

1. Goal: Provide a transformative educational experience for all learners.

Continuing our mission to prepare future leaders in the science and sustainable use of the Earth's marine and terrestrial environments, the college awarded 120 undergraduate and 38 graduate degrees in AY 2016. In addition, 79 students earned a certificate of advanced training in GIScience and water conflict management.

CEOAS is developing, delivering and strengthening impactful programs that:

Enhance the learning environment to raise and equalize student success.

- The college remains committed to facilitating student success across our academic programs. In addition to maintaining a competent team of academic advisors, we instituted a pilot Academic Mentoring Program (CEOAS AMP) that connected 27 graduate mentors with 30 undergraduate mentees. Undergraduate mentees have the opportunity to learn about graduate school and to explore academic and career pathways, while graduate mentors can develop mentoring and communication skills that help them in their professional and academic pursuits. Based on the success of this initiative, we intend to offer an expanded version of the program in the coming year.
- We also have engaged the college's board of advisors in offering professional development workshops for both undergraduate and graduate students. These provide critical exposure for our students to professionals in a variety of careers.

Make high-impact learning a hallmark of undergraduate education (resulting in responsible citizenship and global competitiveness).

- The college prides itself on the integration of experiential learning throughout the undergraduate curricula. Intensive, field-based education has long been a centerpiece of CEOAS academic programs. For example, geology majors participate in two field courses, taught in Bishop, CA and Mitchell, OR. This year, field course offerings have expanded to the Ocean Science option (see below), as well as to the Climate Science option, where students collect meteorological and atmospheric data from the coast to central Oregon.
- The college partnered with the Honors College to offer a nine-day field trip on the Geology of Oregon as a Science, Technology and Society Bacc Core course.
- A hallmark of the Ocean Science option is the introductory class in Field Oceanography, an annual experiential learning course that enables undergraduates to learn science at sea. In 2016, 14 students participated in a five-day cruise off the coast of California aboard R/V *Oceanus*, OSU's 177-ft-long research vessel, where they conducted a series of experiments designed to engage and provide hands-on exposure to modern techniques in marine science.
- CEOAS continues to coordinate a successful NSF-funded Research Experiences for Undergraduates (REU) program, hosting students in labs on the Corvallis campus and at the Hatfield Marine Science Center in Newport. This program supported 18 undergraduates in the summer of 2016, all of whom conducted individual and independent research projects.

Advance learning through course design, assessment and faculty development.

- In 2016, the college finalized the development of a new undergraduate major in geography and geospatial science. This represents the culmination of several years of effort and significant investment in faculty. The program revitalizes curricular offerings in the discipline, ensuring the college continues to train future leaders in geospatial approaches and technologies to understand pressing issues related to water, environmental science, and social and environmental justice.
- The geology program developed and offered a new Bacc Core course in Natural Disasters (GEO 100), designed to engage students in understanding and appreciating how earth science can inform societal decisions regarding natural hazards.

Grow online education and explore new pedagogical models.

- College enrollment in e-campus courses has held steady at ~9,000 student credit hours per year, but we anticipate growth over the next two to three years as the popular certificate program in GIScience becomes available online.

Enhance and ensure the success of international students.

- The college is pursuing a plan to develop a pilot student exchange program with the China University of Geosciences, Wuhan. We anticipate an initial cohort of students will participate as soon as 2018.

Enhance our comprehensive Healthy Campus Initiative.

- Our academic focus on earth system science includes essential information regarding a sustainable planet and its relationship to human health. Through our small class sizes, emphasis on experiential learning, and numerous student clubs, we ensure multiple points of connection and community for undergraduate and graduate students. Moreover, CEOAS strives to create a culture of inclusion, conducting several trainings on implicit bias, sexual harassment prevention and other topics. Several faculty have participated in the ADVANCE seminar, and one of our associate deans is a co-PI of ADVANCE.

Expand strategies to recruit diverse and high-achieving students.

