

Judith K. Turk PhD – Curriculum Vitae

Conservation and Survey Division
School of Natural Resources
University of Nebraska-Lincoln
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EDUCATION

- Ph.D., Soil and Water Sciences, University of California, Riverside, CA, Mar. 2012
 - Dissertation: Vesicular Horizon Distribution, Properties, and Pedogenic Processes in Deserts of the Western United States
- M.S., Soil and Water Sciences, University of California, Riverside, CA, June 2007
 - Thesis: Soil Development in a Forested Debris Flow Chronosequence in Southern California
- B.S., Biology, University of Maryland, College Park, MD, May 2004, *cum laude*

ACADEMIC APPOINTMENTS

- Pedologist/Assistant Professor, Conservation and Survey Division, School of Natural Resources, University of Nebraska, Lincoln, Jul. 2017-Present.
- Assistant Professor of Environmental Science/Soil Science, School of Natural Sciences and Mathematics, Stockton University, Sept. 2012-Jun. 2017.
- Post Doctoral Fellow, Division of Plant and Soil Sciences, National Geospatial Development Center (NGDC), Davis College of Agriculture, Natural Resources and Design, West Virginia University, Morgantown, WV, Apr.-Jul. 2012.

PROFESSIONAL MEMBERSHIPS

- Soil Science Society of America (2005-present)

PUBLICATIONS

Peer Reviewed Journal Articles

(Co-authors in bold italics **student mentees**)

Published

- Anderson, A.D., C.L. Burras, **J. Turk**, R. Young, N. Jelinski, C. Moorberg, D. Presley, K. Osterloh, A. Dere, K. Clark. (2024). An updated method for identifying the formative factors in soil structure, Soil Science Society of America Journal, 88, 2362-2369, doi: 10.1002/saj2.20771. *Contributions:* Conceptualization, Investigation, Writing - review & editing.
- **Baker, T.J.**, M. Kaiser & **J.K. Turk**. (2023). Predicting Soil Organic Carbon from Loss-On-Ignition Across Four Regions of Nebraska, Communications in Soil Science and Plant Analysis, 54:16, 2301-2312, doi: 10.1080/00103624.2023.2217841. *Contributions:* Conceptualization, Methodology, Supervision, Writing – Reviewing & Editing

