University of Washington
**Department of Civil &
Environmental
Engineering**

2023–2027
**Strategic
Plan**

The UW Department of Civil & Environmental Engineering (CEE) 2023–2027 strategic plan was collectively informed and built by students, staff, faculty, school leadership, partners, and other external stakeholders over the period of a year. Our partner, Pyramid Communications, guided us through an approach called "strategic reframing" that:

- Shifts the focus from process to a shared vision and the necessary steps to achieve it.
- Creates shared context within which to evaluate choices and make strategic decisions.
- Provides everyone responsible the same understanding of purpose, success, and priorities.

Our Plan Framework

At the center of this plan is UW Department of Civil & Environmental Engineering's (CEE) commitment to building a resilient and sustainable society. The plan's four core pillars work toward:

- Grand Challenges & Research
- Education
- Visibility & Engagement
- Equity & Inclusion For All

In addition to existing as core pillars, two essential areas of the plan are throughlines, woven throughout and supporting all the work of the plan:

- Equity and inclusion for all
- Grand Challenges (for more about Grand Challenges, see Page 3)

Our Strategic Planning North Star

The UW Department of Civil & Environmental Engineering students, faculty, staff, and alumni are **leading efforts to prepare for a rapidly changing world** — from combating the climate crisis to designing solutions that support an equitable future.

We are at the forefront of interdisciplinary research, teaching, and collaboration, embracing emergent tools and technologies to **enhance the well-being of our communities** as we create **resilience and sustainability** in the built and natural environments.

RESILIENT & SUSTAINABLE SOCIETY

Grand Challenges & Research

Education

Visibility & Engagement

Equity & Inclusion For All

Pillar 1 | Grand Challenges & Research

Research and applied impact, including service and community engagement.

RESILIENT & SUSTAINABLE SOCIETY

Grand Challenges & Research

Education

Visibility & Engagement

Equity & Inclusion For All

OUTCOME 1

Grand Challenges, which leverage faculty interests and strengths to meet society's future needs, are integrated in department degree programs, prioritized in cross-disciplinary research, and highlighted in advancement activities.

Key Strategies:

- Work with UW Advancement to design messaging that leverages Grand Challenges; identify target sponsors and donors; and start a campaign to fund seed grant proposals and funds to incorporate Grand Challenges into curricula.
- Identify opportunities to ground curricula in Grand Challenges, including existing applicable coursework and gaps in curricula that should be addressed.
- Identify ways to use the Grand Challenges in student recruitment.
- Coordinate with Professional and Continuing Education and others for market research on viability of various thematic certificates/programs.
- Review of submitted Grand Challenge proposals to evaluate areas of success/ weakness and identify strategies for the future.

OUTCOME 2

Increased involvement in large-scale proposals and awards; win or act as a major partner in three or more $10 million+ awards.

Key Strategies:

- Build community in areas related to Grand Challenges and establish key external partnerships and projects.
- Include stakeholder community in existing work and on smaller proposals.
- Identify faculty training needs to support writing large proposals.
- Identify and commit departmental and university financial and other support for larger proposal development.

About Grand Challenges

UW CEE is embarking on a series of Grand Challenges that civil and environmental engineers are uniquely positioned to solve. These Grand Challenges extend far beyond the realm of engineering and offer opportunities for multidisciplinary collaboration.

UW CEE students and faculty will tackle Grand Challenges together through research and coursework, equipping students to build a more resilient and sustainable world through their studies and careers.

Our 2023–2027 Grand Challenges include:

1. **Designing for a Changing Climate |** Big data, adaptive design, and other emergent tools and technologies that mitigate climate impacts and help communities more quickly adapt.

2. **Creating Resilience to Natural Hazards |** Remote sensing, machine learning, artificial intelligence, and other tools that build community resilience in the wake of increasing natural disasters.

3. **Engineering for Socioeconomic and Environmental Justice |** A diverse, well-trained, collaborative workforce that reverses existing societal and environmental inequities through integrated design and engineering.

