



UNIVERSITY of WASHINGTON

FY2025 Operating Budget Development Narrative Prompts

[College of Engineering]

Programmatic & Academic Vitality Narrative

Text submitted within this section **will** be published to OPB's Annual Budget Development website

Where possible, you are encouraged to leverage published materials already created

- 1) Please provide a web link to your campus/unit strategic framework and provide three to five bullet points outlining the relationship between your resource plan and your strategic framework. *Word Limit: 750*

In 2022, the College of Engineering (CoE) introduced its Strategic Plan 2022-2027: [Engineering Excellence for the Public Good](#). The plan was a collaborative effort that included over 300 stakeholders both internal and external to the UW community. The plan states:

We believe in engineering education that is academically meticulous, technically rigorous, collaborative and inclusive. Engineering education must prepare students to create significant societal impact, helping to shape a healthier and better world. In short, we are committed to engineering excellence for the public good.

Engineering for the public good pursues solutions to improve the quality of life for all – whether in infrastructure, technology, transportation, health, environment or manufacturing. As society's needs expand more rapidly than ever, where do we begin? We believe the answer starts with an inclusive engineering student experience grounded in technical excellence.

Four priority areas are identified in the Strategic Plan:

- Creating a healthier and more just world through our work
- Embracing the power of diversity, equity and inclusion
- Translating innovation into impact
- Investing strategically in our future

Each of these areas help drive our resource planning and the college's overall strategic framework.

Similar to last year's plan, the CoE FY25 Operating Budget proposal is guided by our Strategic Plan as well as an accompanying [Implementation Plan](#). Newly reflected highlights from the college's resource plan and our strategic framework include:

- **The Computing for the Environment initiative (CS4ENV):** A new collaboration led within the CoE by the Allen School and the Department of Civil & Environmental Engineering. Campus partners include the College of the Environment and the eScience Institute. CS4ENV supports novel collaborations across the broad field of environmental sciences and computer science & engineering. The initiative seeks to catalyze new efforts, create a community of cross-disciplinary researchers, and position teams to be competitive for funding opportunities.
- **Office of Inclusive Excellence (OIE):** Two years ago, the CoE embarked on a process of change designed to grow inclusive infrastructure and diversify the college's population. Across the nation, there are wide gaps in racial, ethnic, and gender STEM representation. The OIE was created to address inequities and facilitate a culture shift in the college where all its members are valued and feel a sense of belonging. Since then, OIE has helped the college build-out programming that is grounded in inclusive excellence, strategically focused, and data-driven.
- **U.S. - Japan University Partnership for Workforce Advancement and Research & Development in Semiconductors (UPWARDS) for the Future:** A product of the CHIPS and Science Act, UPWARDS represents



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a collaboration between six U.S. universities and five Japanese universities, working with industry partners, to provide advanced training and research opportunities to students, faculty, and professionals in an effort to address the demand for a highly trained microelectronics and semiconductor workforce and, as a result, build global and domestic capacity in the semiconductor field. Earlier this year, the UW and CoE were awarded funding for this project focused on building the STEM workforce of tomorrow.

- **The Boeing Advanced Research Collaboration (BARC):** An interdisciplinary Boeing-UW partnership for the future of flight. BARC unites UW faculty and students with Boeing subject matter experts to evolve aerospace systems with next-generation technologies such as new materials, digital twins, data-driven engineering, robotics, and human-technology partnership.
- **The UW-led AI Institute for Dynamic Systems:** Focuses on fundamental AI and machine learning theory, algorithms and applications for real-time learning and control of complex dynamic systems, which describe chaotic situations where conditions are constantly shifting and hard to predict.
- **Engineering Shared Environment (ESE):** Supports research Services, fiscal services, and financial accounting across the CoE. ESE partners with departments and institutions to increase productivity and compliance through a shared support model driven by exceptional customer service.
- **Medical Technology Innovation:** We continue our efforts to build interdisciplinarity; to anticipate, prepare and lead transformative opportunities in engineering and medicine with a focus on educating the next generations of engineers and healthcare providers to best serve our public. Specific initiatives include innovation for health equity, robotics and human health, as well as AI and health.
- **Brand Strategy:** In partnership with University Advancement, the CoE is working with an outside consultant to re-imagine and re-position its brand. Our goals for the re-brand work align to UW's endorsed goals, while including an opportunity to promote and differentiate the College of Engineering.