- The college has employed strategies to recruit a diverse community of scholars across a range of programs.
 - At the graduate level, CEOAS was instrumental in initiating the Women in Marine Sciences group, an organization which unites women and underrepresented students and staff across the marine science disciplines.
 - At the undergraduate level, the GeoBridge program establishes a pathway into the geosciences between Linn-Benton Community College and Oregon State, and provides support for a seamless transition and progression through the earth sciences major.

- The college continues to support and participate in programs designed to facilitate a diverse and inclusive community, including the Pacific NW Louis Stokes Alliance for Minority Participation conference and research symposium, the Society for Advancement of Chicanos/Hispanics and Native Americans in Science's national conference, and the QuakeUp Earthquake Preparedness Event.

2. Goal: Demonstrate leadership in research, scholarship and creativity while enhancing preeminence in the three signature areas of distinction.

Impactful programs/efforts across foundational areas as well as signature areas to:

Attract and retain high-quality faculty.

- The college hired seven assistant professors in AY 2016-17, including one female faculty member, one individual of color and one dual-career hire. We also hired a well-qualified female faculty member as Dean of the college. We are currently in the process of hiring a military veteran and attracting the partner of a female faculty member in another college.
- In order to retain and support our high-quality faculty, we initiated a new faculty development program to increase faculty productivity. The program components are:
 - Workshops and panel discussions (open to all faculty) on topics such as CAREER proposal writing or interactions with federal program managers.
 - Individual meetings by the new Associate Dean for Research and Faculty Advancement with junior faculty members to address concerns specific to early-career status.
 - Individual meetings by the Associate Dean for Strategic Initiatives with senior faculty members who may need support in revitalizing or retooling their research programs.
- CEOAS secured funding for the construction and management of three Regional Class Research Vessels (RCRVs). This is the largest award in OSU's history (\$365M) and will enhance our ability to attract and retain the highest quality faculty.
- CEOAS also secured funds to expand its Marine Geology Repository to assume the curatorial stewardship of the Antarctic and Southern Ocean National Collection of Rock and Sediment Cores. The resulting repository will place CEOAS further at the forefront of earth science institutions and help attract and retain excellent faculty.

Expand and cultivate transdisciplinary research (on campus or through partnerships).

- CEOAS initiated OSU's new NSF Research Traineeship (NRT) program in Risk and Uncertainty Quantification in marine science and policy. The program supports transdisciplinary teams of graduate students and faculty from the CEOAS, College of Science, College of Engineering, College of Liberal Arts, and College of Agriculture, among others. CEOAS and the College of Public Health and Human Sciences (CPPHS) jointly held an "Ignite" session of short faculty talks designed to stimulate transdisciplinary research and collaboration in the field of environmental science and public health.

Increase the quality, capacity and impact of graduate programs.

- The NRT program led by CEOAS faculty is implementing new innovative approaches to graduate education that are affecting both the quantity and quality of graduate students on campus. The transdisciplinary training emphasizes actionable and societally relevant science, and broadens the employment potential of participating students.

Expand and increase high-profile programs in the arts and humanities.

- CEOAS has contributed intellectually to the efforts to connect the arts and sciences through the Marine Studies Initiative.
- CEOAS faculty contributed to and participated in the “State of the Coast 2016” conference that featured a theme of “Communicating the Coast through Art and Science.”

In other ways advance leadership in research, scholarship and creativity.

- CEOAS continues to be very successful in securing research funding through competitive grants, generating \$44M in 2016-17. By comparison, CEOAS E&G FY17 expenditures were \$16,170,513 (FY17 Base Budget was \$14,381,039), amounting to a roughly 3x leveraging of state funds. Note that the majority of these funds accrue the full indirect cost rate. CEOAS faculty continue to have high research output, including over 200 peer-reviewed publications in 2016.
- CEOAS generated approximately 25 science news releases through the OSU News & Research Communications office, including stories about global water conflict, the Earth’s magnetic field and biodiversity in the Arctic and the Antarctic.
- CEOAS has successfully competed for the construction and management of three new Regional Class Research Vessels (RCRVs). This is the largest external award in OSU’s history.
- CEOAS is competing for funds to continue operations of the Ocean Observing Initiative (OOI) instrumentation. The award, if made, will commence in 2018 and will attract \$8M in external grant funds to the College.
- CEOAS is competing for funds from the Murdock Charitable Trust to enhance its analytical facilities. The resulting mass spectrometer instruments will serve the entire OSU campus.

