COLLEGE OF EARTH, OCEAN, AND ATMOSPHERIC SCIENCES

STRATEGIC PLAN 2019-2024

Oregon State University
The Earth is a complex system shaped by natural and human forces. Oregon State University’s College of Earth, Ocean, and Atmospheric Sciences (CEOAS) is renowned for excellence in basic and applied research on Earth systems. Our work extends from the Pacific Northwest to both poles, from the bottom of the ocean to the upper reaches of the atmosphere, from human interactions with the environment to studies of other planets in our solar system. CEOAS faculty, staff, and students contribute to the success of the global science enterprise by serving as intellectual leaders, innovators, and stewards of critical research infrastructure for Oregon and the nation.

Academic programs in CEOAS are interwoven with research and combine classroom excellence with experiential learning, including extensive field experiences. Our graduate programs are recognized as among the best in the world. Leveraging this legacy, CEOAS is now growing novel undergraduate programs in Ocean Science, Climate Science, and Geography and Geospatial Science – complementing highly successful undergraduate programs in Geology and Environmental Sciences. Graduate programs include both disciplinary (Geology, Geography) and interdisciplinary majors (Marine Resource Management; Ocean, Earth, and Atmospheric Sciences) and successfully place students in academic, government, nonprofit, and private sector jobs.

**Vision**
Global recognition for sustained research excellence in the study of Earth’s past, present, and future; rigorous academic programs that train the next generation of scholars and practitioners; transformation of knowledge into solutions for our future.

**Mission**
To pursue knowledge of the Earth system, to apply this knowledge to build a more resilient future, to integrate research with academic programs, and to create global citizens and scholars. CEOAS contributes to OSU’s status as a premier research institution, serving Oregon and the world.

**Values**
Excellence in research, education, and global engagement to solve the environmental challenges of the 21st century and beyond.

Enterprise, innovation, and collaboration among faculty, staff, and students.

An inclusive organization where individuals and groups can thrive through meaningful leadership or professional opportunities, and where diverse approaches to scholarship and engagement are respected.
CHARTING A COURSE FOR THE FUTURE

CEOAS seeks to maintain its legacy of research excellence and forge stronger connections with local and global communities to meet the environmental challenges and opportunities of the future. CEOAS researchers probe the past and present to advance fundamental understanding of our lands, oceans, atmosphere, and poles. Our scientists seek to assess Earth's current state, develop predictive capability, and define how humans are impacted by, influence, and respond to environmental change. Our world-class programs enable our students to become engaged citizens, scholars, and problem-solvers. CEOAS brings a unique confluence of expertise and perspectives and provides the capacity to uncover new knowledge, identify and quantify risks, and build strategies to support resilient communities on local to global scales.

Our global leadership will be sustained and enhanced with five broad goals:

I. STRENGTHEN DISCIPLINARY RESEARCH AND CULTIVATE INTERDISCIPLINARY RESEARCH THAT ADVANCES KNOWLEDGE AND SERVES SOCIETY

Solutions to many of society’s challenges rely on connecting fundamental knowledge to social innovation. CEOAS will strengthen disciplinary expertise and embrace grand challenges at the confluence of disciplines that advance social well-being. CEOAS expertise spans the full range of Ocean Sciences, Atmospheric Sciences, Geological Sciences, Geography, Environmental Sciences, and Marine Resource Management. With this strength and breadth, and our stature as a leading institution, CEOAS will amplify its excellence in signature areas, including predicting and preparing for natural hazards, anticipating the pace of global change, developing strategies for resilient ecosystems and secure communities, and using observational data and modeling creatively to enhance understanding and guide management of the Earth as a system. These emerging challenges require a deep understanding at the intersection of natural and social science, and strong relationships with stakeholders and communities.

To enhance our impact, we will:

a. Expand research opportunities, focusing on signature initiatives, by recruiting world-class faculty, by creating and investing in new opportunities for research collaboration within and beyond OSU, by enhancing research investment, and by incentivizing and rewarding CEOAS faculty for seeking transdisciplinary opportunities for fundamental and applied research that aligns with societal needs.

b. Increase our direct engagement with stakeholders, especially in the realm of natural hazards and climate change by inviting co-design and co-development of research initiatives.

c. Improve the integration of interdisciplinary and outward-looking programs, such as the Oregon Climate Change Research Institute, Oregon Sea Grant, and the Marine Studies Initiative, into the research and academic mission of the College.

d. Strengthen research, education, and outreach by addressing diversity, inclusion, and social justice outcomes as a core value.
II. DELIVER AND EXPAND ACCESS TO INNOVATIVE EDUCATIONAL PROGRAMS

A scientifically literate generation will implement the solutions we devise today and solve the next generation of environmental challenges. We prepare our undergraduate and graduate students by nurturing curiosity and developing skills and knowledge in the classroom, laboratory, field, and at sea. Our students engage with faculty, staff, and each other in discovery and learning in Oregon, on every continent, and in every ocean.

With small classes, access to internationally renowned faculty, and opportunities for laboratory and field research, our on-campus undergraduate programs are among the most successful at OSU. Our Environmental Science program is broadly accessible to students everywhere through Extended Campus (Ecampus); a Geospatial Science degree will soon be available as an online degree. Our unique experiential learning opportunities are available to majors and non-majors, both on campus and online.

