

# Soil Science

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## Department Information

- **Director, School of Natural Resource Sciences:**  
Frank Casey, Ph.D.
- **Program Leader:**  
Thomas DeSutter, Ph.D.
- **Email:**  
Thomas.DeSutter@ndsu.edu
- **Department Location:**  
School of Natural Resource Sciences, Hultz 202
- **Department Phone:**  
(701) 231-5368
- **Department Web Site:**  
[www.ndsu.edu/snrs/degrees/graduate\\_degrees/](http://www.ndsu.edu/snrs/degrees/graduate_degrees/) ([http://www.ndsu.edu/snrs/degrees/graduate\\_degrees/](http://www.ndsu.edu/snrs/degrees/graduate_degrees/))
- **Application Deadline:**  
International applications are due May 1st for fall and August 1 for spring and summer semesters. Domestic applicants should apply at least one month prior to the start of classes.
- **Credential Offered:**  
Ph.D., M.S.
- **English Proficiency Requirements:**  
TOEFL iBT 71, IELTS 6; Duolingo 100

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The Department of Soil Science in the School of Natural Resource Sciences offers graduate study leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees that provide training in agricultural and/or environmental career tracks. The instructional research programs emphasize an understanding of soil-plant-atmosphere interactions and their application to soil and water resource management. Students may pursue degrees with emphasis in soil chemistry, soil fertility, soil ecology, soil physics, soil reclamation, soil genesis and morphology, soil management and conservation, environmental modeling, water quality, and soil salinity and sodicity. M.S. and Ph.D. programs in Natural Resources Management and Environmental and Conservation Science with emphasis in soil science are also available.

A close working relationship exists between the department and various state and federal agencies and the private sector. Strong supporting course work is available from other departments and programs at North Dakota State University (NDSU). Programs of study are designed to meet student interests and needs.

North Dakota's diversity of soils and agricultural practices provides an exceptional field setting in which to study soil science. The department is well equipped for field and laboratory investigations.

## Admissions Requirements

The Soil Science graduate program is open to all qualified graduates of universities and colleges of recognized standing. All applicants must meet the Graduate College requirements (<http://catalog.ndsu.edu/past-bulletin-archive/2022-23/graduate/admission-information/>).

## Financial Assistance

Research assistantships are available. Applicants are considered on the basis of scholarship, potential to undertake advanced study and research, and financial need. To be considered for an assistantship, applicants must submit a completed application. A complete application will include three recommendations, transcripts and a scholarly writing example. A TOEFL score for international applicants must also be received by the Graduate College.

The M.S. program normally requires 24 months of full-time study and research while the Ph.D. program normally requires a minimum of 36 months. An overall GPA of 3.0 or better must be maintained. An oral defense of thesis and academic subject matter is required of M.S. candidates. Ph.D. candidates are required to take a preliminary written and oral examination of academic subject matter and a final oral examination of a research-based dissertation.

### Francis X.M. Casey, Ph.D.

Iowa State University, 2000

Research Area/Activity: Field Oriented Soil Physics, Measurement and Prediction of Water Transfer and Chemical Transport Through Soil

### Larry J. Cihacek, Ph.D.

Iowa State University, 1979

Research Area/Activity: Erosion and Productivity Relationships, Conventional and Alternative Crop Management, Carbon Sequestration, Nutrient Management

**Thomas M. DeSutter, Ph.D.**

Kansas State University, 2004

Research Area/Activity: Trace Elements, Land Application of Byproducts, Inorganic Soil Chemistry, Soil Environmental Conditions

**David W. Franzen, Ph.D.**

University of Illinois, 1993

Research Area/Activity: Soil Fertility/State Soil Specialist

**Caley Gasch, Ph.D.**

University of Wyoming, 2013

Research Area/Activity: Soil Ecology, Restoration, Reclamation, Monitoring of Degraded Soils

**R. Jay Goos, Ph.D.**

Colorado State University, 1980

Research Area/Activity: Soil Fertility and Management/Fertilizer Management for Small Grains

**David G. Hopkins, Ph.D.**

North Dakota State University, 1997

Research Area/Activity: Interactions Among Landscape, Soil Morphology, Soil Properties and Environmental Aspects of Land Use

**Abbey Wick, Ph.D.**

University of Wyoming, 2007

Research Area/Activity: Soil Health in Agricultural and Range Lands; Mine Reclamation

## Adjunct Faculty

**Allan W. Cattanach, Ph.D.**

University of Minnesota, 1979

Research Area/Activity: Soil Fertility, Sugar Beet Management

**Gary H. Halvorson, Ph.D.**

Oregon State University, 1979

Director of Agriculture, Sitting Bull College, Fort Yates, SD

**Mark Liebig, Ph.D.**

University of Nebraska, 1998

USDA-ARS Northern Great Plains Research Laboratory, Mandan, ND

Research Area/Activity: Soil Quality, Soil Carbon Dynamics, Greenhouse Gas Flux, Semiarid Agroecosystems

**Stephen D. Merrill, Ph.D.**

University of California, Riverside, 1976

USDA-ARS Northern Great Plains Research Laboratory, Mandan, N.D.

Research Area/Activity: Soil Erosion Processes; Crop Root Growth and Soil/Crop Hydrology; Mined Land Reclamation

**Jill Motschenbacher, Ph.D.**

University of Arkansas, 2012

North Dakota State University

Research Area/Activity: Soil Physics, Sustainable Cropping Systems

**Peter L. O'Brien, Ph.D.**

North Dakota State University, 2017

Research Area/Activity: Reclamation, Cover Crops, Soils Management

**Laura F. Overstreet Gentry, Ph.D.**

North Carolina State University, 2005

Assistant Professor, University of Illinois Urbana-Champaign

Research Area/Activity: Soil Fertility, Grain Crops, Bioenergy Crops, Crop Management, Environmental Systems

**Jimmie L. Richardson Ph.D.**

Iowa State University, 1974

Research Area/Activity: Soil Salinization, Soil Development in Wetlands, Hydrologic Patterns, Sedimentation

**James A. Staricka, Ph.D.**

University of Minnesota, 1990

Williston Research Extension Center,

Research Area/Activity: Soil and Water Conservation and Nutrient Use Efficiency in Dryland and Irrigated Crop Production

**Donald L. Tanaka, Ph.D.**

University of Nebraska, 1980

USDA-ARS Northern Great Plains Research Laboratory, Mandan, ND

Research Area/Activity: Dryland Integrated Agricultural Systems, Soil and Crop Ecological Interactions