3. Goal: Strengthen impact and reach throughout Oregon and beyond.

Position OSU’s outreach and engagement programs as learning laboratories that promote high-impact learning and effectively utilize university research.

- CEOAS hosted both the regional and National Ocean Sciences Bowl in AY 2016-17. The NOSB is a quiz-style ocean science competition where high school participants from across the country test their ocean knowledge. CEOAS faculty were prominent in the event as guest speakers and panelists.
- CEOAS participates in NOAA’s Teacher at Sea program, which provides a unique environment for learning and teaching by sending kindergarten through college-level teachers to sea aboard NOAA research and survey ships to work under the tutelage of

scientists and crew. Then, armed with new understanding and experience, teachers bring this knowledge back to their classrooms. During 2016-17, two K-12 teachers participated in an Arctic cruise led by Assistant Professor Laurie Juranek. Their goal will be to educate students on the region's chemistry, ecology and driving forces of primary productivity.

- CEOAS hosted the 40th anniversary of the discovery of hydrothermal vents. The event, which drew community members, scientists, and current and past students, celebrated how this momentous discovery, made by OSU scientists and collaborators, spawned new fields of study and changed our understanding of the evolution of earth, and life.

Grow rural and urban regional centers to advance social progress

- CEOAS faculty and students have shared their science widely across the state of Oregon. For example, faculty worked directly with students from Tillamook High School, assisting them with science fair projects; they also mentored students from Bend in a robotics competition.

Drive economic development

- CEOAS continues to operate and maintain ocean infrastructure that benefits both the Corvallis and Newport economies. This includes operating three ocean-going research vessels and the Endurance Array of the Ocean Observatories Initiative that together contribute several million dollars annually to the Newport economy.

Increase study abroad and strategic international research partnerships.

- OSU/CEOAS signed a letter of collaboration with the University of Stavanger in Norway to establish cooperative teaching and research activities. This includes faculty and student exchanges as well as joint research initiatives.
- In cooperation with the UNESCO-IHE Institute for Water Education in the Netherlands and the University for Peace (UPEACE) in Costa Rica, CEOAS continued to operate a joint education program in water cooperation and peace. The goal of the initiative is to broaden the scope of approach to conflict and peace, provide a more theoretical dimension to conflict, engage multi-level scales of conflict dimensions and strengthen skills through highly experiential learning opportunities.

Engage alumni and other external partners to advance our goals.

- CEOAS published its annual alumni magazine, Elements, which was mailed to nearly 6,000 alumni, supporters and friends. The publication included a mix of research stories and profiles that demonstrated our contribution to key coastal and earth science issues, as well as our commitment to training future scientists and practitioners. A twice-annual alumni e-newsletter was sent to 3,000 people. These communications have established regular and vital touch points with our graduates.
- The college partnered with OSU Alumni Association (OSUAA) to jointly hire a CEOAS College Alumni Relations Director (CARD). Through the CARD position, a strategic plan for alumni relations was developed, and an infrastructure established for alumni outreach and engagement within the college, including an annual calendar of opportunities for alumni and friends to participate and serve as volunteers.

- A CEOAS Advancement Team was established and is building an integrated annual plan to include development and engagement goals and objectives to advance key initiatives. Collaborators include OSUAA and OSUF partners, CEOAS Research and Publishing Manager and the CEOAS Dean.
- CEOAS hosted its annual alumni and friends gathering at the American Geophysical Union (AGU) conference in San Francisco, CA. In 2016, 150 faculty, students, alumni and friends attended—double the attendance from the previous year.
- CEOAS hosted its first tailgater and Homecoming celebration in 2016. Roughly 75 faculty, alumni and friends attended.
- University event participation: CEOAS students and staff showcased research and engaged with alumni and external partners at the annual OSU State of the University address in Portland and at OSU Golden Jubilee.
- Alumni to student mentoring: CEOAS hosted our inaugural OSUAA/CEOAS 5 under 5 Alumni Panel where five college alumni, less than five years out, come to campus to speak to current students. The program was a well-received success and will be a recurring annual event. Additionally, the CEOAS Board of Advisors and other select alumni hosted a student roundtable in the fall and one-on-one “speed interviews” in the spring.
- CEOAS Board of Advisors met semi-annually in the fall and spring on campus. The board mission is to use the expertise and resources of its members to benefit CEOAS students, staff and faculty. The majority of board members are alumni, working in industry. Board members are strong external partners and many live and work in regions of targeted outreach such as Seattle, Portland and California.

