CSU | Washkewicz College of Engineering

2028 StrategicPlan

Vision

We believe the future of Cleveland depends on CSU, and the future of CSU is dependent on Cleveland.

Therefore, the Washkewicz College of Engineering (WCE) will focus on providing value to our students through social mobility and value to Cleveland through economic impact and improved quality of life.

WCE aspires to be the premier anchor college of engineering for Cleveland and Northeast Ohio by being a significant contributor to the economic vitality and quality of life for the region.

WCE also aspires to be a beacon college of engineering that attracts accomplished faculty and staff and talented students from the region, nationally and internationally by being a national leader in providing social mobility to our students.

Mission

The mission of the Washkewicz College of Engineering is to:

- Prepare our graduates for jobs of the future by offering forward-thinking, innovative, market-driven programs with stackable credentials;
- Transfer the outcomes of our multidisciplinary research and practice to meet regional needs and opportunities for growth; and
- Create opportunities for faculty and students by fostering collaboration across the University and across the region.

Values

- Engaged learning and the transformative power of education
- Community support and career development
- Excellence and balance in teaching, research and service
- Collaboration across all boundaries
- Integrity and fair dealing, tolerance and respect
- Diversity, equity, inclusion

Goal 1 – People

We will attract and retain a diverse body of accomplished faculty and staff and talented students by creating an experiential and interactive learning professional community that is welcoming, collaborative, and promotes innovation.

Validation Measures for 2028

Retention from second to third year undergraduate students: 80% (currently 62%)

Retention from first to second year graduate students: 90% (currently TBD)

Approval rate for tenure and promotion applications: 100%

Renewal rate for non-tenure track faculty: 100%

Student body diversity:
- Women: 30% (currently 20%)
- Under-represented minoritized students: 25% (currently 14%)

High School GPA for entering freshman: 3.75 (currently 3.5)

BS enrollment: 2,000 (current 1,630)

MS enrollment: 1,500 (current 1,100)
- MS domestic enrollment: 500 (currently 150)
- MS online enrollment: 300 (currently 0)

Initiatives

1. Grow and obtain funding for summer programming for regional middle and high school students to attract a diverse student body across all disciplines.

2. Provide a seamless route of transfer from regional community colleges to WCE, and support ongoing advising and curricular oversight.

3. Actively promote and provide support to engage undergraduate students in CSU and WCE student organizations/clubs/competitions.

4. Evolve student advising to increase faculty involvement in advising student organizations/clubs/competitions, and to increase professional staff involvement in curricular advising.

5. Improve the WCE web pages and social media presence to focus marketing on attracting accomplished faculty and staff and talented students.

6. Expand and continuously improve the effectiveness of the WCE Engineering Peer Teacher (EPT)

program.

7. Grow and permanently endow the Engineer Student Success Scholars (ESSS) program.

8. Increase total dollars available for undergraduate scholarships and use the scholarships to effectively recruit and retain a diverse and talented student body.

9. Implement a modified WCE faculty workload policy that is forward looking and accounts for the needs of the individual faculty and the college programs in a holistic manner.

10. Actively and effectively recruit a diverse faculty by empowering search committees to generate a highly diverse pool of accomplished faculty candidates.

Verification Measures for 2028

1. Number of students in WCE summer programs: 1000 (currently 400); WCE Summer Programming Endowment Fund: $5M (currently $0)

2. 2+2 curricular pathways from LCCC, Tri-C, and LCC to all WCE programs listed in the CSU Transfer Portal Pathway Index, and annual meetings of advisors and faculty for continuous assessment.

3. Percentage of WCE students active in at least one organization/club/competition as an undergraduate: 100% (current unknown, we will start collecting this year)

4. Percentage of faculty serving as an advisor for an organization/club/competition: 100% (currently 25%).   Percentage of undergraduate students assigned to a WCE professional academic staff advisor: 100% (currently 55% with another 31% by CSU advisor)

5. A complete overhaul of the WCE website that results in a 50% increase in pageviews and time on page for major college, department, program, and news websites.

6. Number of EPT courses: 15 (currently 7); EPT Endowment Fund: $1M (currently $0)

7. Number of ESSS: 150 (currently 75); ESSS Endowment Fund: $5M (currently $0)

8. WCE Undergraduate Student Scholarship Fund: $20M (currently $11M)

9. Modified faculty workload policy approved by the WCE faculty.

10. Percentage of faculty who identify as female: 30% (currently 19%). Percentage of faculty from under-represented minoritized racial/ethnic backgrounds: 15% (currently 7%).

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Goal 2 – Education

We will prepare graduates for social mobility and equip them with skills to make significant contributions to the Northeast Ohio (NEO) and national innovation ecosystem by enhancing excellence in multidisciplinary teaching that is balanced between theory and practice.

