



# 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 20th among all engineering schools with more than half of its departments ranked in the top 20 of their respective fields.

## STUDENT DEMOGRAPHICS

5,095	Undergraduate enrollment
1,359	Undergraduate degrees awarded
1,817	Master's program enrollment
838	Master's degrees awarded
1,077	Doctor of Philosophy program enrollment
169	Doctor of Philosophy degrees awarded

## DIVERSITY OF DEGREE RECIPIENTS

	BS	MS	PhD
Women	29%	32%	34%
Underrepresented minorities*	10%	12%	6%
Asian Americans	32%	17%	12%
Foreign nationals	19%	33%	40%
Washington residents	67%	41%	19%

\*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 2020

## ACADEMIC DEPARTMENTS & SCHOOLS

- William E. Boeing Department of 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 student body and faculty that reflect and elevate the populations we serve. We offer a robust set of diversity programs for students and faculty.



A national leader: 26.3% of our faculty are women compared to 17.4% 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

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

**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

## Engineering Innovation

Engineers drive the innovation economy and are vital to solving society's most challenging problems. The College of Engineering is a key part of a world-class research university in a thriving hub of aerospace, biotechnology, global health and information technology innovation.

**In 2019**, Reuters ranked the UW as the most innovative public university in the U.S.

**44 companies** started in the last five years by UW engineering students and faculty or technology.

**Over 50%** of UW startups in FY19 came from the College of Engineering.

**In FY19, UW** received \$1.58 billion in total research awards from federal and non-federal sources.

**Engineering research** expenditures totaled \$173M in FY19.







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

**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.

**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.

**Rapid Deployment of Designer Materials in Devices and Smart & Resilient Infrastructure** – A strategic research initiative to create and deploy designer materials enabled by additive manufacturing.

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

**Digital Manufacturing and Design Innovation Institute (DMDII)** – A public-private partnership to create tools and technologies to integrate digital efforts in manufacturing to increase the competitiveness of American manufacturing.

### 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

**275**

FACULTY  
(26.3% women)



### ACHIEVEMENTS

**32**

Sloan  
Foundation  
Research Awards

**2**

MacArthur  
Foundation  
Fellows

**128**

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, a free and open-source software developed for resource-constrained environments and one of the most widely used tools for data collection in the world.



**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.



**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.



**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.



**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.



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



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



**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

### Jihui Yang

Vice Dean

### Pedro Arduino

Associate Dean of Infrastructure

### Daniel Ratner

Associate Dean of Academic Affairs

### Judy Mahoney

Associate Dean of Advancement

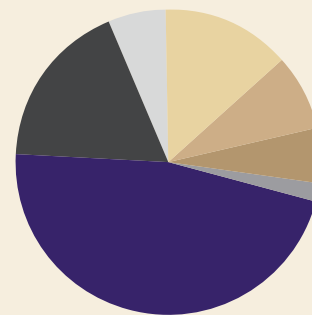
### Tueng Shen

Associate Dean of Medical Technology Innovation

## FINANCING ENGINEERING

### Sources of Funds

Tuition	12%
Investment Income	2%
Auxiliary	6%
State Appropriations	8%
Research Cost Recovery	5%
Grants & Contracts	52%
Gifts and Discretionary	15%



## 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 FY19, the UW received \$1.58 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.