

TRAILBLAZERS

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

Bonnie Dunbar (BS '71, MS '75 Materials Science & Engineering) One of the most experienced female astronauts in the world, with 50 days in space covering 20.4 million miles in five space shuttle flights. Dr. Dunbar served as Assistant Director of the NASA Johnson Space Center and is currently President and CEO of the Museum of Flight.

Jeff Dean (MS '93 PhD '96 Computer Science & Engineering) has helped to develop and implement three generations of Google's Web crawling, indexing and query serving systems - covering two and three orders of magnitude growth in number of documents searched, number of queries handled per second, and frequency of updates to the system.

Savio Woo (MS '66 PhD '71 Mechanical Engineering) as a bioengineering pioneer, his discoveries on the biomechanics of the knee transformed the healing process for ligament injuries and greatly shortened rehabilitation time for sports injuries.

Donna Sakson (BS '82 Technical Communication) founded Sakson & Taylor, a technical communications company that became one of the most successful of its kind worldwide.

Daniel Evans (BS '48, MS '49 Civil & Environmental Engineering) parlayed a stint in the U.S. Navy and a College of Engineering education into a distinguished career in public service. A U.S. senator, governor, and educator, he has dedicated his life to serving his country and the state of Washington.

Frank Robinson (BS '57 Mechanical Engineering) founder, President & CEO Robinson Helicopter, he designed the prototype for the R22 that became the foundation for his company. It is the largest manufacturer of civilian helicopters in the country.

Joseph Sutter (BS '43 Aeronautics & Astronautics) A recipient of the National Medal of Technology, Sutter directed product development of the 747, 757, 767, and 747-300 aircraft. He served as Executive Vice President of The Boeing Commercial Airplane Company.

Jeet Bindra (MS '70 Chemical Engineering) recently retired from Chevron Texaco as president, Global Manufacturing, where he oversaw 10,000+ employees and 20 refineries worldwide. He is a highly respected leader and is widely credited for championing workplace diversity.

COLLEGE OF ENGINEERING UNIVERSITY of WASHINGTON

Innovation. *It's the Washington Way.*

As today's challenges become larger, there has never been a bigger 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.

College of Engineering Education

Academic Departments

- 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: 4,085

Undergraduate degrees awarded 2011: 801

Graduate enrollment: 1,787

Master's degrees awarded 2011: 408

Doctor of Philosophy degrees awarded 2011: 110

DIVERSITY OF DEGREE RECIPIENTS	BS	MS	PhD
Women	24%	28%	28%
Underrepresented Minorities*	6%	5%	3%
Asian American	28%	13%	9%
Foreign Nationals	8%	18%	42%

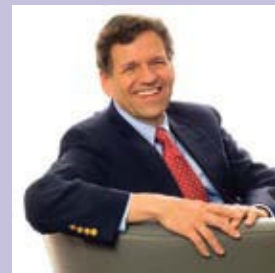
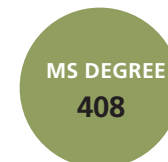
*African American, Hispanic American, Native American, and Hawaiian/Pacific Islander

Faculty

228 faculty: 29% minority, 21% women

Achievements:

- 11 members of the National Academy of Engineering
- 87 NSF Young Investigator/Early Career Awards since 1984
- 17 Sloan Foundation Research Awards
- 1 Technology Review 35 under 35 (TR35) award recipient in 2009, 3 in 2007
- 3 elected to Fellows in AAAS (American Association for the Advancement of Science) in 2007
- 2 MacArthur Foundation Fellows (2007 and 2011)



"Engineering must be at the core of a university in the twenty-first century. Interdisciplinary research and education is not just our hallmark, it is key to our success."

MATTHEW O'DONNELL, FRANK AND JULIE JUNGERS DEAN OF ENGINEERING

LEADERSHIP

Matthew O'Donnell

Frank & Julie Jungers Dean of Engineering

Mari Ostendorf

Associate Dean of Research & Graduate Studies

Eve Riskin

Associate Dean of Academic Affairs

Judy Mahoney

Assistant Dean of Advancement

David Castner

Associate Dean of Infrastructure

ABOUT THE UNIVERSITY

State Funding: State dollars represent 10 percent of the UW's revenue.

Federal Funding: For more than three decades, the UW has secured more federal research funding than any other public university in the country. In 2010, sponsored research at the UW totaled over \$1.4 billion, reaffirming our position as a global research leader.

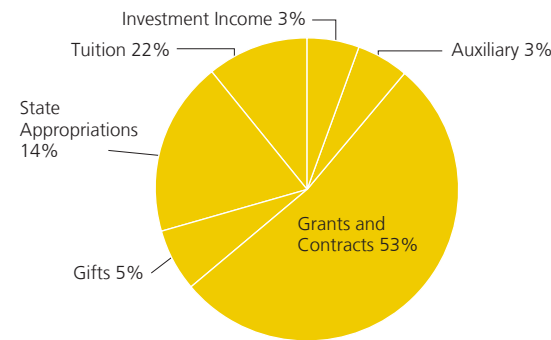
New Enterprise: Over 250 companies have been started by UW students or faculty, or with UW technology. The College of Engineering is a key contributor to these innovations.