Validation Measures for 2028

4-year BS graduation rate: 50% (current 24%)

6-year BS graduation rate: 75% (current 50%)

2-year MS graduation rate: 90% (currently TBD)

4-year PhD graduation rate: 90% (currently TBD)

BS degrees awarded each year: 400 (currently 300)

MS degrees awarded each year: 300 (currently 234)

Initiatives

1. Imbed and infuse engineering design thinking and project-based learning (PBL) throughout the curriculum in all WCE programs, beginning with ESC 120 and culminating with the capstone design project.
2. Continue to evolve the senior capstone experience so that the capstone experience prepares WCE students for the types of careers we anticipate for them.
3. Increase the number of domestic graduate students by implementing appropriate program delivery (online, hybrid, off campus) of our graduate degree and certificate programs.
4. Create and implement market-driven BS and MS programs.
5. Create and implement required experiential learning into all WCE undergraduate curricula that includes co-operative education, internships, and research experiences in WCE labs.
6. Collaborate with the Provost's Office to improve the effectiveness of the WCE teaching and learning enterprise.
7. Create and implement new integrated majors by collaborating with units across the university.

8. Collaborate with CSU Career Development and Exploration (CDE) to develop, obtain financial support for, and implement a process for matching WCE talent to the needs of NEO small and medium enterprises (SME).
9. Create and implement non-credit and for-credit industry-recognized micro-credentials for WCE students and the community at large.
10. Develop a process and pathway for students in pre-engineering to move into an appropriate major in a timely manner.

Verification Measures for 2028

1. ESC 120 redesigned and taught with a focus on design thinking, and all WCE engineering and engineering technology programs have engineering design components in the second and third year of the programs.
2. The WCE capstone design experience has the following mix of projects:
   a   Industry sponsored/mentored: 50% (currently 43%)
   b   Student-initiated, each with an entry into Startup Vikes: 30% (currently 24%)
   c   Competitions: 15% (currently 12%)
   d   Faculty sponsored, with the product contributing to a research project: 5% (currently 21%)
3. Number of online degree and certificate programs: 5 (currently 1)
4. New BS programs in Biomedical Engineering and Construction Management implemented with 100 students in each program. New MS program in engineering systems management (or similarly named) created and implemented.
5. Each BS program contains an experiential learning course to document the experiences of each student as a requirement for graduation.
6. Number of WCE course sections with a DFW rate above 20%: 10 (currently 40)
7. Number of implemented integrated majors that include a WCE major: 20 (currently 0)
8. Financial support for the WCE-SME talent matching initiative: $5M
9. New for-credit micro-credentials: 10 (two recently); New non-credit micro-credentials: 10 (one recently)
10. Pre-engineering enrollment: 50 (currently 250)

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Goal 3 – Research

We will be a significant contributor to the economic vitality and quality of life for Northeast Ohio by achieving international recognition for excellence in research, scholarly activities, and technology transfer.

Key Research Areas of Application

CS/DS Tools Throughout

- Advanced Materials and Manufacturing
- Biomedical Technologies
- Water Sustainability
- Energy Storage
- Sustainable Urban Living

Validation Measures for 2028

Annual research expenditures as reported to the NSF HERD survey: $25M (currently $12M)

PhD enrollment: 200 (currently 90)

Publications that include WCE faculty and students as authors each year (and a method to measure)

Spinoff companies: 10

Initiatives

1. Provide incentives and support to junior faculty for preparation of successful NSF CAREER proposals.
2. Ensure that all faculty have a personal professional web presence that appropriately markets their research and education expertise.
3. Establish and support research centers/clusters that have significant, multi-investigator team-based center-type funding.
4. Provide incentives and support to all faculty to obtain external support for research.
5. Monitor progress of all doctoral students to ensure timely completion and quality publications.
6. Develop policies and provide incentives to motivate MS students to complete a thesis.
7. Focus CSU GA support on doctoral students, and increase external financial support for master's and doctoral students.

8. Collaborate with the Provost's Office to develop an effective mentoring program for junior faculty.
9. Add commercialization efforts (development and protection of IP, efforts to form a company or license IP to a company) and industry-sponsored research to activities contributing to research and scholarship considered for tenure and promotion.
10. Raise gift funds for graduate fellowships, endowed faculty positions, and research seed funding.

Verification Measures for 2028

1. NSF CAREER recipients: 10 (3 recently)
2. Percentage of faculty with dynamic web presence on the CSU academic server: 75% (Currently 13%)
3. Number of externally supported research centers: 10 (currently 2)
4. Percentage of faculty with external support for research: 75% (currently 45%)
5. PhD degrees awarded per year: 40 per year (currently 11)
6. MS Thesis defenses per year: 40 (currently 10)
7. PhD/MS CSU-funded GA ratio: 2:1 (currently 3:4). External/Internal financial support for PhD: 2:1 (currently 1:1).
8. All junior faculty have a supportive relationship with an engaged, quality mentor.
9. IP disclosures per year: 20 (currently 10). Patents filed by WCE faculty: 16 (currently 8). SBIR grants: 10 (currently 2).
10. Graduate Fellowships Endowment Fund: $500,000. Two new endowed chairs valued at $1M or more. Research Seed Endowment Fund: $500,000