



# TRAILBLAZERS

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

**Jeet Bindra** (MS '70 Chemical Engineering) is the former president of global manufacturing for the Chevron Corporation. During his 32-year career, he led an effort to negotiate the financing, design and construction of a pipeline from the Tengiz Field in Kazakhstan to the Black Sea. He has served on the board of Edison International/Southern California Edison Company and was the vice chairman of the American Association of Oil Pipelines.

**Suzanna Darcy-Hennemann** (BS '81 Aeronautics & Astronautics) is a record-breaking chief pilot, director of flight training and designated captain of multiple jets at The Boeing Company, as well as the first woman to serve as a Boeing test pilot and the first female captain of the 747-400 and 777. She led the team that set a world record for distance traveled nonstop by a passenger plane by flying from Hong Kong to London in just over 22 hours — a record that still holds to this day.

**Jeremy Jaech** (MS '80 Computer Science & Engineering) is a University of Washington regent and most recently served as CEO of Verdiem, a company in the enterprise PC energy management space. Jeremy is an accomplished entrepreneur who has co-founded software companies including Aldus (acquired by Adobe and branded as PageMaker), Visio (acquired by Microsoft) and Trumba.

**Peter Janicki** (MS '89 Mechanical Engineering) founded Janicki Industries, pioneering composite manufacturing with the development of a proprietary five-axis mill with applications in the aerospace, wind energy and transportation industries. In a partnership with the Gates Foundation, Peter developed the Omni Processor, a revolutionary device that transforms human waste into clean water and energy.

**Sally Jewell** (BS '78 Mechanical Engineering) served as the 51st United States Secretary of the Interior, leading an agency with over 70,000 employees and stewarded 20 percent of the nation's lands, including national parks and wildlife refuges. Previously, Sally was the president and CEO of REI, a national outdoor retailer and the nation's largest consumer cooperative. She served as a UW regent from 2001 to 2013.

**Dennis Muilenburg** (MS '90 Aeronautics & Astronautics) is chairman of the board, president and chief executive officer of The Boeing Company. Since 1985, he has held a progression of positions on F-22, Airborne Laser, High Speed Civil Transport and the Condor reconnaissance aircraft, among others. He is an associate fellow of the American Institute of Aeronautics and Astronautics (AIAA) and a fellow of the Royal Aeronautical Society.

**Kevin Ross** (BS '88 Computer Science) is the founder of Washington FIRST Robotics, focused on inspiring students to become science and engineering leaders through team-based robotics competitions that take place statewide and nationally. Washington FIRST Robotics works with over 7,500 K-12 students and 2,000 volunteers in Washington state and matches student groups with mentors to provide high-quality experiences.

**Todd Zarfos** (MS '90 Electrical Engineering) is the Vice President for Engineering Functions and the Washington State Design Center, and Senior Chief Engineer of Airplane Systems within Boeing Commercial Airplanes. He oversees the Washington state design centers for all commercial airplanes, the training and development of the technical workforce and supply chain management for technical services. He is a 2017 fellow of the American Institute of Aeronautics and Astronautics (AIAA).

## LEADERSHIP

**Michael B. Bragg**  
Frank & Julie Jungers Dean of Engineering

**Greg Miller**  
Vice Dean

**Pedro Arduino**  
Associate Dean of Infrastructure

**Santosh Devasia**  
Associate Dean of Research & Faculty Affairs

**Brian Fabien**  
Associate Dean of Academic Affairs

**Eve Riskin**  
Associate Dean of Diversity & Access

**Judy Mahoney**  
Associate Dean of Advancement



## ABOUT THE UNIVERSITY

**State Funding:** State dollars represent 5 percent of the UW's budget.

**Research Funding:** The UW receives more federal research dollars than any other public university in the nation — in FY16, the UW received \$1.37 billion in total research awards.

**Access:** One in every four current UW undergraduates from Washington state have their tuition and fees fully covered by the Husky Promise scholarship program. This makes our university one of the most economically diverse in the nation.

