

College of Geosciences Strategic Plan 2015-2020

Forward from the Dean

This strategic plan goes into effect as the College of Geosciences, founded in 1965, celebrates its 50th anniversary. That milestone has served as an opportunity to reflect on past accomplishments and to create a vision and roadmap for how we will lead research and education in the Geosciences in the future. As I stated in the forward to the last strategic plan, the science and technology of the discipline have never been so central to current national and international dialog. Energy, water, climate, the environment, and questions about resiliency and sustainable practices are front and center in government, the private sector and local communities. With a mission to advance new understandings of Earth's Systems and apply them to the needs of society and to prepare the next generation of geoscientists to conduct research, to find and develop natural resources, and to measure and respond to environmental change, the College of Geosciences aspires to lead the state and the nation through innovative teaching, research, and engagement programs.

The plan is an umbrella and a high level roadmap to how the College of Geosciences will move forward in the next five years. The planning process began in Spring 2014, during which units within the College developed their own strategic plans. After these were finalized in late spring, the Dean's executive team analyzed all the unit plans for common themes and drew up an initial draft of goals and action plans to guide College-level decision-making. This draft was then reviewed with the College Executive Committee and with faculty at meetings over the course of the fall semester. Once initial University-level planning was completed in mid-2015, we revisited the College plan and updated it in light of university priorities. This document was then put out for review by faculty, revised accordingly and approved by the College Executive Committee on *date*.

What has emerged is a suite of goals and action plans arranged around themes of education, research, resources and advancement. We will measure our progress through the annual scorecard process led by the provost's office and through funding agency reviews such as those conducted by NOAA and the NSF for The Texas Sea Grant and IODP, respectively. For academic units, the scorecards measure a variety of key indicators related to teaching and advising, research and scholarship, and engagement and service. The goals and action plans laid out here are designed to make substantive progress toward targets set in the scorecards.

Kate C. Miller
Dean

Vision

To lead in establishing the geosciences as the defining scientific discipline of the 21st century. The sustainable human society of the future depends more on innovation and application of discovery in the geosciences than on any other discipline. Our field is essential to solving society's grand challenges – global climate change, air and water quality, and adequate energy and food supplies.

By lead, we mean:

1. Produce graduates of diverse backgrounds who rise to be leaders in private industry, government, and education.
2. Produce interdisciplinary, innovative, technologically advanced, research that is widely translated and communicated for the benefit of a global society.
3. Prepare all students for thoughtful, life-long participation in public issues related to science, technology, and society.

Mission

To advance new understandings of Earth's Systems and apply them to the needs of society. To prepare the next generation of geoscientists to conduct research, to find and develop natural resources, and to measure and respond to environmental change.

Values

As a community of geoscientists we are committed to:

- Being stewards of planet Earth and assuring its sustainability
- Upholding the University's core values of excellence, integrity, leadership, loyalty, respect, and selfless service
- Ensuring scientific integrity and the highest standards of ethics
- Growing the geoscience workforce through graduates that leave with outstanding technical skills, and who are innovative, strong communicators, life-long learners, and leaders
- Producing applied research that serves the state and nation
- Producing basic research and discoveries about our planet
- Fostering a work environment of respect and celebration of differences built on an understanding that through diversity comes strength and excellence;
- Being careful stewards of state, federal, and donor funds

Goals and Action Plans

This portion of the document outlines background, motivations, goals and action plans for each of the College's priority areas: *Education, Research, Resources, and Advancement.*

Education

The College's role in education spans general education students seeking introductory knowledge of Geosciences, undergraduate majors, those seeking a graduate professional credential - typically and M.S., those seeking a career in research that requires the Ph.D., as well as informal education of K-12 students and the public at large. A range of introductory course offerings is central to our vision of preparing all students for thoughtful, life-long participation in public issues related to science, technology, and society, especially in an era when an understanding is essential to ensuring that our society remains resilient and prosperous.

As a profession, geoscience is in the midst of a major transition in its workforce, in which the supply of geoscientists is projected to be a third of the projected demand in 8 years time, as projected by the Bureau of Labor Statistics and the American Geosciences Institute. As a national center of education in the Geosciences, Texas A&M plays a critical role in producing future professionals of diverse backgrounds. These Geoscience graduates, must have many skills and habits of mind in common, such as being able to think about the Earth system from an integrated perspective, be experienced at reasoning through the spatial and temporal evolution of complex systems, and having strong communication skills.

