



# COLLEGE OF ENGINEERING

Today's challenges require innovative thinking and collaborative approaches that bridge engineering disciplines with science, law, public policy and business. Together with world-class partners, the University of Washington's College of Engineering is developing a new generation of innovators. A national leader in educating engineers, each year the College turns out new discoveries, inventions and top-flight graduates, all contributing to the strength of our economy and the vitality of our community.

## PREPARING THE NEXT GENERATION OF ENGINEERING LEADERS

The College works to ensure that students from all backgrounds succeed, from their first days on campus to their post-college careers.

### DIRECT-TO-COLLEGE ADMISSIONS

Every fall the College admits a student cohort directly into engineering as freshmen in order to better prepare them for an engineering education and future careers.

### STARS

The Washington State Academic RedShirt program provides highly motivated Washington state students from economically or educationally disadvantaged backgrounds with a specialized curriculum designed to build learning skills.

### CAREER CENTER @ ENGINEERING

The CC@E offers career coaching, career fairs, on-campus interviews and programming that prepares students for success in their engineering careers.

### INDUSTRY CAPSTONE PROGRAM

UW students and companies partner to tackle real-world, multidisciplinary engineering problems. Sponsors provide projects and support to teams of students who design innovative solutions.

UW ENGINEERING is ranked 24<sup>th</sup> among all engineering schools and 12<sup>th</sup> among engineering schools at public universities.

## STUDENT DEMOGRAPHICS

5,616	Undergraduate enrollment
1,462	Undergraduate degrees awarded
1,776	Master's program enrollment
892	Master's degrees awarded
1,147	Doctor of Philosophy program enrollment
149	Doctor of Philosophy degrees awarded

## DIVERSITY OF DEGREE RECIPIENTS

	B.S.	M.S.	Ph.D
Women	32%	36%	38%
Underrepresented minorities*	10%	13%	9%
Asian Americans	49%	29%	21%
Foreign nationals	17%	49%	47%
Washington residents	72%	46%	12%

\*Underrepresented minorities include African American, American Indian/Native American, Hispanic, and Hawaiian/Pacific Islander. The percentage shown is a percentage of total domestic (non-international) students.  
Data reported Autumn 2022

## ACADEMIC DEPARTMENTS & SCHOOLS

- William E. Boeing Department Aeronautics & Astronautics
- Bioengineering
- Chemical Engineering
- Civil & Environmental Engineering
- Paul G. Allen School of Computer Science & Engineering
- Electrical & Computer Engineering
- Human Centered Design & Engineering
- Industrial & Systems Engineering
- Materials Science & Engineering
- Mechanical Engineering

## COMMITMENT TO DIVERSITY AND ACCESS

The College of Engineering is committed to developing and supporting a diverse academic and research community that reflects and elevate the populations we serve. We offer a robust set of diversity programs for students and faculty.



A national leader: 27.6% of our faculty are women compared to 18% nationally

**ADVANCE** – Supports female faculty and cultural change in academic science and engineering careers

**DO-IT (Disabilities, Opportunities, Internetworking, Technology)** – Promotes inclusion and success for people with disabilities through technology and education

**EAC (Engineering Academic Center)** – Supports students in building skills in math, physics and chemistry through workshops and tutoring

**Engineering Academy** – Supports rising high school seniors from diverse backgrounds who wish to study engineering in an intensive summer program

**Engineering Dean's Scholars** – Supports a cohort of underserved students through a summer transition program and quarterly academic workshops

**MSEP (Minority Scholars Engineering Program)** – Recruits and retains underrepresented students in engineering

**PEERs (Promoting Equity in Engineering Relationships)** – Increases diverse participation in the College of Engineering through a 3-credit seminar and community leadership program

**STARS (Washington State Academic RedShirt in Engineering)** – Brings low-income, highly motivated Washington state high school graduates to the UW (and WSU) to study engineering

**WiSE (Women in Science & Engineering)** – Provides recruitment and retention programs for women in science and engineering

## Economic impact in Washington state

Engineers drive the innovation economy and are vital to solving society's most challenging problems. Investment in engineering—degrees and research—is directly linked to overall economic health. **For every dollar of state appropriation invested in the College, \$6 is generated in the economy.**

- **\$594 million** generated annually.
- **\$32 million** generated in annual Washington state and local tax revenues.
- **3,252 jobs** supported and sustained.
- **\$14 billion** generated by alumni over their careers.
- **#1 source** of all UW start-ups.
- **44 companies** started in the last five years by UW engineering students and faculty or technology.
- **\$172.5 million** in externally funded research in FY22.



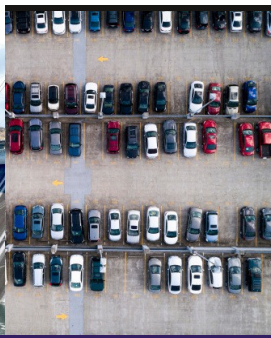




Environment



Energy



Manufacturing



Health



Infrastructure/Smart Cities

## STRATEGIC RESEARCH AREAS

### ENVIRONMENT

**Freshwater@UW** – A collaboration between CoE, UW Tacoma and the College of the Environment to coordinate research and funding on high-profile water-related problems at the local to international scale.

**Mountains to Sea** – An initiative of Freshwater@UW to facilitate water sustainability research at UW that addresses work relevant to the PNW.

### ENERGY

**Clean Energy Institute (CEI)** – Accelerating the creation of a clean energy economy and growing Washington's capacity for a sustainable environment.