- 2) Please discuss your campus/unit's planned utilization of resources, **as identified in your Adaptive entries** (institutional initiative = UW Diversity Blueprint), in support of the [2022-2026 UW Diversity Blueprint](#) themes and goals. *Word Limit: 750*

The CoE is committed to building an inclusive and equitable environment for learning, research, service and outreach. This past year, the CoE was thrilled to have been recognized by the American Society for Engineering Education (ASEE), and their Diversity Recognition Program at the Bronze Level. This program aims to recognize schools and colleges that make significant and measurable progress increasing diversity, inclusion and degree attainment. The College has also demonstrated success with the inclusive and sustainable design of the Interdisciplinary Engineering Building (IEB).

Embracing the power of diversity, equity and inclusion is a central goal in the CoE's Strategic Plan, which mirrors the University Diversity Blueprint in several key areas. Our long-term vision for DEI transformation focuses on three major strategic priorities:

- (1) Attract, recruit, select, and retain diverse students, faculty and staff,
- (2) Develop structures, practices and people skills that embed and leverage the values of DEI in all college activities,
- (3) Build a robust college culture where all members thrive, are valued, and feel a sense of belonging.

This work requires investment of time and resources. While much work remains, we are proud of these achievements and will continue working to meet our DEI goals aimed at serving our entire community.



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One accomplishment of which we are particularly proud is the recent hiring of five faculty as targeted opportunity hires. We appreciate support from the Provost's Office for these hires.

DEI initiatives continue to be integrated into department and college resource planning. In addition to staff in the OIE, two units have also hired Diversity Officers. Initiatives brought forward as a result include training, evaluation, faculty hiring and recruitment practices, and other operating costs. Examples of programs currently in progress include:

- Creation and launch of [Pathways to Inclusive Excellence Programs \(PIE\)](#), which supports first-generation, Pell-eligible students,
- Rebranding of Women in Science & Engineering (WiSE) as [Women Engineers Rise](#) (WE Rise) with refreshed programming to include and attract women and non-binary individuals to STEM (<https://www.engr.washington.edu/current/studentprogs/women-engineers-rise>),
- Staff support for the [ELEVATE](#) program designed to support graduate students in the dissertation phase of their work,
- Creation and launch of a collegewide bias, discrimination, and sexual harassment Incident Reporting System that offers students, faculty, and staff opportunities to voice their experiences and access triaging services supported by trained advocates from the college's ten departments,
- Creation of a platform within the Data-driven Hiring Dashboard for all tenure-track search committees, including bias training, job description support, rubrics, and data-based tracking of semifinalists and finalist lists.

Future initiatives include the launch of an Inclusive Excellence Faculty Fellowship program supported by private donations. College faculty fellows will have access to resources on integrating intercultural competence and inclusive teaching practices into their curriculum with the goal of facilitating impactful changes in their units and across the College.

We will continue to develop and promote the DEI Officer Program. Under the College's OIE, the department's DEI officer works with students, faculty and staff to promote inclusive and equitable policies and practices.

The launch of a new college-level facilitator's toolkit: Using a series of video lessons developed from extensive research done by members of OIE, the goal is educating people at all levels across the college on how to have difficult conversations regarding a wide range of DEI topics, specifically as it relates to engineering.

In addition, we will implement and facilitate the use of courses available through ASEE that are designed to help faculty and related staff create inclusive classrooms.

The CoE's strategic plan also commits to strengthening our physical infrastructure to realize our vision to be a globally recognized leader in inclusive engineering. We are committed to crafting solutions to the most pressing challenges of our time, generating societal impact and creating a better world. This is an ideal time to re-envision academic work and learning spaces since the global pandemic accelerated use of innovative technologies and practices. Additionally, increased attention to the social justice movement has sharpened the focus on how places and spaces advance the CoE Strategic Plan and UW Diversity Blueprint.



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Required Budget Development Consultative Process Summary – Faculty, Staff and Students

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-- If specific questions are not applicable to your unit, simply indicate n/a --

Consultation with your elected faculty councils, student councils and unit/campus staff, regarding your unit's/campus's budget proposal materials, including your proposed FY25 operating budget, narrative responses, tuition rate recommendations and fee-based rate recommendations are an important and necessary component of the UW's budget development process. Your responses to the questions below will be documented and included as part of the FY25 operating budget development review materials provided to Executive Leadership of the UW.

PLAN NOW to ensure that all unit/campus review and consultative processes are completed by the March 4, 2024 due date.

- 1) Please indicate the date that FACULTY leadership within your unit/campus was consulted and provided the opportunity to provide input as part of this budget planning exercise

Representatives presented annual review materials to the College Elected Faculty Council on March 1, 2024

- 2) Please list a point of contact for your FACULTY leadership (name and UW email address).