4. **Building Sustainable Infrastructure |** Advanced construction techniques and new materials that create smart structures that withstand natural disasters and climatic events, from coastal to inland, rural to urban.

Pillar 2 | Education

Transformative education, training, and mentorship across undergraduate, graduate, professional, and online programs.

RESILIENT & SUSTAINABLE SOCIETY

- Grand Challenges & Research
- Education
- Visibility & Engagement
- Equity & Inclusion For All

OUTCOME 1

CEE budget includes increased funding to support and sustain program growth, including TAs, staff for teaching labs, renewal and maintenance of lab equipment, materials, advising staff, and more.

Key Strategies:

- Faculty determines desired levels of support.
- Work with College of Engineering to increase revenue-generating programs, including developing a market analysis to identify opportunities.
- Establish a revenue-increasing plan as well as spending priorities and fundraising strategies.

OUTCOME 2

Increased degrees/enrollment in key areas to provide Washington state and the nation with engineers who reflect the demographic profile of the state and meet specified targets.

Key Strategies:

- Identify and initiate strategies for faculty and student outreach to community colleges.
- Increase engagement with Direct-To-College (DTC) students by engaging 101 speakers, focusing on DTC engineering 101 courses in spring quarter, and offering tours of exciting CEE projects.
- Increase engagement with General Engineering students— including improved marketing materials, engaging student organizations, and identifying a series of informative social events led by current students.

- Identify and address limitations on B.S. Environment cohort size.
- Identify current fellowship and opportunities for adding fellowships for supporting graduate student recruitment.
- Host department seminars/ workshops on external fellowships.

OUTCOME 3

Engagement and participation in courses are strong (across all our programs, including our online graduate programs).

Key Strategies:

- Undergraduate and Graduate Education Committees collaborate to develop and launch a survey to measure student engagement and outcomes.
- Continue monitoring and investigate if targets are not being met.

OUTCOME 4

All classes seek to foster diversity, equity, and inclusion (DEI) in engineering problem solving to solve society's big problems, and all classes seek to employ classroom management that fosters an environment of equity and inclusion.

Key Strategies:

- Identify courses with DEI content within CEE and other departments.
- Develop Program Educational Objectives (PEOs).
- Introduce student training activity on groupwork in junior year to promote inclusive teamwork.
- Organize annual inclusive teaching opportunities and track DEI curriculum content.

OUTCOME 5

Students learn from a curriculum that provides them with the core CEE skills, fundamentals, opportunities for practical experience, and the ability to apply new technologies and knowledge to solve Grand Challenge problems.

Key Strategies:

- Evaluate and update undergraduate and graduate PEOs.
- Identify existing PEO data and hire an educational data analyst to support continued measurement.
- Increase industry capstone opportunities, in collaboration with CoE.
- Conduct a thorough annual review of department curriculum to align with outcome.
- Establish survey for employers of CEE students; continually assess data to identify shortcomings and necessary changes.

Pillar 3 | Visibility & Engagement

Peer visibility, recruitment (faculty, staff, and students), relationship-building and partnerships beyond the department, and marketing and communications.

RESILIENT & SUSTAINABLE SOCIETY

Grand Challenges & Research

Education

Visibility & Engagement

Equity & Inclusion For All

OUTCOME 1

Increased visibility and engagement with the general public and potential students about UW CEE's impactful role in many of the most pressing issues of our time.

Key Strategies:

- Include expectation of op-eds in tenure and promotion cases.
- Hire communication specialist support.
- Prioritize specific audiences for communication outreach.
- Increase strategic use of social media.

OUTCOME 2

Strong partnerships and substantive engagement with industry, state, and local governments, community, and alumni, all leading to innovative applied research projects, research support and grants, greater impact, placement of students, recruitment of graduate students, and/or philanthropic support.

Key Strategies:

- Build upon existing contacts, establish new contacts, and continually nurture partnerships.