- **Turk, J. K.** (2023). Literature circles promote accountability and student engagement with assigned reading in a soil science class. *Natural Sciences Education*, 52, e20103. <https://doi.org/10.1002/nse2.20103>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
- Young, R.A., **Turk, J. K.**, Jelinski, N.A., Anderson, A.D., Clark, K.M., Dere, A., Moorberg, C.J., Osterloh, K., & Presley, D. (2023). Jumble judging: Cognitive and affective outcomes of intercollegiate collaboration at a soil judging competition. *Natural Sciences Education*, 52, e20104. <https://doi.org/10.1002/nse2.20104>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Writing – Original Draft Preparation
- **Turk, J.K.**, Young, R.A., Jelinski, N.A., Anderson, A.D., Dere, A., Moorberg, C.J., & Owen, R.K. (2022). Soils of the Central Nebraska Loess Hills and Central Loess Plains. *Great Plains Research*, 95-133. doi: 10.1353/gpr.2022.0010. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
- **Turk, J.K.**, & Graham, R.C. (2022). Microbial activity and temperature change affect growth of vesicular pores. *Geoderma*, 115957. <https://doi.org/10.1016/j.geoderma.2022.115957>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
- Joeckel, R.M., Korus, J.T., **Turk, J.K.**, Arps, C.C., Arps, N.V. Howards, L.M. (2022). Strange Stones of Skull Creek: Basalt Glacial Erratics and Omars in Eastern Nebraska. *Great Plains Research*, 1-20. <https://doi.org/10.1353/gpr.2022.0000>. *Contributions*: Writing – Reviewing & Editing
- **Airori, A. J., Baker, T. J., & Turk, J. K.** (2021). The impact of sampling methodology on soil bulk density measurement by the clod method. *Communications in Soil Science and Plant Analysis*, 1-10. <https://doi.org/10.1080/00103624.2021.1993887>. *Contributions*: Conceptualization, Methodology, Supervision, Writing – Reviewing & Editing.
- Fyfe, E.R., De Leeuw, J.R., Carvalho, P.F., Goldstone, R.L., Sherman, J., Admiraal, D., Alford, L.K., Bonner, A., Brassil, C.E., Brooks, C.A., Carbonetto, T., Chang, S.H., Cruz, L., Czymoniewicz-Klippel, M., Daniel, F., Driessen, M., Habashy, N., Hanson-Bradley, C.L., Hirt, E.R., Carbonell, V.H., Jackson, D.K., Jones, S., Keagy, J.L., Keith, B., Malmquist, S.J., Mcquarrie, B., Metzger, K.J., Min, M.K., Patil, S., Patrick, R.S., Pelaprat, E., Petrunich-Rutherford, M.L., Porter, M.R., Prescott, K., Reck, C., Renner, T., Robbins, E., Smith, A.R., Stuczynski, P., Thompson, J., Tsotakos, N., **Turk, J.K.**, Unruh, K., Webb, J.D., Whitehead, S.N., Wisniewski, E.C., Zhang, K.A., Motz, B.A.. (2021). ManyClasses 1: Assessing the Generalizable Effect of Immediate Feedback Versus Delayed Feedback Across Many College Classes. *Advances in Methods and Practices in Psychological Science*, 4(3), 25152459211027575. <https://doi.org/10.1177/25152459211027575>. *Contributions*: Data Curation, Investigation.
- Owen, R. K., Anderson, A., Bhandari, A., Clark, K., Davis, M., Dere, A., Jelinski, N., Moorberg, C., Osterloh, K., Presley, D., **Turk, J.**, & Young, R. (2021). Evaluating student attitudes and learning at remote collegiate soil judging events. *Natural Sciences Education*, 50(2), e20065. <https://doi.org/10.1002/nse2.20065>. *Contributions*: Conceptualization, Methodology, Writing – Original Draft Preparation
- Rabenhorst, M. C., Drohan, P. J., Galbraith, J. M., Moorberg, C., Spokas, L., Stolt, M. H., Thompson, J. A., **Turk, J.**, Vasilas, B. L., & Vaughan, K. L. (2021). Manganese-coated IRIS to document reducing soil conditions. *Soil Science Society of America Journal*, 85(6), 2201-2209. <https://doi.org/10.1002/saj2.20301> *Contributions*: Writing – Reviewing & Editing
- **Turk, J. K.**, & Young, R. A. (2021). A novel approach for teaching soil texture estimation: replacing standard protocols with directed self-calibration. *Journal of Geoscience Education*, 1-

16. <https://doi.org/10.1080/10899995.2021.1891402>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
- **Turk, J. K., & Graham, R. C. (2020).** Disturbance impacts on porosity and hydraulic properties of vesicular horizons. *Soil Science Society of America Journal*, 84(2), 543-555. <https://doi.org/10.1002/saj2.20055>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
 - **Turk, J. K., & Young, R. A. (2020).** Field conditions and the accuracy of visually determined Munsell soil color. *Soil Science Society of America Journal*, 84(1), 163-169. <https://doi.org/10.1002/saj2.20023>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
 - **Turk, J. K. (2016).** The development and evaluation of lecture tutorials for introductory soil science. *Natural Sciences Education*, 45(1), nse2016.0002. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
 - **Turk, J. K., & Graham, R. C. (2014).** Analysis of vesicular porosity in soils using high resolution X-ray computed tomography. *Soil Science Society of America Journal*, 78(3), 868-880. <https://doi.org/10.2136/sssaj2013.12.0541>. *Contributions*: Conceptualization, Data Curation, Funding Acquisition, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
 - **Turk, J. K., & Graham, R. C. (2011).** Distribution and properties of vesicular horizons in the western United States. *Soil Science Society of America Journal*, 75(4), 1449-1461. <https://doi.org/10.2136/sssaj2010.0445>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
 - **Turk, J. K., & Graham, R. C. (2009).** Soil carbon and nitrogen accumulation in a forested debris flow chronosequence, California. *Soil Science Society of America Journal*, 73(5), 1504-1509. <https://doi.org/10.2136/sssaj2008.0106>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation
 - **Turk, J. K., Goforth, B. R., Graham, R. C., & Kendrick, K. J. (2008).** Soil morphology of a debris flow chronosequence in a coniferous forest, southern California, USA. *Geoderma*, 146(1-2), 157-165. <https://doi.org/10.1016/j.geoderma.2008.05.012>. *Contributions*: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Writing – Original Draft Preparation

Book Chapters

Published

- **Turk, J., K., Chadwick, O., A., & Graham, R., C. (2011).** Pedogenic Processes. In *Handbook of Soil Sciences Properties and Processes*. CRC Press. <https://doi.org/10.1201/b11267-53>. *Contributions*: Writing – Original Draft Preparation

Earth Science Notes

Published

- **Roberson, B., C. Córdova, J. Turk. (2024).** Soil Color Chart to Estimate Organic Matter Concentrations for Eastern Nebraska. University of Nebraska-Lincoln ENS 12.2.