UNIVERSITY *of* WASHINGTON

# COLLEGE OF ENGINEERING

# W

As today's challenges become larger, there has never been a greater need for innovative thinking. 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 health and vitality of our community.

## ACADEMIC DEPARTMENTS

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

## DEGREE PROGRAMS

**Bachelor of Science (BS)** - prepares students for graduate work or careers in industry.

**Master of Science (MS)** - prepares students with a high level of technical competence for careers as professional engineers, or for further graduate study.

**Doctor of Philosophy (PhD)** - trains engineers for research leadership roles in academia, industry and research institutions.

## STUDENT DEMOGRAPHICS

Undergraduate enrollment: 5,582 | Bachelor's degrees awarded 2016: 994  
Graduate enrollment: 2,543 | Master's degrees awarded 2016: 607  
Doctoral degrees awarded 2016: 121

DIVERSITY OF DEGREE RECIPIENTS	BS	MS	PhD
Women	27%	31%	25%
Underrepresented minorities*	7%	7%	7%
Asian Americans	27%	15%	9%
Foreign nationals	18%	28%	39%
Washington residents	72%	45%	23%

*\*African American, Hispanic American, Native American and Hawaiian/Pacific Islander*

## FACULTY

**258 faculty** (22.4% women)

**Achievements:**

- 22 members of the National Academy of Engineering
- 120 NSF Young Investigator/Early Career Awards since 1984
- 30 Sloan Foundation Research Awards
- 2 MacArthur Foundation Fellows



# ENGINEERING INNOVATION

## ECONOMIC IMPACT ON WASHINGTON STATE

Engineers drive the innovation economy and are vital to solving society's largest problems. The University of Washington's College of Engineering plays a critical role in educating tomorrow's innovators. The UW is an economic powerhouse in the state, directly and indirectly affecting every resident of Washington. The College of Engineering accounts for 5% of UW's overall impact generating revenue, jobs and spending.

## COMMITMENT TO DIVERSITY & 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 are a national leader in women in engineering; 22.4% of our faculty are women compared to 15.7% nationally. We offer a robust set of diversity programs for students and faculty.

## RESEARCH & COMMERCIALIZATION

The University of Washington is an engine of economic growth, today ranked third in the nation for the number of startups launched each year, with 65 companies having been started in the last five years alone by UW students and faculty, or with technology developed here. The College of Engineering is a key contributor to these innovations, and engineering faculty, students or technology are behind many UW startups. Engineering research expenditures totaled \$151 million in FY 2016.

**OVER 40%** of all UW startups in FY16 came from the College of Engineering.

**2012 - 2016**

- 959 innovations reported
- 1481 patents filed

UW is #2 for public universities in federal research funding

UW sponsored research totals over \$1.3 B annually

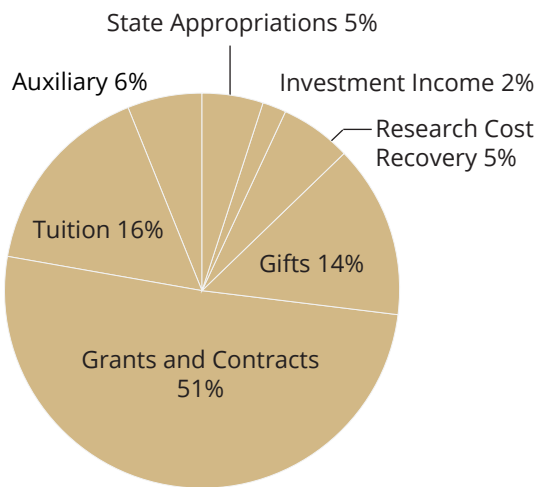
**\$151 M** in externally funded research

