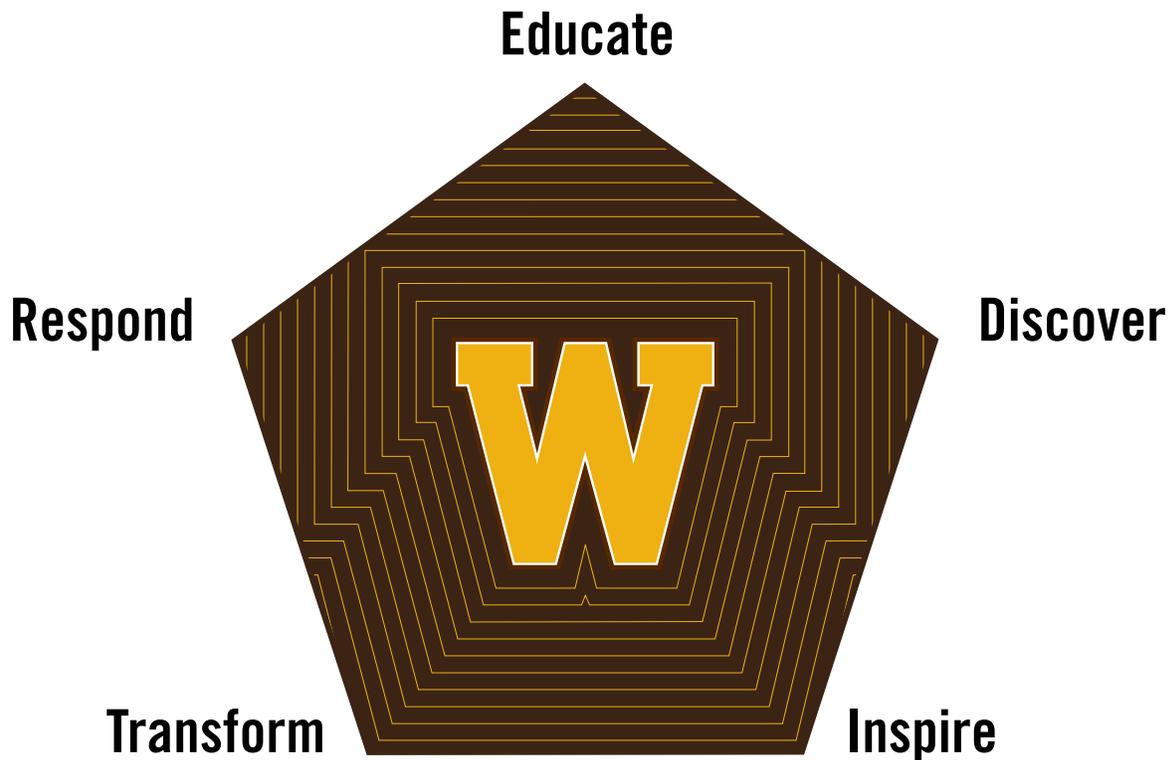


College of Engineering and Applied Sciences
Western Michigan University



Vision

To be the College of choice for tomorrow's engineers through excellence in education, discovery, and service.



Mission

Our mission is to:

- **Educate:** develop career-ready engineering and applied science graduates for success in the global market;
- **Discover:** advance knowledge and innovation through high-quality research, teaching, and student engagement;
- **Inspire:** prepare our learning community for lifelong excellence, ethical behavior, and professional leadership;
- **Transform:** cultivate an inclusive learning environment, contributing to diversity in the engineering workforce; and
- **Respond:** answer challenges in our local and global communities to improve the well-being of society.

Undergraduate Education

General Statement:

CEAS fosters an environment that supports holistic development for all our undergraduate students to be successful, with quality undergraduate degree programs. To better prepare our undergraduate students for the 21st century, we will be engaged in their success throughout their academic careers. We are committed to excellence in all our endeavors with our undergraduate students from the first recruitment encounter through the culminating capstone experience.