Advance impact and reach in other ways.

- In addition to key outreach and engagement programs listed above, CEOAS students, staff and faculty participated in a variety of community outreach activities, bringing science to da Vinci Days, the Corvallis farmer’s market, OSU’s Family Weekend, the annual Hatfield Marine Science Day, Science Pub, the annual Condon and Marston lectures and other venues.
- CEOAS faculty have made numerous visits to Capitol Hill, visiting Oregon’s delegation on several occasions to brief them on the Regional Class Research Vessel, ocean acidification, technology for ocean observations, and climate change. These visits included participating in Climate Day organized by the American Meteorological Society, and testimony to the Climate Solution Caucus.
- A CEOAS faculty member began a shellfish monitoring network that allows oyster growers to upload images of treated oysters to OSU for evaluation. Participating shellfish growers hail from the West Coast, Alaska, British Columbia, the Atlantic Coast and France.
- CEOAS engaged online audiences through videos and multi-media productions. We launched a “Science in 60” series, featuring dynamic students describing an important finding or phenomenon, while continuing to release longer-form videos on topics such as the near-shore coastal science. Our Graduate Student Voices featured an up-close portrait of life as a graduate student and the importance and impact of their work.

4. A summary of key initiatives that align with these commitments.

Increasing diversity of faculty, staff and students.

- CEOAS approaches all recruitment activities with an overall goal of attracting a larger and more diverse student and faculty body. Efforts to enhance student diversity include participation in Juntos Day, SACNAS annual conferences, 4H-STEM programs, the Louis Stokes Alliance for Minority Participation and related activities.
- Our last two faculty recruitments produced a diverse pool of final candidates, with hires likely in two underrepresented categories. We have partnered with other colleges in dual career hiring efforts that have increased the other college's diversity but not our own. CEOAS recognizes that such partnerships are critical to the overall health and well-being of the university.
- CEOAS hired three new associate deans (one hire was initiated but not completed during the reporting period of this document). Two are participants in the NSF ADVANCE program, and another is a co-PI and facilitator of the ADVANCE seminar. CEOAS is also developing, in association with graduate students, a faculty development program around diversity, inclusion and social justice.
- CEOAS has initiated a study of equity issues for postdocs within the college and is poised to enact structural changes in support of opportunities for postdocs in the coming academic year.

Developing comprehensive work-life balance programs.

- The Dean's Office is highly supportive of work-life balance, and deeply respects the need for employees to take time off for personal reasons or to care for loved ones through the Family Medical Leave Act. No requests for leave have been denied. Concern for individuals is conveyed through personal interactions as circumstances dictate.

Stewardship of resources – Enhancing resources through private philanthropy.

- CEOAS has worked closely with the OSU Foundation to enhance philanthropic giving and is planning a new effort to raise funds for a graduate student endowment. CEOAS leadership is responsive to requests from the OSUF to meet with donors and attend events on behalf of the university leadership. To date, annual gifts to CEOAS reached \$4.2M, including gifts, pledges and grants. This level of giving is consistent with an increased focus on philanthropy that began under Interim Dean Haggerty.
- CEOAS has been a strong partner with the Marine Studies Initiative to help raise funds for the MSI building on the Hatfield campus, with fundraising goals now met. With the encouragement of the Dean's Office, CEOAS faculty members participated in program development activities to further define MSI themes and directions and enhance the success of the initiative.