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.

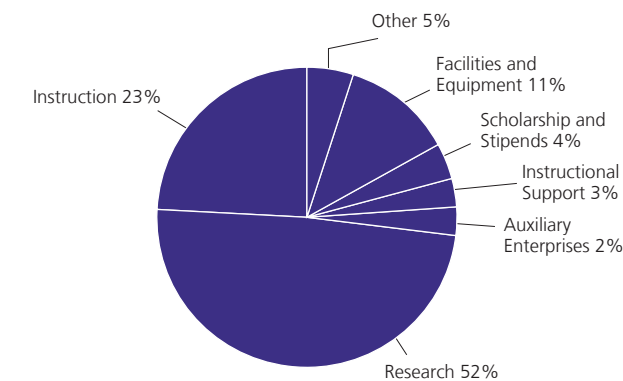
Financing Engineering

- The College of Engineering has varied revenue sources with grants & contracts making up 53 percent of total revenues for fiscal year 2011.
- Tuition represents 22 percent of total revenues and state operating appropriations were 14 percent of total revenues.
- Income from gifts totaled \$11.8 million (5 percent) of total revenues.
- Two primary functions of the University, instruction & research comprised 75 percent of the total operating expenses of the College of Engineering.
- The College of Engineering provided over \$9.0 million in scholarships and stipends to students. This represented 4 percent of operating expenditures.

COE Sources of Funds FY 2011



COE uses of Funds FY 2011



Molecular Engineering: Tiny Solutions for Big Problems

Molecular engineering (MoE) is an emerging highly interdisciplinary field, tapping expertise in engineering, chemistry, biology, the medical sciences and computation/modeling. Dozens of UW faculty members are helping to define what it means to be molecular engineers. Molecular engineering promises significant advances in energy and medical applications.

MoE in Energy Delivery

Tapping renewable resources, reducing energy waste and pollution

Solar Power: Advanced solar cells and systems will produce efficient, cost-effective energy for many applications.

Smart Materials: Reconfigurable materials will reduce energy waste by improving energy generation, storage, and transport.

Biomass Fuel: New molecular processes will turn logging wastes and algae into inexpensive, widely used renewable energy resources for transportation.

MoE in Medicine

Transforming mass medicine into precise, personalized diagnostics and therapeutics

Earlier Diagnosis: Molecular imaging tools will help lead to preventive techniques that also help reduce health care costs.

Better Treatments: New drugs working inside cells will treat the most life-threatening diseases with fewer side effects.

Care for the Poorest: Portable diagnostic tools that withstand extreme environmental conditions will enable better health care in the poorest and harshest regions of the world.

Molecular Engineering Building

A new UW molecular engineering building, currently under construction, will further the work. The \$120-million, 160,000-square-foot facility, to be constructed in two phases, features large research laboratories, ultra-sensitive ground contact lab space, faculty offices, conference rooms, and space for graduate students. Phase I funding includes state and internal UW funds, as well as debt and private gifts. The project is expected to meet at least a LEED-NC Silver rating for energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources. Occupancy date for the building is 2012.



Programs

Leadership In Engineering Education

Center for Engineering Learning & Teaching (CELT)
Improves engineering education through research and faculty development

Center for Advancement of Engineering Education (CAEE)
Funded by the NSF, a collaboration of universities to improve engineering education

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

GenOM

Recruits and advises minority students in genomics

MESA (Mathematics, Engineering, Science Achievement)

Provides outreach for underrepresented K-12 students to encourage them to pursue technical study

MSEP (Minority Scholars & Engineering Program)

Provides recruitment and retention programs for underrepresented minority students in engineering

WiSE (Women in Science & Engineering)

Provides recruitment and retention programs for women in science and engineering

Mathematics Academy

A summer program for 12th grade students from diverse backgrounds who wish to pursue the study of engineering.

Community

CO-OP (Engineering Cooperative Education Program)

Assists employers in hiring qualified, interested students for 3-6 month engineering Co-op positions

EPP (Engineering Professional Programs)

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

EDGE (Education/Distance Learning)

Provides graduate degrees and certificate programs in engineering to working professionals; courses are delivered via web streaming and CD-ROM

Research

Bio-Sciences

- Genetically Engineered Materials Science and Engineering Center (GEMSEC)
- Microscale Life Sciences Center
- National ESCA 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)
- Intel Research Seattle
- Turing Center

Energy

- 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 and Technology (i-AMT)
- National Institute of Materials Science (NIMS)
- Pacific Earthquake Engineering Research Center (PEER)

Nanotechnology

- Center for Nanotechnology
- NanoTech User Facility

Transportation

- Intelligent Transportation Systems
- Transportation Northwest (TransNow)
- Washington State Transportation Center (TRAC)

Other Centers Involving Engineering Faculty

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

