Zhang (Computer Science)



STRATEGIC PLANNING PROCESS

The planning process could build on earlier university-wide efforts that led to the UAH 2035 strategic plan. Given the extensive efforts that went into the institutional planning process, the process forewent a complete restart, and the committee iteratively modified and refined an initial draft document over a series of meetings on a condensed timeline throughout the 2024-2025 academic year. The plan's structure was chosen to align with the structure of UAH's College of Business 2023-2030 strategic plan, and the plan's content captures the unique perspective of the College of Science with its research excellence and educational impacts. The resulting document specifies goals, objectives, and actions to support the implementation of institutional priorities.

An important theme in this plan is the interaction of UAH's College of Science with our community partners. Overlapping with this planning effort, the College of Science established an external Advisory Board and hosted an inaugural meeting to obtain initial input on how we can improve. We are grateful for the community leaders who made themselves available to serve in this capacity, and their input influenced this plan. Collaborating with our community partners, we want to use—and, as



needed, adapt—this planning document to make UAH's College of Science the exceptional strategic partner our community can expect us to be.

UAH ranks in the **TOP-10 nationally** (and first in the State of Alabama) in the National Science Foundation's latest (2023) Higher Education and Research and Development Survey in the category of federal research expenditures for:

- ▶ Astronomy and Astrophysics
- ▶ Atmospheric Science and Meteorology
- ▶ Computer and Information Sciences

SERVING OUR COMMUNITY. CONNECTING PEOPLE. IGNITING INNOVATION.

GOALS, OBJECTIVES, AND ACTIONS

The College of Science is home to a comprehensive portfolio of degree and research programs. Concurrently, the history and location of The University of Alabama in Huntsville in one of the world's largest research parks and near NASA Marshall Space Flight Center and Redstone Arsenal offers opportunities for excellence in specific fundamental and applied science disciplines. We intend to leverage these unique advantages to establish the College of Science as a national leader in various scientific areas. We strive to maintain excellence across all our efforts, while at the same time setting priorities that will maximize the impact of limited resources.

With this in mind, the College of Science has chosen three long-term, strategic goals that emphasize our ability and potential to serve, connect, and ignite. As outlined below, each of the three goals is linked to specific objectives and proposed actions, which in combination support the overarching vision of igniting progress through science.



SERVE

Goal: Help the greater Huntsville community, our state, our nation, and the global scientific community to meet their advanced research and highly skilled workforce needs.



Objective: Offer degree programs that enable graduates to excel in advanced professional or research careers.

- ▶ **Action:** Collaborate with local and federal partners to increase the number of government or industry-supported students who graduate with a Ph.D. degree, especially in high-demand disciplines.
- ▶ **Action:** Maintain and leverage robust external advisory boards to inform program and curriculum decisions.
- ▶ **Action:** Develop and strengthen program options for emerging science and technology areas through means such as professional accreditation.

Objective: Provide an elite science education that is accessible to a broad range of learners.

- ▶ **Action:** Hire tenure-earning faculty with the ability to consistently support high-end research laboratories and competitive graduate research assistantships.
- ▶ **Action:** Hire dedicated teaching faculty who excel in education and pedagogy.
- ▶ **Action:** Make College of Science programs increasingly accessible to non-traditional students by expanding high-quality online and evening course options.

Objective: Attract students from currently underutilized recruitment pools into our programs.

- ▶ **Action:** Develop and implement a promotional strategy with broad national appeal in recruitment and outreach.
- ▶ **Action:** Specify and implement communication plans that support potential and admitted students in navigating College of Science degree programs and support services.
- ▶ **Action:** Collaborate with the Graduate and Undergraduate Admissions Offices to increase the number of applicants from within and beyond our state.



CONNECT

Goal: Actively contribute to the communities in which we live; form and strengthen connections and collaborations that enable us to solve interdisciplinary scientific challenges.

Objective: Offer an educational experience that connects students with impactful opportunities beyond the traditional classroom.

- ▶ **Action:** Encourage and support the integration of professional certifications and credit-bearing internships into degree programs.
- ▶ **Action:** Broaden educational outreach through collaboration with community groups across a wide range of scientific disciplines.
- ▶ **Action:** Encourage and support student groups in the College of Science that establish connections with professional scientific organizations at state and national levels.

Objective: Help faculty and staff realize their full potential by offering appropriate professional development and growth opportunities.

- ▶ **Action:** Create and support engagement opportunities with community partners for faculty and postdoctoral researchers.

- ▶ **Action:** Provide faculty and graduate teaching assistants with regular training opportunities to hone their teaching skills.

- ▶ **Action:** Ensure the availability of well-defined and attractive career pathways for staff roles.

Objective: Build connections with students that extend beyond graduation.

- ▶ **Action:** Ensure representation of alumni on external advisory boards.
- ▶ **Action:** Establish regular and systematic communication with College of Science alumni.
- ▶ **Action:** Host regular events with College of Science alumni, bringing them back to campus.

IGNITE

Goal: Build and maintain an educational and research infrastructure that serves a preeminent role in scientific discovery and technological development in the State of Alabama.



Objective: Expand the laboratory infrastructure necessary for internationally competitive experimental research.

- ▶ **Action:** Strengthen collaboration with University Advancement to attract donor support for research instrumentation and equipment, particularly in the form of endowments.
- ▶ **Action:** Expand shared usage of high-end instrumentation for research and workforce education with community partners.
- ▶ **Action:** Seek funding for robust staff support to maintain research equipment and laboratories.

Objective: Strategically develop workforce pipelines for industry and government.

- ▶ **Action:** Facilitate the use of individual development and career plans (IDPs) by all College of Science students.
- ▶ **Action:** Establish robust and active relationships with all STEM-relevant recruitment agencies and hiring managers in the State of Alabama.
- ▶ **Action:** Develop financially self-sustaining non-degree training programs, such as specialized certifications, workshops, or demonstration projects in the College of Science that serve the local economy of North Alabama.

Objective: Leverage research and education synergies with community partners and leading research institutions across the nation.

- ▶ **Action:** Incentivize the protection and commercialization of intellectual property by faculty and students.
- ▶ **Action:** Facilitate the development of research collaboration and training between College of Science faculty and technology development groups and companies on Redstone Arsenal, NASA Marshall Space Flight Center, and Cummings Research Park.
- ▶ **Action:** Facilitate the development of up to three long-term (approximately 10 years) multidisciplinary research projects between College of Science faculty and leading research groups in other major research universities in Alabama and/or across the nation.