OUTCOME 3

Viewed and engaged as a resource, providing research, education, and training, by key internal partners at the University of Washington.

Key Strategies:

- Ask what top needs are among partners and professional networks.
- Fund via admissions or class fees.

OUTCOME 4

Receiving consistent, distinguished recognition and awards in priority areas of impact and focus, including Grand Challenges, research, and DEI.

Key Strategies:

- Renew focus on faculty scholarship.
- Increase the level of research activity in the department through growth of external research funds and support for training on grant proposals and advancement targeting fellowships.

OUTCOME 5

Increased visibility with peer institutions, leading to faculty and staff recruitment, greater collaboration, and greater overall impact.

Key Strategies:

- Leverage existing faculty-level research collaborations or project partnerships.
- Provide resources to coordinate and support large project proposals with partners.

Pillar 4 | Equity & Inclusion For All

A culture of equity and inclusion strengthens the CEE community and promotes the success and well-being of all people within the department, our partners, and the broader world.

RESILIENT & SUSTAINABLE SOCIETY

Grand Challenges & Research

Education

Visibility & Engagement

Equity & Inclusion For All

OUTCOME 1

Ensure that CEE is accessible to students from all backgrounds and experiences, regardless of race, sex, or other indentity.

Key Strategies:

- Document recruitment process/history for all funded graduate students.
- Engage with College's Office of Inclusive Excellence (OIE) and other campus partners to ensure outreach efforts are broad and inclusive of a wide range of communities and institutions.
- Provide guidance for prospective students on how to apply for graduate school beyond official application.
- Launch a fundraising push to expand recruitment and retention of students who need financial assistance.

OUTCOME 2

Activities that contribute to an inclusive environment are recognized and valued within the department. For faculty and staff, such activities are reported in annual reviews as well as tenure (faculty) and promotion processes. For graduate student researchers, fellowships are provided to students who have strong records of contribution of inclusion for all, regardless of race, sex, or other identity.

Key Strategies:

- Provide clear examples of inclusive activities that faculty, staff and students can include in their annual activity reports.
- Ensure knowledge and skill-building opportunities are available each year to enhance communication and collaboration across differences.

OUTCOME 3

Faculty and staff report in climate surveys that they feel engaged and connected to the department and their peers. There is an integrated and collaborative approach for building and maintaining the department's community, culture, and administration. Faculty participate in regular social events. Junior faculty report that they benefit from a well-established and high-quality mentoring program.

Key Strategies:

- Create a climate survey and community engagement/social plan.
- Dedicate staff support (one full-time employee (FTE) for management of community events ensuring that CEE's practices are fair and inclusive.
- Form an ad-hoc committee to establish mentoring best practices.

OUTCOME 4

Climate surveys demonstrate steadily improving progress so that students across all backgrounds and experiences feel CEE is a welcoming, inclusive, and supportive environment and community.

Key Strategies:

- Ensure that CEE clubs and organizations are welcoming to people from all backgrounds.
- Develop recommendations for faculty on how to integrate as part of coursework that engineering impacts a wide range of communities with diverse needs and lived experiences, and revisit these recommendations as part of the ABET process for continuous improvement.
- Develop a CEE course that examines how technical issues are socially embedded and evaluate the course annually.
- Initiate annual climate survey and designate resources to analyze data annually.
- Leverage College's OIE support.

About equity and inclusion

Equity and Inclusion show up as both a dedicated pillar and a throughline throughout the entire CEE strategic plan. This is to ensure dedicated resourcing of equity and inclusion as a strategic pillar of our work, while also recognizing the need to embed a framework of equity and inclusion across all that we do. In alignment with the College of Engineering's strategic plan, we strive to build a community where all members thrive.

Thank You

Thank you to the many team members and collaborators who contributed their time and wisdom to this plan's development — faculty and staff, undergraduate and graduate students, alumni, College of Engineering leadership, and more.

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- UW CEE students and faculty
- College of Engineering leadership
- Community partners and stakeholders