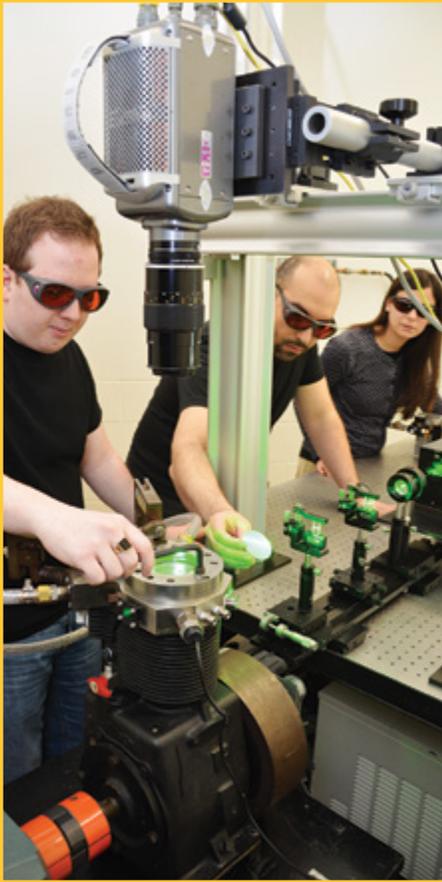
Priority: Recruit, retain and graduate a well-qualified and diverse undergraduate student body

Objectives

1. Increase undergraduate Full-Time Equivalent (FTE) enrollment by 10% and FTE enrollment of females (from 12%) to 14% and under-represented minorities (from 16%) to 17% by 2020.
2. Improve first year retention rates of first time full time (FTFT) (from 67%) to 70% and second year retention rate (from 77%) to 80% by 2020. Increase the six year graduation rate (from 42%) to 50% by 2020.
3. Improve the academic profile of undergraduate students.

Tactics

- Establish the CEAS brand by identifying our distinctive program qualities, promoting a culture that attracts and retains students [1,2]
- Increase marketing efforts of our engineering and applied sciences programs [1,3]
- Increase development and alumni activities to increase scholarship dollars [1,2,3]
- Work with Student Success Centers to provide effective academic support for undergraduate lower division engineering courses [2]
- Promote experiential learning opportunities in introductory courses [2]
- Provide resources and funding for CEAS Summer Camp [1]
- Develop partnership and proactive agreements with community stakeholders and domestic and international partners for recruiting [1]
- Survey incoming first-year students to identify their interest; use survey results to develop and implement plans to encourage and engage first-year students towards student organizations and undergraduate research activities [2]
- Encourage RSO's to engage in outreach activities. [1]



Priority: Recruit and retain well-qualified and diverse faculty and staff to support effective instruction and advising

Objectives

1. Increase the number of tenure-track faculty and academic advisors in proportion to increase in enrollment
2. Increase faculty diversity
3. Support faculty and staff to be effective instructors and academic advisors

Tactics

- Work with WMU Office of Development to create endowed faculty positions [1, 2]
- Provide resources for faculty and staff to be effective instructors, academic advisors and administrative assistants [3]
- Offer training to faculty on time management, teaching effectiveness, teaching using new technology, grant writing, contract writing using the resources of related units on campus [3]
- Provide new junior hires with better understanding of tenure and promotion expectations and actively protect them from activities and assignments that do not contribute to their advancement towards tenure [3]
- Regularly recognize faculty accomplishments in teaching, research and service [3]

- Regularly recognize staff accomplishments in service [3]
- Establish a recognition system involving student input to recognize and reward effective instruction and academic advising [3]

Priority: Ensure adequate infrastructure/facilities/equipment to support an increase in undergraduate enrollment

Objectives

1. Provide space for undergraduates to conduct senior capstone design, student organization design projects, undergraduate research and other hands-on activities
2. Ensure adequate classroom and laboratory space to support instruction
3. Ensure there is adequate and functioning laboratory equipment to support instruction

Tactics

- Identify and repurpose underutilized space for senior capstone design, student organization projects, undergraduate research and other additional hands-on activities, and for instruction [1, 2]
- Increase development and alumni activities on infrastructure, facility and equipment [1, 2, 3]
- Establish a CEAS Advisory Board to help increase partners [1, 2, 3]

Graduate Education

General Statement:

Our graduates are prepared for leadership careers in industry, government, and educational institutions. They are engaged in cutting-edge research and critical thinking. They are inspired to continue their education.

Priority: Increase academic profile of graduate student population.

Objectives

1. Recruit well-qualified graduate students
2. On the average, full-time M.S. and Ph.D. students complete their degree requirements in 2 and 4 years, respectively

Tactics

- Develop effective recruitment strategies for all graduate programs, including continued close collaboration with the Haenicke Institute for Global Education (HIGE) to identify and form international partnerships for 1+1 master's program and to recruit high-quality doctoral students. [1]
- Increase recruiting WMU undergraduate students. [1]
- Expand technology in classrooms. Increase number of graduate courses available via distance learning and expand marketing of the degrees and certificates available through distance learning. [1]
- Work with CEAS research centers to establish /increase graduate co-ops and internships, and promote the M.S. Accelerated Programs to increase full-time graduate student enrollment. [1]
- Incorporate a support system (e.g., writing support, year-round college orientation/seminar, address transportation issues during breaks, etc.) for our graduate students and provide an annual college teaching, research and service award for graduate students. [1,2]
- Increase number of courses that are shared or cross-listed between departments and programs. [2]
- Ensure all graduate programs implement an assessment process (required by HLC). [1,2]

Priority: Increase faculty engagement in graduate programs.