**65** startup companies created by students, faculty or with College of Engineering technology.

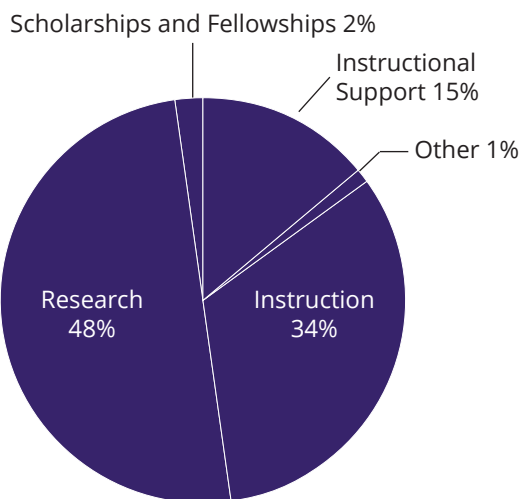
## FINANCING ENGINEERING

- The College of Engineering has varied revenue sources with grants and contracts making up 51 percent of \$245 million of total revenues for fiscal year 2016.
- Tuition represents 16 percent of total revenues and state operating appropriations were 5 percent of total revenues.
- Two primary functions of the University, instruction and research, comprised 83 percent of the total operating expenses of the College of Engineering.
- The College of Engineering provided over \$4.8 million in scholarships and fellowships to students.

## COE SOURCES OF FUNDS FY 2016



## COE USES OF FUNDS FY 2016



# PROGRAMS

## RESEARCH

### Bio-Sciences

- Center for Sensorimotor Neural Engineering (CSNE)
- Genetically Engineered Materials Science and Engineering Center (GEMSEC)
- Microscale Life Sciences Center
- National ESCA and Surface Analysis Center for Biomedical Problems (NESAC/BIO)
- National Simulation Resource Center Physiome Project (NSR)
- Resource Facility for Population Kinetics (RFPK)
- University of Washington Engineered Biomaterials Research Center (UWEB)

### Electronics and Computing

- Center for Collaborative Technology
- Center for Design of Analog-Digital Integrated Circuits (CDADIC)
- Laboratory for Usability Testing and Evaluation (LUTE Lab)
- Turing Center

### Energy

- Advanced Materials for Energy (AME)
- Bioenergy Program
- Northwest National Marine Renewable Energy Center (NNMREC)
- Plasma Science and Innovation Center

### Materials and Structures

- Center for Intelligent Materials and Systems (CIMS)
- Center of Excellence for Advanced Materials in Transport Aircraft Structures (AMTAS)
- Institute of Advanced Materials & Technology (i-AMT)
- National Institute of Materials Science (NIMS)
- Post-Disaster Rapid Response Research Facility

### Molecular Engineering, Nanotechnology & Microfabrication

- Center for Nanotechnology
- Molecular Engineering & Sciences Institute
- NanoTech User Facility
- Washington Nanofabrication Facility

### Transportation

- Intelligent Transportation Systems
- Pacific Northwest Transportation Consortium (PacTrans)
- Washington State Transportation Center (TRAC)

### Other centers involving engineering faculty

- Boeing Advanced Research Center (BARC)
- Center for Materials and Devices for Information Technology Research
- Center for Process Analytical Chemistry (CPAC)

## DIVERSITY

### ADVANCE

NSF-funded, supports women faculty and cultural change in academic science and engineering careers

### DO-IT (Disabilities, Opportunities, Internetworking, Technology)

Provides outreach for students with disabilities, and resources for educators and employers

### Mathematics Academy

A summer program for rising high school seniors from diverse backgrounds who wish to pursue the study of engineering

### MSEP (Minority Scholars Engineering Program)

Provides recruitment and retention programs for underrepresented minority 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)

Funded by NSF, 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

## COMMUNITY

### Career Center @ Engineering (CC@E)

Provides students with professional development, career guidance and networking opportunities with industry

### Professional and Continuing Education (PCE)

Provides continuing education and professional development for engineers in allied technical professionals

## LEADERSHIP IN ENGINEERING EDUCATION

### Center for Engineering Learning & Teaching (CELT)

Improves engineering education through research and faculty development