Develop an integrated infrastructure recapitalization plan.

- Laboratory renovations are largely responsive to the needs of new hires and grant opportunities. We anticipate three significant faculty laboratory renovations in the next two years. One laboratory renovation will accommodate a new hire in trace metal oceanography, and two additional renovations will accommodate new instruments in the Ice Core Laboratory and the Stable Isotope Laboratory. These latter renovations are part of a grant application to the Murdock Charitable Trust. We received positive feedback on the grant application during the recent site review.
- CEOAS, in partnership with Capital Planning, is supporting a complete renovation of the Nypro Facility to accommodate the Antarctic and Marine Core Repository and the RCRV project. Planning is complete, and renovation is slated to start within the next few weeks, with an expected completion date of March 2018.
- CEOAS is working with Capital Planning to install a generator to keep hoods and critical instruments running during power outages.

Promote sustainable built and natural environments.

- CEOAS is a national leader in the study of the earth system and the human dimension of environmental change. Through research, education and outreach, we provide knowledge and decision support to stakeholders. This includes working with coastal communities to understand risks posed by sea level rise, enhance aquaculture success and manage fisheries, as well as working with members of Congress to craft legislation that is based in sound science.

Balance economic and environmental improvements in the region.

- CEOAS faculty provide scientific findings of local and national relevance to stakeholders who then use that knowledge in decision-making. Specific examples include advice to shellfish growers and coastal planners regarding development activities.

Technology as a strategic asset.

- CEOAS faculty have integrated a Jupyter notebook server for use across the climate and related earth sciences curriculum. The interface is an open-source, web-based platform that allows students to create and share documents that contain “live” code, equations, visualizations and documents. This activity was enabled by a grant from NCAR.

Share relevant information to make effective decisions.

- CEOAS leadership routinely shares information regarding resource management with the faculty. The goal of this effort is to help stakeholders understand the basis for decisions that impact the distribution of resources and the allocation of new faculty lines. For example, when the FY18 budget was unveiled, the impact of the RCM budget model was discussed at an all-faculty meeting. The goal was to understand how the model is constructed, the

potential impact on the college budget, and strategies to work within this new budget framework to improve college finances.

Invest in information technology to enable educational innovation.

- CEOAS has long been a leader in the application of high-performance computing and remote sensing applications in the earth sciences. The college is exploring ways in which these resources can be leveraged to enable the instructional mission of its faculty. A recent example is the effort to bring tablet-based mapping systems into field instruction in the Geology option.
- Our new Geospatial Analysis and VisualiZation for Education (GAZE) laboratory features a 12 ft. by 7 ft. hyperwall, an immersive grid of computer monitors backed by a powerful infrastructure that will allow researchers and students to model, capture and visualize geospatial information in near real time.

Enhance the quality of service in administrative processes.

Improved Business Process:

- CEOAS is a partner in the trial run of e-procurement, a robust online one-stop marketplace for all goods and services that supports transparency and accountability. Additionally, CEOAS has taken advantage of DocSign to streamline all processes requiring signatures, including the processing of HR job forms, travel claims, invoice approvals and labor redistributions.
- CEOAS business office continues to improve processes supporting grants, including a major overhaul of program support to ship operations, creating a hybrid service support model and developing a robust responsive contract invoice payment process for RCRV.

Improved HR Services:

- The CEOAS leadership team had a special meeting with central HR to identify impedances to hiring processes, with the overall goal of streamlining and reducing frustration. Specific issues identified by the college and addressed included reducing touch points by assigning one point of contact for creating or modifying positions descriptions.
- HR has developed and is implementing outreach plans for 2017-2018 to better understand the business and research needs of our customers. This will aid in providing enhanced human resource services to advance the recruitment and retention of the best faculty and staff.
- In addition, HR is specifically addressing response times, as well as communication content, method and frequency to the college in areas such as recruitment and hiring processes; summer appointments; and other annual human resource processes (e.g., contract renewals).
- A central lead initiative to improve student recruitment and hiring was implemented that enabled minimized resources and standardize the hiring processes to allow for flexibility.