GRANTS

External Grants

Awarded – Current/Active

- NSF Geomorphology and Land-Use Dynamics. CAREER: Human-induced Soil Change on the U.S. Great Plains, 2024-2029 (Total: \$854,327, Turk: \$854,327). PI: J. Turk
- USDA Conservation Collaboration Cooperative Agreement. Development of a Color Chart for Estimating Organic Carbon in Nebraska Soils, 2023-2025 (Total: \$107,252, Turk: \$107,252). CoPIs: J. Turk and S.C. Carolina Córdova

Awarded – Previous/Completed

- USDA Cooperative Agreement. The relationship between color and organic carbon in Nebraska soils, 2020-2022 (Total: \$88,557, Turk: \$88,557). PI: J. Turk
- USDA Cooperative Agreement. Analysis of clay illuviation processes in depressional soils in the Todd Valley, eastern Nebraska, 2018-2020 (Total: \$133,333, Turk: Total: \$133,333). PI: J. Turk
- USDA Cooperative Agreement Subcontract through Purdue University. Completion of the Isee Databases for the North Central Region, 2017-2018 (Total: \$100,000, Turk: \$8,921). PI: D. Schulze

Internal Grants

Awarded – Previous/Completed

- IANR ARD Undergraduate Student Research Program (with M. Rutgers): How does aggregation state affect the accuracy of color-based predictions of soil organic carbon?, 2023 (\$2500)
- CTT Small Grants (with R. Young): Pedagogic Intervention. Jumbled Soil Judging, 2021 (\$1000).
- SNR Professional Development Funds. National Center for Faculty Development and Diversity Faculty Success Program, 2020 (\$2375).
- CTT Small Grants (with R. Young): Pedagogic Intervention. Course-based Undergraduate Research Experience on Color-Corrective Lenses and the Perception of Soil Color, 2020 (\$867).
- IANR Travel Funds. Soils across latitude: 2018-2019 International Soils Meeting, 2019 (\$500)

PRESENTATIONS

Invited Research Presentations

- **Turk, J.K.** Nebraska Updates. NCERA-3 Annual Meeting. Fargo, ND. 1-2 Oct. 2021.
- **Turk, J.K.** UNL Pedology Research. Nebraska Cooperative Soil Survey Meeting. Lincoln, NE. 2 Dec. 2020.
- **Turk, J.K.** Conservation and Survey Division Pedology Research. Nebraska Cooperative Soil Survey Meeting. Lincoln, NE. 20 Sept. 2019.
- **Turk, J.K.** Analysis of particles and voids in soil. Environmental and Water Resources Engineering Graduate Seminar. University of Nebraska, Lincoln. 16 Feb. 2018.
- **Turk, J.K.** Pedology research at UNL. Nebraska Society of Professional Soil Scientists Research Symposium. University of Nebraska, Lincoln. 2 Feb. 2018.
- **Turk, J.K.** The pedagogy of pedology. Geography and Atmospheric Science/Geology Joint Colloquium. University of Kansas, Lawrence, KS. 19 Jan. 2018.

Volunteered Research Presentations

(Co-authors in bold italics **student mentees**)

