



UNIVERSITY of California, Davis

Ag & Environmental Chemistry

Graduate Group in Agricultural & Environmental Chemistry

The graduate program in Agricultural and Environmental Chemistry, also known as Ag Chem, is the oldest graduate group on the UCD campus. Membership in the group includes 55 faculty members and approximately 36 graduate students. Although it is modest in size by student numbers, it ranks among the very best in quality as judged by the depth and breadth of training and job placement that our students receive.

The research interests of our faculty are diverse. They include chemistry of natural products, geochemistry, polymers (fibers), and environmental chemistry (atmospheric, soil, water, pesticide). They also include research on food, beer, wine, and health. Our faculty and graduate students have access to unique and diverse facilities at UCD, the Lawrence Livermore and Lawrence Berkeley National Laboratories, the Bodega Marine Laboratory, and Lake Tahoe. The Davis community is relatively small, friendly and only a short drive to the Sierra Nevada Mountain Range to the east and San Francisco and the Pacific Ocean to the west.

Our web page (agchem.ucdavis.edu) has considerable information and should aid students in matching their interests to a faculty member. We have support funds available for highly qualified students, especially if the application is received before **January 15th**.

Apply

MAILING ADDRESS:

Ag & Environmental Chemistry Graduate Group
Dept. of Environmental Toxicology
University of California
One Shields Avenue
Davis, CA 95616-8588

Graduate Group Chair
Dr. Susan E. Ebeler seebeler@ucdavis.edu

Graduate Program Coordinator
Peggy Royale pbroyale@ucdavis.edu
phone: 530-752-1415 fax: 530-752-3394

U C DAVIS GRADUATE GROUP IN AGRICULTURAL & ENVIRONMENTAL CHEMISTRY



FACULTY RESEARCH INTERESTS

by department

U C DAVIS GRADUATE GROUP IN AGRICULTURAL & ENVIRONMENTAL CHEMISTRY

ANIMAL SCIENCE

KING, Annie J.

Prevention of lipid oxidation in poultry muscle.

BIO & AGRICULTURAL ENGINEERING

VANDERGHEYNST, Jean S.

Remediation of agricultural residues and the production of food; modeling of transport and microbial kinetics; microbial ecology of biological systems, semi-solid and liquid cultivation of biological control agents.

CIVIL & ENVIRONMENTAL ENGINEERING

GREEN, Peter G.

Identification of contaminants in water, air, soil and sediments, their impacts and fate.

KLEEMAN, Michael J.

Measurement and modeling of urban and regional air pollution.

YOUNG, Tom M.

Physical-chemical processes in water, groundwater, and soil.

CHEMISTRY

KELLY, Peter B.

Environmental chemistry; combustion and hydrocarbon radicals.

NAMBIAR, Krishnan P.

Design and synthesis of peptides, peptidomimetics, sulfone nucleic acids and enzyme mimics.

SCHORE, Neil E.

Design of transition metal reagents for organic synthesis.

TANTILLO, Dean J.

Quantum chemical modeling of reactions involved in natural products biosynthesis.

ENTOMOLOGY

HAMMOCK, Bruce D.

Biochemistry and physiology of endocrine regulation in insects.

LEAL, Walter S.

Molecular basis of the highly selective and sensitive insect olfactory system.

SANBORN, Jim R.

Synthesis of haptens for development of immunochemical methods.

CORNEL, Anthony J.

Genomic studies on mosquitoes of medical importance. Particular emphasis on insecticide resistance genes and Anopheles polytene chromosome physical mapping.

ENVIRONMENTAL TOXICOLOGY

DENISON, Michael S.

Molecular toxicology, xenobiotic receptors and gene expression, dioxins and related halogenated aromatic hydrocarbons.

HENGEL, Matt J.

Determination of pesticide residues in fruits and vegetables and environmental samples (air, water, soil).

HOLSTEGE, Dirk M.

Develop analytical methodologies of analysis in soil, water, and plant and biological materials. Analysis of naturally occurring toxins of plant origin.

KADO, Norm Y.

Environmental analyses and toxicology of air pollutants.

KNEZOVICH, John P.