Professor Miqin Zhang, mzhang@uw.edu

- 3) Please indicate the date that STUDENT leadership within your unit/campus was consulted and provided the opportunity to provide input as part of this budget planning exercise.

Representatives presented annual review materials to the Engineering Student Council on February 2, 2024

- 4) Please list a point of contact for your STUDENT leadership (name and UW email address).

Jett Street, jastreet@uw.edu

- 5) Please discuss how you involved campus or unit staff in the consultative process.

Given that the College of Engineering is a departmentalized college, unit administrators are key to the college's annual review work. Dean's Office staff meet regularly with the collective of unit administrators throughout the fiscal year, and the development of the annual plan is discussed throughout the planning cycle. In turn, administrators liaise with additional staff in their units.

The Dean's Office works with administrators to achieve a cross-college understanding of planning efforts, expected staff changes, faculty hiring needs and plans, and so on. Administrators work with chairs, academic advisors, and program directors in the process of making tuition and fee recommendations and soliciting student input.

The entry of information into Adaptive is the result of collaboration between the Dean's Office staff and unit administrators.



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- 6) Since submission of your tuition and/or fee-based rate recommendations on February 1, 2024, has your campus or unit received any additional feedback from students? If so, please summarize here.

As mentioned in our tuition and fee recommendation submission, at the time of submission some programs still had an open window for students to provide feedback about increases. We have checked in with all programs, and none have received feedback on recommended changes beyond what was reported in February.

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Tuition-based Program Rate Recommendation Narrative

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Responses to the questions below are required for each tuition category that your unit/campus recommends adjusting (as submitted to OPB by 2/1/24). **Please note question #4 is required for any programs for which no tuition increase is requested.** If you are recommending changes for multiple tuition categories, please differentiate your responses within each question.

- 1) Please explain how the proposed rate increase will enhance student experience and promote student success?

Word Limit: 500

Tuition rate changes are proposed for four tuition categories. Three categories - Master of Chemical Engineering (ChemE), Master of Industrial and Systems Engineering (ISE), and Master of Material Science and Engineering (MSE) - have always charged the same rate. Each is proposing a 3% increase for both residents and nonresidents. The rate for the Master of Applied Bioengineering (MAB) has always been different. A 3% increase for residents and a 4.2% increase for nonresidents has been proposed.

ChemE: The proposed rate increase will ensure the continued high quality of the program. In order to run the program as successfully as we have in the past, we need to keep up with inflation - increased costs for faculty/staff/TA salaries, benefits, and lab equipment supplies. In addition, program revenue is used to improve the instructional lab equipment to better the program for the sake of the students.

ISE: The proposed increase will enhance the student experience and promote success in several ways. Increased funding supports the development and improvement of academic programs for our department by allowing us to hire TA support needed for the course, potentially expanding course offerings, and investing in state-of-the-art technology and resources for the course - all of which contribute to a richer and more fulfilling educational experience for students. Indirectly, this helps support recruiting and retaining high-quality faculty. Well-supported faculty can offer better mentorship, engage in innovative teaching methods, and provide students with valuable insights and guidance, leading to successful student outcomes.

MSE: The percentage increase of 2% for FY24 was lower than inflation (particularly given the 3%/4% merit increase). In order to stay on top of rising program costs, we are proposing a 3% increase in tuition for FY25. This increase will enable us to continue to offer students the same high-quality classes and activities, such as the Graduate Student Seminar series (MSE 520), for which we bring in experts in their field on a weekly basis to speak with students and present their research.

BioE (MAB): The proposed increase to resident tuition will maintain parity with other engineering professional master's programs. The proposed increase to non-resident tuition will offset cost increases that are due to expanding the faculty effort. One change that was not budgeted in the FY24 proposal is the addition of a part-time lecturer with industry experience to mentor capstone teams and support the MAB instructor. In FY25 a new 50% Teaching Assistant will be hired. These changes will enhance learning outcomes particularly because the program involves intensive design, fabrication and testing.

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- 2) Tuition and fee increases have a disproportionate impact on low-income students. Please comment on how each fee change will affect student debt loads, and specifically how the program will offset this impact. *Word Limit: 550*

ChemE: We are planning to use the master's students as reader/graders in our undergraduate program to provide some additional income to our MS students while pursuing this degree.

ISE: We recognize the potential for a disproportionate impact. Offsetting the impact of fee increases on low-income students requires a strategic and targeted approach. We currently are focusing on three approaches:

Program Evaluation: Regularly evaluate our program to ensure we keep costs as low as possible while delivering top-notch education.