The master's degree has long been the preferred qualification for professional geoscientists outside of research. As science and technology have advanced, the need for master's level professionals has become even greater, and provides reason for the College to further distinguish its programs in this area. At the same time, Ph.D. graduates must be equipped to succeed as faculty members at high research activity academic institutions and government agencies.

Since, a sustainable and resilient human society of the future depends greatly on innovation and application of discovery in the geosciences, it is imperative that the College work to translate its research and education activities for society and communities, through its faculty and centers, such as the Office of the State Climatologist and the Texas Sea Grant.

The following goals and action plans reflect the background and motivations outlined in the preceding paragraphs. Each goal is numbered. Steps to achieve those goals are bulleted.

1. Expand the diversity and number of courses providing high impact learning experiences for undergraduate students and increase student participation
 - Set goals and action plans for expanding high impact learning experiences that leverage on existing faculty research, and outreach and engagement as well as large infrastructure and programs (e.g. Sea Grant, IODP, GERG)
 - Expand enrollment in existing and new HILE courses through increased advertisement and linking HILE to retention and incorporating into degree plans
 - Implement structure for expanding internships, externships, research experiences, study abroad and service learning
 - Implement new programs to meet college QEP of Commit to Communicate
 - Continuously assess progress in increasing diversity and number of high impact experiences and the effectiveness of those programs

2. Improve recruitment of students into our degree programs, with emphasis on increasing the academic quality and diversity of incoming students
 - Revise recruitment programs to include expanded geographical reach, clear pathways to the Geosciences and partnership with Prospective Student Centers
 - Complete and implement plans for recruitment of transfer students from community colleges and other schools within the Texas A&M University System
 - Improve visibility of the Geosciences to change of major students
 - Prepare and implement plans to enhance student services as a recruiting tool including a freshman bridge and tutoring program
 - Streamline and automate graduate recruitment and admissions to the college
 - Consider college-wide process for graduate admissions to allow students to find the best departmental fit for their interests
3. Substantially grow the number of undergraduate students from other colleges who choose courses in the College of Geosciences to fulfill core curriculum requirements or obtain certificates.
 - Assist departments and programs in marketing introductory courses to non-majors
 - Review and modernize curricula and certificate programs targeted at non-majors
 - Develop online versions of existing core curriculum courses to meet demand and compensate for limits on classrooms
4. Offer professional new masters degree options
 - Understand the online education landscape in the geosciences and assess the viability of offering programs
 - Implement online programs based on market research and employer needs
 - Develop strategic partnerships and explore the viability of on-ground, offsite professional graduate programs
 - Enhance the visibility of on-campus professional programs to address market demands
5. Enhance existing and explore compelling interdisciplinary degree programs.
 - Expand college involvement in the management and growth of existing MARB and WMHS degree programs
 - Develop strategic international partnerships like the OUC dual degree program to support strong, emerging research and high-impact learning experiences.
6. Implement effective degree program assessments that both produce evidence of student achievement of expected learning and other academic outcomes and are used as a basis for improving programs.
 - Implement a curriculum evaluation and development program that aligns to University and College QEP
7. Assure that instructional practices across the college are aligned with latest research in effective practices, including different learning styles related to diversity

- Establish seminar and workshop opportunities on latest research in effective practices
 - Establish a core group of DBER-competent faculty within the college by 2020 to drive the focus on research-based, outcomes-based teaching and curricular design
8. Improve the retention of students and reduce the time it takes for students to complete their degrees
 - Continuously monitor students' time to degree, and implement changes in degree requirements, course availability, milestones for graduate students, etc. as appropriate
 - Continue to implement and monitor current retention programs and enhance as needed through integration with high impact learning experiences
 9. Students acquire the knowledge, skills and research practices to be competitive and effective in careers and to meet stakeholder expectations
 - Conduct stakeholder assessment(s) to understand knowledge, skills, and research practices valued by different communities (industries; federal and state agencies; other key employees)
 10. Build modern teaching facilities
 - Establish a world-class student learning center, hub of a close-knit community within the TAMU campus
 - Build modern teaching labs, especially to support upper division undergraduate curricula.