Application of isotopic tracers for determining the fate and toxicity of environmental concentrations of contaminants.

MATSUMURA, Fumio

Environmental toxicology of pesticides and dioxin-type chemicals.

SHIBAMOTO, Takayuki

Chemistry and physiology of flavors and fragrance. Mutagens and carcinogens occurring during heat treatment of foods.

TJEERDEMA, Ron S.

Biochemical mechanisms of environmental toxicants.

WOOD, Matthew J.

Molecular mechanisms of environmental toxicant perception and gene regulation.

FOOD SCIENCE & TECHNOLOGY

BARRETT, Diane M.

Role of enzymes in fruit and vegetable quality.

FRANKEL, Edwin N.

Lipid oxidation; food and biological antioxidants.

GERMAN, J. Bruce

Fatty acid metabolism and bioactive food ingredients.

MCCARTHY, Michael J.

Mass and momentum transfer during food processing; nuclear magnetic resonance of foods.

MITCHELL, Alyson E.

Food chemistry and toxicology.

SHOEMAKER, Charles F.

Food rheology; interfacial phenomena in food systems.

SMITH, Gary M.

Mechanisms of enzyme action.

GENOME CENTER

FIEHN, Oliver

Development and application of technologies for understanding metabolism.

LAND, AIR & WATER RESOURCES

ANASTASIO, Cort

Atmospheric chemistry and photochemistry.

ASHBAUGH, Lowell L.

Sources, generation mechanisms, and impacts of PM10 fugitive dust.

CASEY, William H.

Surface chemistry of minerals, aqueous geochemistry.

CLAASSEN, Victor P.

Soil fertility, plant nutrition and soil organic matter. Regeneration of soil function (infiltration, water retention, nutrient cycling) on drastically degraded land.

FALOONA, Ian C.

Atmospheric chemistry and mixing; developing fast sensitive techniques for measurement of biogeochemical trace gases and their fluxes.

HARTER, Thomas H.

Flow and transport processes in groundwater and in the vadose zone; groundwater pollution.

HORWATH, Will R.

Roles of soil organic matter in controlling soil fertility.

HRISTOVOVA, Krassimira R.

Microbial ecology of contaminated environments; genomic and metagenomic approaches to study microbial communities.

PARIKH, Sanjai, J.

Bacteria-mineral-humic substance-contaminant interactions influence biogeochemical cycling and environmental quality.

SCOW, Kate M.

Microbial ecology; biodegradation of organic pollutants (MTBE, perchlorate, pesticides, PAHs); bioremediation of contaminated soil, vadose, and groundwater.

SOUTHARD, Randal J.

Soil genesis, morphology, and classification.

White, Warren H.

Interpretation of air monitoring data; characterization of measurement uncertainty.

NUTRITION

CLIFFORD, Andrew J.

Nutritional status by novel analysis and modeling.

NEWMAN, John W.

Develop and apply metabolic tools to investigate mechanisms of biochemical and metabolic responses to dietary lipids in obesity and inflammation.

PUBLIC HEALTH SCIENCES

BENNETT, Deborah H.

Fate, transport, and exposure of pollutants in the environment.

PULMONARY MEDICINE

CROSS, Carroll E.

Antioxidants; oxidant injury in biological systems.

TEXTILES & CLOTHING

HSIEH, You-Lo

Surface properties of fibers and polymers.

SUN, Gang

Study of protective clothing against microorganisms and toxic chemicals.

VETERINARY MEDICINE

TEH, Swee J.

Adverse growth effects, reproduction and embryonic development in invertebrate, fish and shellfish populations caused by environmental endocrine disruptors and contaminants.

VITICULTURE & ENOLOGY

ADAMS, Doug O.

Plant biochemistry.

BISSON, Linda F.

Genetic construction & physiological analysis of improved yeast strains for wine production.

BOULTON, Roger B.

Wine fermentation and processing.

EBELER, Susan E.

Wine analysis and flavor chemistry.

HEYMANN, Hildegard

Sensory evaluation of wines and other food products.

WATERHOUSE, Andrew

Wine phenolics and oak components.