- **Turk, J.** The development of vesicular pores in field and laboratory settings. ASA-CSSA-SSSA International Annual Meetings. San Antonio, TX. 12 Nov. 2024.
- **Turk, J., T. Baker, W. Hernandez.** Soil erosion and carbon stock change over 63 years in eastern Nebraska croplands. ASA-CSSA-SSSA International Annual Meetings. 13 Nov. 2024.
- **Roberson, B., C. Córdova, J. Turk.** Color chart for estimating organic carbon in Nebraska soils. Nebraska Cooperative Soil Survey Meeting. Online. 2 Apr. 2024.
- **Rutgers, M. and J.K. Turk.** The effect of soil aggregation state on color-based predictions of soil organic carbon. ASA-SSSA-CSSA International Annual Meetings. St. Louis, MO. 31 Oct. 2023.
- **Hernandez, W., J.K. Turk, and T. J. Baker.** Changes in particle size over 60 years of crop production in Nebraska. ASA-SSSA-CSSA International Annual Meetings. St. Louis, MO. 30 Oct. 2023.
- **Rutgers, M. and J.K. Turk.** Particle size distribution of deflation basin soils in Eastern Nebraska. ASA-SSSA-CSSA International Annual Meetings. St. Louis, MO. 30 Oct. 2023.
- **Turk, J.K., and T.J. Baker.** Human-induced soil change in Nebraska. ASA-SSSA-CSSA International Annual Meetings. St. Louis, MO. 30 Oct. 2023.
- **Turk, J.K., and Baker, T.J.** The Nature of Soil Change Across Nebraska. Nebraska Society of Professional Soil Scientists – Society for Range Management Joint Symposium. 14 Apr. 2023.
- **Vasquez, C. and J.K. Turk.** Decomposition Rates of Depressional Wetlands in Eastern Nebraska. Nebraska Society of Professional Soil Scientists – Society for Range Management Joint Symposium. 14 Apr. 2023.
- **Glasshoff, S., K. Shahbazi, M. Marzi, J. Turk, R. Ferguson, and D. Harms.** Using Mid-infrared Spectrometry to Assess Relative Accuracy of Three Soil Organic Carbon Measurement Methods for Calcareous Soils. Nebraska Society of Professional Soil Scientists – Society for Range Management Joint Symposium. 14 Apr. 2023.
- **Rutgers, M. and J.K. Turk.** Particle Size Distribution of Deflation Basin Soils of the Todd Valley, Eastern Nebraska. Nebraska Society of Professional Soil Scientists – Society for Range Management Joint Symposium. 14 Apr. 2023.
- **Airori, A.J., and J.K. Turk.** Evaluating digital color sensors for soil organic carbon measurement in Nebraska. ASA-SSSA-CSSA International Annual Meetings. Baltimore, MD. 7 Nov. 2022.
- **Turk, J.K., A.G. Kemper, and R. Clarkson.** Deflation basin soils of the Todd Valley, Eastern Nebraska: Analysis of soil morphology, micromorphology, and organic carbon. ASA-SSSA-CSSA International Annual Meetings. Baltimore, MD. 7 Nov. 2022.
- **Turk, J.K., and A.J. Airori.** Student estimates of soil organic carbon in a pedology class. ASA-SSSA-CSSA International Annual Meetings. Baltimore, MD. 7 Nov. 2022.
- **Baker, T., J.K. Turk, and M. Kaiser.** Predicting soil organic carbon from loss-on-ignition across four regions of Nebraska. ASA-SSSA-CSSA International Annual Meetings. Baltimore, MD. 9 Nov. 2022.
- **Hanson, P., C. Reinier, R.M. Joeckel, and J.K. Turk.** Stratigraphy and geochronology of the Todd Valley, an abandoned segment of the Platte River Valley, Eastern Nebraska. Geological Society of America Annual Meetings. Denver, Co. 12 Oct. 2022.
- **Turk, J.K.** Using the literature circle discussion format to teach conceptual models of soil formation. Biennial Conference on Undergraduate Education in the Natural Resources. Online. 24 Mar. 2022.

