Dustin Ehret

2532 Agronomy Hall, 716 Farm House Ln • Phone: 515-817-4020 • Email: dlehret@yahoo.com

Research Profile: http://glsi.agron.iastate.edu/research-team/dustin-ehret/

EDUCATION

Iowa State University, ***Ames, Iowa*** *May 2021*
Major: Masters in Soil Science (Soil Morphology and Genesis) GPA 3.7/4.0
Caine-Bogle Family Graduate Fellowship Recipient Hr./Wk. 50

- Partnered with the Waverly, Iowa, NRCS field office to achieve funding research objectives
- Conducted digital soil mapping research for texture class on the Iowan Erosion Surface
- Built and maintained working partnerships with private landowners through direct outreach and product delivery
- Specialized in digital soil mapping, GIS, soil morphology, and cartography

Iowa State University, ***Ames, Iowa*** *May 2019*
Major: Bachelors in Agronomy, Options: Soil Science and Geographic Information Systems GPA 3.4/4.0
Hr./Wk. 30

- Cultivated knowledge of the interplay between crops, soil, and Earth's environment
- Developed Geographic Information Systems skills through GIS and Geostatistics curriculum
- Created a framework for understanding the fundamentals of soil formation including how nature and humans alter its placement and development
- Relevant Coursework:
  - ❖ Surficial Processes
  - ❖ Soils Physics
  - ❖ Geostatistics for Geoscientists
  - ❖ Remote Sensing
  - ❖ Digital Soil Mapping
  - ❖ GIS for the Geoscientist I
  - ❖ Watershed Hydrology

Des Moines Area Community College, ***Ankeny, Iowa*** *May 2015*
Associate Degree: Law Enforcement, Summa Cum Laude GPA 4.0/4.0
Hr./Wk. 25

- Honors: Dean's List and President's Award

WORK EXPERIENCE

Graduate Researcher, ***Ames, Iowa*** *May 2019 - Present*
Geospatial Laboratory for Soil Informatics Hr./Wk. 45

- Prepared a geomorphology-based schema for collecting soil samples for research purposes
- Used remote sensing and multi-scale analysis terrain derivatives to create predictor variables for modeling
- Conducted particle size analysis of 2,000 soil samples using state-of-the-art laser diffraction
- Combined new and legacy soil data to improve model performance and map accuracy
- Created novel covariates that approximate direction-based distance from streams using geostatistics
- Lead a team of three undergraduate researchers on field sampling campaigns
- Point-of-contact for field activities, scheduling, and labor management

Laboratory Manager, ***Ames, Iowa*** *May 2019 - Present*
Geospatial Laboratory for Soil Informatics Hr./Wk. 5

- Developed and documented Standards and Operating Procedures improving lab efficiencies
- Independently managed a team of 10 individuals, scheduling lab resources and equipment
- Facilitated 15 trainings and technical demonstrations on particle size analysis using laser diffraction
- Cultivated a positive working environment through open communication and feedback loop
- Successfully processed 4,000+ samples for internal and external projects

GIS Technician, *Ames, Iowa* *May 2018 - May 2019*
Daily Erosion Project and *Agricultural Conservation Planning Framework (ISU)* Hr./Wk. 20

- Harmonized field boundary vector datasets with the Cropland Data Layerset
- Utilized editing and geoprocessing tools to segregate field use based on crop type
- Joined raw data and existing data for efficient processing of information
- Implemented Spatial Analysist tools in ArcMap

Undergraduate Research Assistant, *Ames, Iowa* *December 2016 - May 2018*
Iowa State University Agronomy Department Hr./Wk. 12

- Isolated corn seeds exhibiting haploid and hybrid characteristics for the Double Haploid Facility
- Injected corn sprouts with colchicine to synchronize corn silk and pollination for inbred plants
- Assisted Iowa State Graduate Students with fieldwork for cross- and self-pollination studies

Soil Sampler, *Jewell, Iowa* *August 2015 - June 2016*
Midwest Independent Soil Sampling Hr./Wk. 50

- Demonstrated reliability and willingness to take on added responsibility
- Utilized proprietary software to upload geolocated field boundaries and create sample designs
- Travelled regularly for extended trips out-of-state to assist other workers
- Maintained soil sample integrity by implementing company standard operating procedures

COMMUNITY SERVICE AND LEADERSHIP

Research Mentor, *Ames, Iowa* *December 2019 - Present*
Iowa State University, First-Year Honors Mentor Program

- Guided two freshmen honors students in conducting a soil mapping project
- Provided students with educational recourses regarding digital soil mapping technologies
- Fostered undergraduate curiosity in research using hands-on learning tools
- Assisted in the development of their final project and poster
- Taught university freshman about basic soil and landscape development

Group Organizer and Outreach, *Ames, Iowa* *August 2015 - Present*
Ames Velo Cycling Club

- Support liaison for the annual Ames bicycle race (Ames Grand Prix)
- Volunteer for the free, children's bicycle "race" at the Ames Grand Prix
- Participated in community outreach to secure local business support for the Ames Grand Prix

Founding Member and Membership Coordinator, *Ames, Iowa* *November 2017 - May 2018*
Iowa State University Cycling Club

- Returned the Iowa State Cycling Club to good standing after it had fallen dormant
- Actively recruited members through university sponsored events
- Kept membership records and participated in the annual budget development processes
- Organized events for both causal and competitive bicycle riders

Fundraiser and Cross Country Cyclist, *Baltimore, Maryland* *November 2014 - August 2015*
Ulman Cancer Fund for Young Adults

- Personally raised over $5,000 for cancer advocacy, patient treatment programs, and scholarship funds
- Experienced the diverse landscape of the United States on a transcontinental cycling event
- Assisted a group of 29 individuals by collecting food donations and coordinating nightly lodging
- Participated in philanthropic and public relation events with hundreds of people from diverse backgrounds throughout the United States to alleviate the burdens of cancer treatment for patients, their families and communities

Scholarship Recipient, *Camp Dodge, Iowa* *June 2012*
American Legion's Iowa Boys State

SOFTWARE PROFICIENCIES

Research-Specific Software

- ESRI: ArcMap, ArcGIS Pro, ArcGIS Online
  - Visualize and process geographic data
  - Create maps at various geographic scales
  - Develop processes and models for map making
- Malvern Mastersizer 3000
  - Particle size analysis using laser diffraction
  - Evaluate soil particle size in 101 individual ranges
- Garmin Montana GPS and Basecamp
  - Organize sample points for soil collection
  - Precise photographic documentation of GPS locations
- GRASS GIS
  - Multi-analysis scale terrain derivative creation
- SAGA GIS
  - Hydrology-based terrain derivative creation

Task Management

- Basecamp3
- Slack
- Microsoft Office Suite

Web-Based Databases

- Web Soil Survey
- Iowa Geodata
- California Soil Recourse Lab
  - SoilWeb
  - Soil Series Extent Explorer
  - Soil Properties
- USGS EarthExplorer
- USGS Topographic Data Downloader

Programming

- R and RStudio
- Python

PUBLICATIONS AND PRESENTATIONS

A Digital Approach to Soil Texture Class Mapping on the Iowan Erosion Surface *May 2021*
Master's Thesis – Iowa State University

Presentation: Effects of Mixed Particle Size Analysis on Mapping Sand Content *November 2020*
Soil Science Society of America National Conference