UNIVERSITY of WASHINGTON

BIORESOURCE SCIENCE & ENGINEERING

BIORESOURCE SCIENTISTS AND ENGINEERS DEVELOP TECHNOLOGIES AND PROCESSES TO PRODUCE ENERGY, FUELS, & PRODUCTS FROM SUSTAINABLE BIORESOURCES.

QUICK FACTS

Graduates have essentially 100% job placement in their field of study.

All students participate in one or more internships.

Substantial scholarship money (both need and merit-based) is available in the School.

Average class size in major classes is 10 students or less.

BSE design projects win awards, including first place in regional business competitions.

WHAT DO BIORESOURCE SCIENTISTS & ENGINEERS DO?

Bioresource scientists and engineers use chemical science and engineering to manufacture, using low impact conversion processes, sustainable products, fuels, and chemicals from biomass resources such as wood, agricultural residuals, and organic waste from industry and households. This multidisciplinary program applies chemistry, mathematics, and engineering to bioresources-based industries to optimally produce value-added products from sustainable natural resources.

WHAT PROBLEMS ARE BIORESOURCE SCIENTISTS & ENGINEERS TRYING TO SOLVE?

Bioresource scientists and engineers manage processes to manufacture environmentally sound products from sustainable natural resources. Students receive hands-on education as undergraduates to address topics such as:

- How do we transform low value waste materials into high value products?
- How can we use the bioconversion of biomass to make useful fuels and chemicals?
- What kind of natural non-wood products can we use to make paper and other bio-products?
- How can we produce unique nanocarbon structures from biomass?
- How can we create electronics from paper nanocomposites?
- How can we develop processes that clean up the environment while providing products and chemicals we use every day?

WHERE DO BSE ALUMNI WORK?

BSE graduates begin careers in positions as process engineer, technical sales engineer, product development engineer, environmental engineer or scientist, and research engineer as well as other specialties requiring a fundamental chemical engineering background. Alumni get into top-ranked graduate programs in engineering, law, business, environmental health / science, and also work in a broad range of industries. Some examples:

Manufacturing – materials engineering, environmental engineering, process engineering, manufacturing engineering	*Boeing, Department of Defense, Tesla, Fluke, Siemens*
Chemicals – technical sales, process engineering, biofuels	*BASF, GEVO, Kemira, Nalco*
Bioproducts – process engineering, environmental engineering, instrumentation and process control, technical sales	*International Paper, Georgia-Pacific, WestRock, Domtar, NORPAC, Sonoco, Port Townsend Paper*
Engineering and Environmental Systems – data programming, process design, engineering consulting, transportation systems, utility planning, sustainability specialist, environmental planning	*Harris Group, Capstone Technologies, MAJIQ, AT&T, Snohomish County PUD, King County Wastewater Treatment division, Seattle Department of Transportation*

RECENT SPECIAL DESIGN PROJECTS

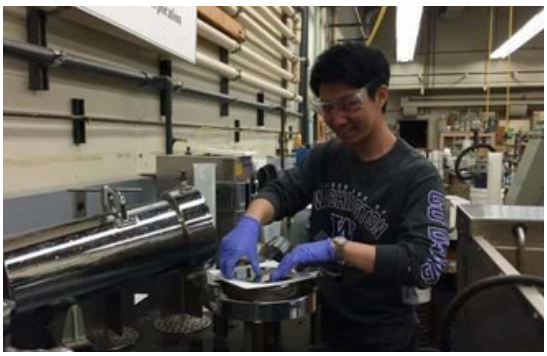
- **BioPots –** Plant pots produced from brewery spent grains
- **NanoPrint –** 3D printing materials produced from biomass feedstock
- **Waste to fuel –** Fuel grade ethanol produced from paper waste streams
- **Recyclable coffee cup –** Paper coffee cup that is both compostable and recyclable; all produced from biomass resources
- **"Green" water bottles** – Biodegradable water bottles produced from invasive species biomass

WHAT MAKES BSE SPECIAL?

Students are placed in tight-knit cohorts and work in small classes currently averaging 20 students or less. They receive ample opportunities for research, and work closely with faculty and industry. The BSE program partners with the Washington Pulp and Paper Foundation for scholarships, internships and career planning. Students receive particularly strong process engineering training, and graduates work as process engineers in many industries.

HOW CAN I LEARN MORE?

If you think BSE might be for you, there are many opportunities to explore. You can start doing research in a BSE lab even before placing into a major. Consider taking classes for non-majors such as BSE 210: Concepts in Bioproduct Sustainability or joining the TAPPI student organization in BSE.



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