- Young, R.A., and **J.K. Turk**. Jumbled judging: Assessing the impact of a new inclusive learning activity at a regional collegiate soil judging competition. Biennial Conference on Undergraduate Education in the Natural Resources. Online. 23-24 Mar. 2022.
- **Turk, J.K., A. Airori**, and **T. Baker**. Methods for estimating SOC in Nebraska soils. Nebraska Cooperative Soil Survey Meeting. Online. 7 Dec. 2021.
- **Airori, A., J.K. Turk**, and **T. Baker**. The impact of sampling methodology on soil bulk density measurement by the clod method. Nebraska Summer Research Virtual Symposium, Online. 5 Aug. 2020.
- **Turk, J.K.**, R.A. Young, and N. Musgrave. How to calibrate your fingers: A guide to improving field estimates of soil texture. ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX. 10-13 Nov. 2019.
- **Petersen, B., N. Strand, J.K. Turk**, and R.A. Young. The effect of lighting conditions on visual determination of soil color. Nebraska Society of Professional Soil Scientists Research Symposium. University of Nebraska, Lincoln. 8 Mar. 2019.
- **Turk, J.K.**, R. Young, S. Salley, and A. Dere. An alternative method for teaching field determination of soil texture. Soil Science Society of America International Soils Meeting, San Diego, CA. 6-9 Jan. 2019.
- **Kemper, A. G.** and **J.K. Turk**. Observation of common field soil texture methods by video analysis. Soil Science Society of America International Soils Meeting, San Diego, CA. 6-9 Jan. 2019.
- **Turk, J.K.** and R. Young. Improving of student accuracy at determining soil texture by feel. Earth Educators Rendezvous. University of Kansas, Lawrence, KS. 16-20 Jul. 2018.
- Miller, B., D. Schulze, J. Crum, D. Hopkins, N. Jelinski, D. Malo, P. Quackenbush, M. Ransom, **J. Turk**, and The Isee Network. Soil explorer – Impressive interpretations from the USA soil survey maps. European Geosciences Union General Assembly 2018. Vienna, Austria 8-13 Apr. 2018.
- **Rosas, Y.** and **J.K. Turk**. Rainfall and formation of vesicular pores. Weatherfest 2018. Lincoln, NE 7 Apr. 2018.
- **Davis, A.** and **J.K. Turk**. Porosity formation in disturbed V horizons: A comparison across three desert ecoregions. Nebraska Society of Professional Soil Scientists Research Symposium. University of Nebraska, Lincoln. 2 Feb. 2018.
- **Musgrave, N.** and **J.K. Turk**. A visual guide for estimating sand percentage in the field. Nebraska Society of Professional Soil Scientists Research Symposium. University of Nebraska, Lincoln. 2 Feb. 2018.

MENTORING

Graduate Students (Major Advisor)

- Roberson, Bellodgia, M.S. in Agronomy, Expected 2026. *Project*: Evaluation of the Impact of NRCS Conservation Programs. Co-advised with S.C. Córdoba.
- Airori, Aldi J., M.S. in Natural Resource Sciences, 2022. *Thesis*: Quantifying the relationship between soil organic carbon and color in Nebraska.
- Baker, Trinity J., Ph.D. in Natural Resource Sciences, 2022. *Dissertation*: Analysis of Soil Change Across Nebraska.
- Kemper, Aubrey G., M.S. in Natural Resource Sciences, 2021. *Thesis*: Soil Morphology and Carbon Stocks of Deflation Basin Wetlands in Eastern Nebraska, USA

Graduate Students (Examining Committee)

- Olivo, Agustin J., M.S. in Mechanized Systems Management with Natural Resource Sciences minor, 2020. *Thesis*: On-farm Research and Student Engagement to Assess and Promote the Use of Organic Soil Amendment to Improve Agricultural Soil Health and Resilience of Crop Production Systems in Nebraska.

Undergraduate Students

- Nalty, Claire, Independent Study/Student Worker, 2024. *Project*: How does aggregation state affect the accuracy of color-based predictions of soil organic carbon? *Responsibilities*: C/N analysis, soil color analysis using digital sensors
- Brockman, Charlotte, Soil Evaluation Teaching Assistant, 2022-2023. *Responsibilities*: Helping students during field labs and in-class group work, coordinating make-up labs with students, driving on field trips, setting up labs and organizing soil samples.
- Estrada, Guadalupe, Student Worker, 2024. *Responsibilities*: Particle size analysis by pipet, organic matter analysis by loss-on-ignition, soil color analysis using digital sensors and Munsell soil color charts.
- Hernandez, Will, Academic Year UCARE/Undergraduate Thesis/Student Worker, 2023-2024. *Project*: Change in Particle Size Distribution in Following 60 Year of Crop Production. *Responsibilities*: Particle size analysis by pipet
- Napolitano, Alex, Academic Year UCARE/Student Worker, 2023-2024. *Project*: Factors Regulating Carbon Stocks in a Depressional Wetland System, *Responsibilities*: Particle size analysis by pipet, organic matter analysis by loss-on-ignition, soil color analysis using digital sensors and Munsell soil color charts.
- Rutgers, Mason, Undergraduate Thesis/UCARE/IANR ARD Undergraduate Student Research, *Projects*: Particle Size Distribution of Soils from a Depressional Wetland Transect (2022-2023), How does aggregation state affect the accuracy of color-based predictions of soil organic carbon? (2023-2024)
- Cañedo, Julianna, Soil & