

SOIL SCIENCE, DOCTORAL MINOR

PEOPLE

FACULTY

Associate Professor Francisco Arriaga

Applied Soil Physics, Soil and Water Management and Conservation: Conservation agriculture systems; development of conservation tillage practices that enhance soil quality, soil hydraulic properties, and plant water use through the adoption of cover crops and non-inversion tillage for traditional cropping systems.

Professor Nicholas Balster

Soil Ecology, Plant Physiological Ecology, and Education: Energy and material cycling in natural and anthropogenic soils including forests, grasslands, and urban ecosystems; stable isotope ecology; environmental education; nutrition management of nursery soils; tree physiology, production and response; ecosystem response to global change; urban ecosystem processes; invasive plant ecology; biodiversity.

Professor Phillip Barak

Soil Chemistry and Plant Nutrition: Nutrient cycling; nutrient recovery from wastewater; molecular visualization of soil minerals and molecules; soil acidification.

Professor William Bleam

Surface and Colloid Chemistry: Physical chemistry of soil colloids and sorption processes, chemistry of humic substances, factors controlling biological availability of contaminants to microorganisms, magnetic resonance and synchrotron studies of adsorption and precipitation.

Assistant Professor Zachary Freedman

Soil microbiology, ecology and sustainability: Effects of environmental change on biogeochemical cycles; community ecology and trophic dynamics; forest soil ecology; soil organic matter dynamics; sustainable agroecosystems; bio-based product crop production on marginal lands.

Professor Alfred Hartemink

Pedology, Digital Soil Mapping: Pedology; soil carbon; digital soil mapping; tropical soils; history and philosophy of soil science.

Assistant Professor Jingyi Huang

Soil Physics, Proximal and Remote Sensing, Soil Monitoring and Management, Digital Soil Mapping: Application of proximal and remote sensing technologies for understanding the movement of water, heat, gas, and solutes in soils across different spatial and temporal scales; application of physical and empirical models for monitoring, mapping, and managing soil changes due to natural processes and human activities..

Professor Carrie Laboski

Soil Fertility and Nutrient Management: Sustaining agricultural production and environmental quality; elucidate the biogeochemistry and subsequent best management practices for N, P, and K fertilizers and animal manures; soil fertility related to lime, secondary, and micronutrients; evaluation of soil and plant diagnostic tests; development of tools to assist producers, ag. professionals, and regulatory agencies to sustain economically sound production of grain and forage crops.

Professor Joel Pedersen

Environmental Chemistry/Biochemistry: Behavior of organic contaminants, macromolecules, and engineered nanoparticles in natural and engineered environments.

Professor Matthew Ruark

Soil Fertility and Nutrient Management: Soil fertility and management of grain biofuel, and vegetable crops; cover crop management; agricultural production and water quality; sustainability of dairy cropping systems; soil organic matter management.

Professor Douglas Soldat

Turfgrass and Urban Soils–Turfgrass, urban soils, nutrient management, water resources, soil testing, landscape irrigation; soil contamination.

Assistant Professor Thea Whitman

Soil Ecology, Microbiology, and Biogeochemistry: Soil microbial ecology; organic matter decomposition and carbon stabilization; global environmental change; stable isotopes; linking functional significance of microbial communities with ecosystem processes; fire effects on soil carbon and microbes; management and policy.