

# Bioanalytical and Environmental Chemistry Graduate Program at Oregon State University

## Research Interests

- Bioanalytical chemistry
- Application of analytical techniques to environmental problems
- Transport and fate of semi-volatile compounds in the atmosphere and water-borne contaminants in the subsurface environment
- Bio-remediation techniques
- Applications of mass spectrometry to molecular biological problems
- Development of microscale instrumentation and portable sensors for environmental and other analytical uses.

Faculty members interact extensively with Environmental Health Sciences Center, Environmental and Molecular Toxicology Department, and Microtechnology-Based Energy, Biology and Chemical Systems Initiatives



## Graduate Program

- Graduate students in good standing are fully supported by a combination of research grants and/or departmental funds.
- 2003/2004 annual graduate stipend is \$18,000 plus the cost of tuition, totalling approximately \$30,000.
- Active seminar series, including Linus Pauling Lecture Series, brings internationally recognized academic and industrial guest speakers to OSU.
- Coursework is individually tailored to student's interests.
- Career placement includes pharmaceutical labs, forensics and industrial labs, and governmental environmental agencies, as well as academic positions.

## Corvallis and the Northwest

Corvallis, flanked by the Coast Range and Cascade mountains, lies on the southwest edge of the Willamette Valley. The climate is characterized by mild summer temperatures of 85° F, with clear blue skies and low humidity; winters are mild with lows of 37°F. The Pacific Northwest is famous for rain which supports a vast array of crops and nursery stock and provides a beautiful green landscape with waterfalls and rivers. A parade of volcanic peaks marches through the Cascade Mountains offering a spectacular back-drop for hiking, biking, camping, rock climbing, and water and snow sports.

## Facilities

Gilbert Hall and the Ag & Life Sciences Building house chemistry research and administrative offices with separate undergraduate teaching labs located in Gilbert Addition. The following list highlights current instrumentation available in the department:

- Gradient and isocratic HPLC systems, an HP1100 binary high-pressure gradient HPLC interfaced to an APCI quadrupole MS system
- MALDI TOF/TOF mass spectrometer (AB 4700) and capillary LC MALDI target spotter
- Micromass qTOF Ultima Global mass spectrometer
- Kratos MS50TC RF high resolution mass spectrometer
- Perkin Elmer Sciex API-III+ LC/MS/MS ionspray mass spectrometry system with an APCI source.
- Finnigan LCQ ion trap system
- UV and visible spectroscopic instrumentation as well as flame and furnace atomic absorption spectrometers, infrared spectroscopic instrumentation
- Custom-built systems for microscale HPLC and capillary electrokinetic separations
- Waters capillary LC system
- Electronic resources, including *Sci-Finder Scholar*, are licensed through the Valley Library
- Mascot, a proteomics search engine, is licensed through the Environmental Health Sciences Center.
- Micromass QuatroMicro LC ESI MS/MS mass spectrometry system
- Finnigan TSQ 700 GC EI/CI MS/MS mass spectrometry system.



For more information, please visit our Analytical/Environmental Chemistry website:

[www.chemistry.oregonstate.edu](http://www.chemistry.oregonstate.edu)

E-mail: [chemadm@oregonstate.edu](mailto:chemadm@oregonstate.edu)  
Toll-Free Phone: 1-800-557-7319



## Analytical and Environmental Chemistry at Oregon State University

**Douglas Barofsky** (doug.barofsky@oregonstate.edu) - PhD Pennsylvania State University. **Ionization processes and instrumentation involving mass spectrometry.** "We study ionization processes, methodologies, and instrumentation employed in mass spectrometric studies of organic molecules found in biochemical systems, microbiological systems, and environmental matrices."



**Jennifer Field** (jennifer.field@oregonstate.edu) - PhD Colorado School of Mines. **Fate and transport of organic chemicals in subsurface environment.** "Our research focuses on understanding the occurrence and behavior of organic pollutants in natural and engineered systems, including groundwater and municipal wastewater treatment, and development of methodology for analysis of aqueous and solid environmental samples."

**James D. Ingle, Jr.** (james.ingle@oregonstate.edu) - PhD Michigan State University. **Chemical sensors and portable field instrumentation.** "Our goal is to provide users with rapid feedback about analytical information appropriate for rapid assessment of field sites or control of processes at a moderate cost."



**Claudia S. Maier** (claudia.maier@oregonstate.edu) - PhD University of Konstanz, Germany. **Biomolecular mass spectrometry, proteomics.** "We employ mass spectrometry-based strategies for a) the structural and functional characterization of single proteins and their interaction with other biomolecules and b) the proteome-wide characterization of mitochondrial proteins and their post-translational modifications as a result of aging and age-related disorders."

**Vincent T. Remcho** (vincent.remcho@oregonstate.edu) PhD Virginia Tech. **Physical-analytical separations, analyte/ligand interaction studies.** "Our research focus is on unraveling & optimizing the mechanics of separations and applying separation techniques to problems in bioanalytical chemistry and environmental analysis."



**Staci Simonich** (staci.simonich@oregonstate.edu) - PhD Indiana University. **Regional and global environmental and analytical chemistry of semi-volatile organic compounds.** "My group studies the atmospheric transport and deposition of semi-volatile organic compounds to high elevation ecosystems along the Pacific coast of North America."

**J. Frederik Stevens** (fred.stevens@oregonstate.edu) - Ph.D. University of Groningen, The Netherlands. **Natural products and bioorganic chemistry.** "My research is aimed at contributing to the understanding of the effects of nutrition on development and progression of age-related diseases such as diabetes and atherosclerosis."



**John C. Westall** (john.westall@oregonstate.edu) - PhD M.I.T. **Environmental chemistry and electrochemistry.** "Our research is focused on the application of surface and solution chemistry to problems in environmental chemistry, electrochemistry, and analytical chemistry."

### Contact

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