Research

The College looks to expand its role in research that spans basic understandings of the Earth Systems, to discovery and development of natural resources, the nature of environmental change, and human response to those changes that enhance resiliency and sustainability. The college will build on its existing strengths in interdisciplinary collaboration, analysis and modeling of large data sets, and the fact that ours is a global science in a globalized world. Choosing research topics that have impact as measured by citations and interest from the news media are critical to elevating the recognition of our contributions to the science.

The following goals and action plans reflect the background and motivations outlined in the preceding paragraphs. Each goal is numbered. Steps to achieve those goals are bulleted.

1. Advance research in basic and applied geosciences
 - Identify seed funding for high-risk, high-impact research
 - Seek endowments for outstanding faculty, and research centers
 - Ensure faculty advancement in skills and knowledge through career development
2. Elevate the impact of our research, especially that which directly benefits society and enhances economic well-being through improved outreach and engagement
 - Increase the number of articles published in highly-cited journals such as Nature, and Science
 - Increase the number of faculty nominated for and receiving highly prestigious awards for their research
 - Increase the number of invited presentations at national and international meetings

- Increase the number of faculty serving on national and international advisory committees.
3. Establish major multidisciplinary research initiatives that distinguish the college and university
 - Establish the recently created Center for Geospatial Sciences, Applications and Technology to advance geoinformatics efforts across the university
 - Successfully implement the SmartGulf initiative to advance our understanding of the natural processes associated with the Gulf of Mexico
 - Continue development of the Texas Water Observatory to establish a network of real-time sensors in the State of Texas that integrate ground, surface and atmospheric water models.
 - Develop a partnership with industry focused understanding unconventional reservoirs to maximize the reservoir potential
 4. Strengthen the college's research connectivity
 - Integrate IODP Staff Scientists in research and teaching collaborations with college faculty
 - Grow Ocean Sciences research by strengthening collaborations between College Station and TAMUG
 - Contribute to high impact learning programs by increase the opportunities for teaching through research.
 - Establish and grow strategic partnerships with other universities, private industry, and government in the national
 - Grow research relationships with major corporations, and government labs and agencies such as NOAA and NASA
 5. Define the international footprint for the college by identifies specific foreign institutions for long-term collaborations, and by establishing MOUs.
 - Establish an academic and research partnership with institutions in Europe
 - Continue to build existing relationships with universities in China
 - Establish a partnership with universities in Mexico and with CONACYT
 6. Modernize and advance the College and University's research infrastructure
 - Renovate O&M/Halbouty Buildings allowing expansion of faculty and research programs
 - Plan for a new building to house the entire college
 - Build an IT infrastructure to support the research-computing environment of the future.

Resources

Strategic investments in human, fiscal, physical, and information resources together with fostering appropriate and effective internal organizational and decision-making structures are essential to achieving the college's core mission.

The college seeks to foster a workplace environment that is welcoming, productive, and rewarding for all employees. Key factors in attaining this goal are an emphasis respect for individual differences, adequate training in policies, procedures, and software, an excellent performance evaluation process as well as skills in conflict resolution and teamwork.

The college is highly dependent on state funding and tuition to support its educational activities and on federal funding for its research activities. Acknowledging that these funding sources will likely remain flat or diminish in the future, we must look to grow the portion of our activities that are funded from other sources.

Maintenance, renovation, and planning for new facilities and infrastructure are essential to a productive work environment for the long term. At present, the college has an adequate amount of space, but the quality of that space is generally fair to poor. In the coming years we will need to carefully weigh decisions to renovate against the forward progress of planning for new facilities for the College and the University. The need for new hardware and system support of the college's information technology enterprise will continue to grow rapidly. We will need to be well positioned to anticipate and respond to this growth.

The following goals and action plans reflect the background and motivations outlined in the preceding paragraphs. Each goal is numbered. Steps to achieve those goals are bulleted.