**Pacific Marine Energy Center** – A consortium of universities focused on the responsible advancement of marine energy.

### MANUFACTURING

**Advanced Composites Center (ACC)** – Anticipated to launch in 2021, the ACC will be a robust innovation ecosystem for industry and academia to advance the field of data-driven methods for composites manufacturing.

**Boeing Advanced Research Center (BARC)** – Boeing-employed affiliate instructors work with faculty and students on joint research projects in the manufacturing and assembly of aircraft and spacecraft structures.

**Center for Digital Fabrication (DFab)** – A network of researchers, educators, industry partners, and community members advancing the field of digital fabrication at UW and in the greater Seattle region.

**Nanotechnology Engineering & Science (NanoES)** – Providing education and research infrastructure, this program develops technologies to measure and manipulate at the nanoscale.

**Washington Nanofabrication Facility (WNF)** – A full service micro and nanotechnology user facility and the largest public access fabrication center in the Pacific Northwest, with 15K square feet of laboratories, clean rooms and user spaces.

### HEALTH

**Engineering Innovation in Health (EIH)** – A strategic research initiative to train the next generation of engineers and clinical fellows to develop technologies that improve care and reduce cost.

**Center for Neurotechnology (CNT)** – An NSF-funded Engineering Research Center advancing the integration of technologies with the human neural system by bringing together leaders in robotics, neuroscience, computer science and other disciplines.

### INFRASTRUCTURE AND SMART CITIES

**Supply Chain and Transportation Logistics Center (SCTL)** – The first of its kind in the Pacific Northwest, the center unites industry, transportation infrastructure agencies and policy makers for supply chain, transportation and logistics research and education.

**RAPID Natural Hazards Reconnaissance Facility** – Funded by an NSF grant, the facility houses state-of-the-art equipment to support the collection of perishable data in the aftermath of earthquakes and wind hazards with the goal of developing more resilient communities.

**The Pacific Northwest Transportation Consortium (PacTrans)** – Serves as an engine of transportation research, education and workforce development in the PNW.

### FACULTY

**289**

FACULTY  
(27.6% women)



### ACHIEVEMENTS

**32**

Sloan  
Foundation  
Research Awards

**3**

MacArthur  
Foundation  
Fellows

**129**

NSF Young  
Investigator/Early  
Career Awards  
since 1984

## TRAILBLAZERS

Graduates of the College of Engineering have pioneered efforts in technology, aerospace and government. Here are some outstanding examples of how our alumni are changing the world:



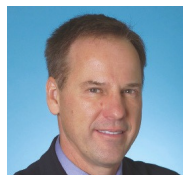
**Yaw Anokwa (Ph.D. CS '12)** is the creator of Open Data Kit, open-source software developed for resource-constrained environments and one of the most widely used tools for data collection in the world.



**Jane Grande-Allen (Ph.D. BioE '98)** pioneered heart valve tissue engineering and paved the way for alternatives to conventional open-heart surgery and advances in regenerative medicine for countless patients.



**Jeet Bindra (M.S. ChemE '70)** is the former president of global manufacturing for Chevron Corp.; he led the development of a pipeline from the Tengiz Field in Kazakhstan to the Black Sea.



**Jeremy Jaech (M.S. CSE '80)** is an accomplished entrepreneur who co-founded software companies Aldus (acquired by Adobe), Visio (acquired by Microsoft) and Trumba; he serves as UW regent.



**Suzanna Darcy-Hennemann (B.S. AA '81)** is a record-breaking chief-pilot, director of flight training and designated captain of multiple jets at The Boeing Company; and the first woman to serve as a Boeing test pilot.



**Peter Janicki (M.S. ME '89)** founded Janicki Industries, pioneering composite manufacturing with applications in aerospace, wind-energy and transportation industries.



**Jeff Dean (Ph.D. CS '96)** is the current lead of Google's AI division; since joining Google in 1999, he has contributed to significant developments in Google's systems and underlying infrastructure.



**Sally Jewell (B.S. ME '78)** served as the 51st U.S. Secretary of the Interior under President Barack Obama. Previously, she was the president and CEO of REI, the nation's largest consumer cooperative.

## LEADERSHIP

### Nancy Allbritton

Frank & Julie Jungers Dean of Engineering

### Pedro Arduino

Special Assistant to the Dean

### David Iyall

Associate Dean for Advancement

### Kojay Pan

Associate Dean of Finance and Operations

### Daniel Ratner

Associate Dean of Academic Affairs

### Tueng Shen

Associate Dean of Medical Technology Innovation

### Karen Thomas-Brown

Associate Dean for Diversity, Equity and Inclusion

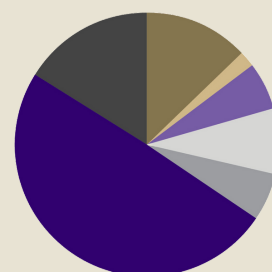
### Jihui Yang

Vice Dean

## FINANCING ENGINEERING

### Sources of Funds

Tuition	13%
Investment Income	2%
Auxiliary	6%
State Appropriations	8%
Research Cost Recovery	6%
Grants & Contracts	50%
Gifts and Discretionary	16%



## ABOUT THE UW

**State Impact:** The UW is the 5th largest employer in Washington state, supporting over 100,000 direct and indirect jobs.

**Research Funding:** The UW receives more federal research dollars than any other public university in the nation. In FY20, the UW received \$1.63 billion in total research awards from federal and nonfederal sources.

**Access:** Nearly 10,000 UW undergraduates from Washington state have tuition and fees fully covered by the Husky Promise scholarship program. This makes our university one of the most economically diverse in the nation.

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UNIVERSITY of WASHINGTON

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