Whether they become leaders in academia, government, industry, or the nonprofit world, our graduate students are critical to our success and the intellectual capacity of the nation. Graduate students serve as important mentors for undergraduates. By their example and active engagement, they spark excitement that compels a new generation of students to consider science as a career. At the same time, graduate students receive unparalleled research training and experience from renowned CEOAS faculty, and grow to become the scholars, policymakers, and highly trained workforce of tomorrow. Strong graduate programs also contribute to the research productivity of the College and University, and ensure that OSU continues to climb in research ranking and impact. As such, support for graduate students and their education is one of our highest priorities.

Our vision of growth and continued excellence in our undergraduate and graduate programs requires continued investment in scholarships and endowments, regular updating of our academic programs, and an emphasis on scientific literacy, integrated thinking, and workforce development.

Toward these ends, we will:

a. Increase access to our rigorous academic programs and eminent faculty for OSU students, and regularly evaluate and improve the quality, accessibility, and efficiency of our undergraduate and graduate academic programs.

b. Broaden undergraduate participation in our innovative experiential learning and research opportunities, and ensure that all students develop the interdisciplinary knowledge, skills, and vision needed for diverse careers and future job markets.

c. Expand the geographic and demographic reach of our undergraduate and graduate academic programs by developing a coordinated program of outreach, student recruitment, and online opportunities.

d. Increase financial support for graduate students through endowed fellowships and current use funds, and improve our culture to be more inclusive, equitable, and welcoming for all students.
III. ATTRACT AND RETAIN EXCELLENT FACULTY

Whether in the classroom or in the field, faculty scholars provide a vibrant intellectual atmosphere where discoveries are made, students develop into engaged thinkers, and knowledge flows between the academy and society. CEOAS will achieve the discoveries of the future by attracting and nurturing highly talented faculty whose impact is intellectually profound and internationally renowned. CEOAS must maintain its entrepreneurial spirit and its enabling infrastructure by seeking new resources to support faculty positions, while developing strategies to invest in the scholars that will sustain our international ranking.

Philanthropic support is increasingly critical to grow university research programs, with top-flight institutions developing substantial endowments that support the research enterprise. CEOAS, with its international ranking and national research profile, has the stature to attract external investment from individuals and foundations and must increase efforts to secure philanthropic funds. Endowed chairs allow the College to attract visionary scholars who inspire and engage, to retain faculty who are widely sought elsewhere, and to remain competitive.

CEOAS faculty hiring strategies must balance the need to maintain core strength, confront interdisciplinary challenges, and enable our continued excellence in teaching, research, outreach, and engagement. Faculty searches also must emphasize the need to develop a more diverse faculty culture that supports our intellectual mission and our diversity goals. To achieve these goals, we will:

a. Focus fundraising efforts on endowed faculty chairs and provision funds to support new laboratories and innovative research.

b. Identify new faculty positions through a collaborative process that considers signature initiatives, disciplinary strengths, interdisciplinary frontiers, instructional needs, and diversity goals.

c. Revise faculty and staff reporting and evaluation practices to ensure that contributions to the College and the profession are recognized and rewarded.
IV. DEVELOP AND IMPROVE FACILITIES THAT ENABLE INNOVATION

CEOAS’ missions of research and education, and its global stature, are supported by advanced research infrastructure and facilities. Our investment in people is amplified when top-flight equipment in the laboratory and the field enables discovery and provides training for undergraduate and graduate students, giving them valuable skills for the marketplace. Our scientists imagine, conceive of, and build specialized laboratory facilities and seagoing capability using external federal and foundation support and institutional resources. Maintaining this legacy of discovery, innovation, and training requires continued investment in advanced analytical instrumentation, and increased physical space that supports the design, construction, staging, and storage of innovative field and laboratory equipment.

Building on past successes, and with an intention to both strengthen research and increase opportunities for students, we propose a comprehensive re-evaluation of our research infrastructure and analytical facilities. This initiative will include developing strategies to enhance visibility and marketing of our expertise and services, and increase availability of essential creative spaces for innovative instrument development, staging, and deployment. These efforts will provide students with hands-on experience designing, building, and maintaining instruments through mentorship by experienced faculty and staff.

In order to position CEOAS for its next decades of success in research and experiential learning, we will:

a. Comprehensively evaluate critical facilities needed to support the future research and education missions of CEOAS, develop a capital facilities plan (renovation, repurposing, and new space), and establish fundraising and financial goals that match the plan.

b. Prioritize in the capital facilities plan an Expedition Support Collaboratory to design, store, maintain, and stage major equipment for expeditions both on land and at sea, while engaging students in hands-on training for field research and education. The Collaboratory will also provide a tangible statement of the importance of scientific exploration to the success of CEOAS.

c. Improve coordination and marketing of biogeochemical and geoanalytical facilities to increase visibility, capacity, and service to the community.
V. DEVELOP AND SUPPORT OUR HUMAN CAPITAL

Excellent administrative and technical support staff sustain CEOAS’ proactive, solution-oriented culture and contribute to the success of the College by supporting academic programs, operations, and research. Our laboratory and marine technicians provide unique and highly skilled services to the College and broader scientific community, and play a key role in maintaining our scientific enterprise and national reputation. Recognizing the need to maintain capacity in critical technical areas, CEOAS must:

a. Develop innovative and cost-effective ways to retain technical and support staff, including professional development.

b. Increase job security by expanding and institutionalizing a technical staff sharing system that helps align funded projects with available technical staff time.

CEOAS has always maintained a collegial and collaborative atmosphere, a defining element of our success. As CEOAS continues to push the boundaries of knowledge, the College will work to sustain this collegial atmosphere by providing regular, thoughtful ways to gather, grow intellectually, and build community.