Objectives

1. At least 90% of full members of graduate faculty chair dissertation/thesis committees and at least 90% of graduate faculty serve on dissertation/thesis committees.
2. 75% of graduate faculty publishes on average 1 peer-reviewed paper each year co-authored with their graduate students.

Tactics

- Encourage faculty to chair/serve on dissertation/thesis committees. [1]
- Work with departments to keep track of dissertation/thesis committee appointment forms. [1]
- Revise Professional Activities Reports (PARs) to allow tracking of faculty publications as well as dissertation/thesis committee participation. [1,2]
- Recognize graduate students who publish their work in peer-reviewed journals and conferences. [2]





Research

General Statement:

CEAS is dedicated to our discovery-driven agenda. Faculty and students work together to solve challenging problems and to make the world better through innovation and exploration of the unknown.

Priority: Creating and sustaining an environment conducive to increasing faculty productivity in research and scholarship.

Objectives

1. Research expenditures will increase to \$5M (means \$125k/faculty/year for 2/3 of our graduate faculty).
2. Create an endowed professorship supported by industry or foundations.

Tactics

- Provide the necessary support for faculty to pursue large, multidisciplinary grants in coordination with partners within the college, WMU and different institutions. [1]
- Leverage current CEAS faculty expertise to collaborate with WMU faculty across the academic disciplines; to research and develop solutions to The Grand Challenges of the National Academy of Engineering in the areas of Advanced Personalized Learning, Enhance Virtual Reality, Engineer Better Medicine, Advance Health Informatics, Restore and Improve Urban Infrastructure, Provide Access to Clean Water, and Secure Cyberspace. [1]
- Develop recognition for faculty who graduate grant-funded Ph.D. students. [1]
- Offer competitive start-up packages, including RAs and a reduced teaching load for junior hires to ensure and facilitate their success. [1]
- Provide necessary infrastructure for faculty research. [1]
- Work with the Development Office to raise the funds needed to establish an endowed professorship. [2]



Priority: Attract talented, high-quality students and increase their participation in research and scholarship.

Objectives

1. Increase by 25% the number of graduating seniors who have had a research experience supported by externally funded research.
2. Increase by 50% the support for graduate students engaged in research from external funds.

Tactics

- Encourage and support undergraduate students to participate in faculty-funded research. [1]
- Include a question in exit survey of seniors about their work on research projects supported by externally funded research. [1]
- Encourage faculty to include graduate student support in proposals. [2]

Community Engagement and Professional Service

General Statement:

As life-long learners and leaders preparing our students for professional careers, we will use our expertise to engage the local and global community for the betterment of society.

Priority: Foster engagement in the community.

Objective

Serve as a technical and academic resource to our constituents and community.

Tactics

- Increase awareness of CEAS centers, follow the number and type of firms involved in center activities and update faculty webpages and profiles. Use ResearchGate to increase visibility of discovery activities.
- Track participation in events for pre-college students and working professionals.
- Track community engagement by CEAS faculty, professional staff, and students.

Objective

Actively participate in service learning and projects with community organizations.

Tactics

- Liaison with WMU Office of Service-Learning and publish a list of faculty expertise.
- Track number of and increase recognition for service learning activities for credit – track number of faculty, students and projects.
- Track number of and increase recognition for senior design projects for community organizations and faculty involvement in community organizations.

Priority: Support and strengthen industry and alumni relations.

Objective

Enhance learning through collaboration with industry.

Tactics

- Reestablish the CEAS Advisory Board (CEAS-AB).
- Develop customized master's and certificate programs for industry partners.
- Increase corporate alliance agreements.

Objective

Increase the affinity of students and alumni to the college.

Tactics

- Define and market CEAS's unique brand, and increase social media presence.
- Recognize active faculty advisors and support student participation in professional societies, competitions and conferences.
- Locate and engage alumni, industry partners and students by hosting social events.





WESTERN MICHIGAN UNIVERSITY
**College of Engineering
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wmich.edu/engineer