Financial support: (1) Our advisers are always looking at financial aid programs for which our students can apply and connecting them with UW Financial aid offices. (2) We work to reevaluate and adjust eligibility criteria for our scholarships to accommodate the broadest range of low-income students. (3) We are working with our External Advisory board to establish new scholarships to alleviate the financial burden on low-income students affected by fee increases.

Transparent Communication: Our department is working with our grad students to increase our communication and ensure that all students are well-informed about fee increases and the available support mechanisms.

MSE: The proposed tuition change means a \$750 increase for resident students and a \$1,179 increase for nonresident students per year. While we recognize this may be impactful to some students, it is unfortunately necessary to meet the rising prices and increases in salary. The department does not currently offer financial assistance for Applied Master's Program students, and this is stated on our website. All students should be aware of this at the time they apply for the program. We do list other funding resources on our website that students can look into, and our Graduate Program Advisor is available to speak with students regarding alternative fund sources to help them find resources to offset this increase.

BioE (MAB): The cost of the degree will increase from the prior year and this will result in an increase to debt for students who need to finance the cost of the program. Students are notified of employment opportunities in the department and are invited to apply for 50% and hourly Teaching and Research Assistant positions. Students are also informed of paid internship and fellowship opportunities.

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- 3) Please discuss your unit/campus's overall tuition strategy for the next 3-5 years. Describe if you expect the proposed change to result in changes to enrollment (including changes to resident/nonresident composition) or the volume of tuition waivers awarded. *Word Limit: 250*

ChemE: As in recent years (when we have increased tuition by 2-3% per year), all tuition changes will be based on market comparisons and local inflation factors. We do not anticipate the current or future changes to affect enrollments.

ISE: We have increased tuition by 2-3% per year over recent years. We don't expect to deviate from that approach substantially in the next few years, and we do not anticipate these changes will affect enrollments. While we do not expect tuition changes will affect enrollment, we are exploring how/whether we can increase enrollments by opening the program to international students.

MSE: MSE, ChemE, BioE, and ISE discussed proposed changes since we are the four units in the College of Engineering with tuition-based Applied Master's programs, and we will continue to consult with those departments in the future. In general, we anticipate yearly rate increases of 2-4% to cover inflation and salary increases, though if there is a year with considerably higher inflation and/or salary increases, we may need to revise this plan. Since we are keeping rate increases low, we do not anticipate substantial changes to enrollment or the resident/nonresident composition of students. To date, it does not appear that our rate increases have had any meaningful impact on enrollment.

BioE (MAB): We plan annual raises of 3-5% and do not expect enrollment changes as a result. The cost is significantly lower than similar programs offered by peers for both Washington State residents and non-residents.

- 4) If you are not planning to increase tuition for any program, please respond to the following: Generally, small, inflationary increases (1-2% annually) are preferred over no increase or large increases every few years. Please answer the following questions for each program where no increase is requested. *Word Limit: 250*

N/A

- 5) Enrolled students affected by rate increases must be consulted on proposed increases before proposals are finalized. Please describe when and how students were consulted and summarize the feedback they provided regarding EACH of your tuition rate recommendations. *Word Limit: 500*

Each of the four units with a tuition-based professional master's programs have consulted/are consulting their students (see below). In addition, proposed tuition and fee changes will be discussed with the Engineering Student Council at their February 2, 2024 meeting. We will incorporate any new feedback into our March 4 submission.

ChemE: The email below will be sent to all students enrolled in the MS program. During the winter quarter, the chair and Graduate Program Coordinator will hold a "state of the department" address open to all of the graduate students. This address will include time for Q&A and open format discussion. In prior years there have not, to our recollection, been questions related to MS tuition increases.

Text of email to MS students: "Our department strives to provide outstanding education while keeping costs to our students and their families as low as possible. This year the tuition increases 3%, which is slightly less than

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the annual inflation rate for the United states (3.2% for the 12 months ending July 2023, US Bureau of Labor Statistics, August 16, 2023). This has been achieved by continued focus on controlling costs for the coming year and beyond. As you begin to plan for the next academic year I encourage you to visit the UW Office of Planning and Budgeting website at <https://www.washington.edu/opb/> for more information on tuition. Please email Interim Chair James Carothers (jcaroth@uw.edu) by March 15, 2024 if you have any comments on the proposed 3% tuition increase."

ISE: Students currently enrolled in our program have been emailed by the graduate advisor about the recommended tuition increase. Students were asked to respond to the advisor with comments and questions or to talk in person.

MSE: Current Applied Master's students were informed of the proposed rate increase at the beginning of January 2024 and provided the opportunity to give feedback on the proposal. No students chose to share feedback on the proposed change.

Do Not Submit This File