1. Diversify the fiscal resource base
 - Substantially increase success in partnering with foundations and corporations
 - Build and execute a comprehensive fundraising plan in collaboration with the Texas A&M Development Foundation
2. Sustain a workplace environment that attracts and retains diverse faculty, students and staff of the highest quality.
 - Regularly measure workplace climate at the survey level. Engage College task force convened specifically to analyze current results and report concerns to the Dean
 - Routinely commission focus group and interview investigations as deemed necessary
 - Take action on findings by crafting effective change strategies and administrative procedures to improve problem areas
 - Address salary equity on a regular basis as budget permits
3. Provide robust, targeted career development opportunities for faculty and staff
 - Identify needs and provide professional development for faculty and staff to ensure steady career growth and satisfaction
 - Grow leadership skills among faculty and staff through participation in periodic workshops and targeted job assignments
 - Develop a leadership succession plan
4. Maximize institutional effectiveness by improving administrative processes and resource management
 - Increase productivity by carefully monitoring available resources and matching them to

- strategic needs and priorities.
- Develop more regular and effective communications about processes and resources through a variety of mechanisms such as town hall meetings, emails, newsletters, and blogs.
 - Identify and eliminate bottlenecks related to process and decision-making
 - Clarify roles and consolidate functions to reduce duplication of effort and costs
 - Formalize expectations for periodic training and career development of employees
5. Effectively balance maintenance and protection of existing infrastructure and investment in new infrastructure
- Plan for a new building that will ideally unite College units under one roof and provide the modern laboratory, teaching, and collaborative spaces within the next five years.
 - Prioritize renovations of existing infrastructure in terms of critical needs over the next 5 years, the minimum time frame needed to propose, garner approval, and build a new building
 - Develop and execute a plan for improving management of information technology support and infrastructure

Advancement

The College of Geosciences has integrated fundraising, alumni relations, and communications and marketing functions into an advancement team to more effectively raise the visibility of our students and faculty and to reach out to key stakeholders. Important and diverse audiences for this effort are prospective students, former students, the Texas A&M community, peer institutions, corporations, foundations, government agencies, and the public at large. The advancement effort supports recruitment of top students, publicity for high-impact research findings and public engagement activities, publicity for accomplishments of faculty, student, and staff members, and fundraising. The long-term goal is to broaden visibility and deepen relationships with audiences of all sorts.

The following goals and action plans reflect the background and motivations outlined in the preceding paragraphs. Each goal is numbered. Steps to achieve those goals are bulleted.

1. Build and maintain a strong on-line presence focused on external audiences
 - Launch and maintain new website with emphasis on external audiences
 - Develop and adapt social media strategies to communicate with different target groups using different platforms (e. g. Instagram and Twitter for younger audiences; LinkedIn for new professionals seeking networking opportunities).
 - Publish news stories about student and faculty achievements
2. Publish a variety of materials for communication with a range of audiences
 - Produce monthly electronic newsletters: one directed at internal audiences (ie. faculty, students and staff of the college), another directed at external audiences.
 - Produce promotional materials for recruitment of freshmen, transfer students and

- graduate students
 - Produce a variety of informational brochures on departments, centers, and research strengths
 - Produce development-specific materials that communicate funding priorities to potential donors
 - Publish other, longer, documents such as a quarterly or semi-annual college magazine and/or an annual report
 - Review impact of publications and adjust strategy, regularly
3. Support processes for being responsive to external media requests
 - Partner with University Marketing and Communications to publicize research and outreach of interest to outside stakeholders
 - Partner with University Marketing and Communications, the TAMUS communications office and TAMUG Galveston to publicize research and outreach of interest to outside stakeholders
 - Respond promptly to inquiries from the news media
 4. Create and execute a plan for raising major gifts to achieve capital campaign goals specific to the college
 - Engage college leadership and faculty in development activities
 - Set fundraising priorities for the College and individual units
 - Maintain reliable stewardship processes for acknowledging and thanking donors
 - Maintain culture of transparency and accountability in using donor funds in accordance with donors directions
 - Expand and update contact database on a regular basis
 - Engage potential donors through a variety of events such as tailgates, campus receptions, symposia and regional outreach events
 - Establish college awards/ceremonies to honor outstanding former students
 5. Effectively engage the Advisory Councils in advocacy and philanthropy for the benefit of the college and its students.
 - Strategically grow size of Advisory Councils
 - Involve council members with current students through mechanisms such as mentorship programs, internships, participation on career panels, and field or other high impact learning experiences
 - Engage council members in raising the visibility of the College and advocating for its mission and goals
 - Ask council members to lead by example by providing introductions to potential future donors and making their own gifts to the College.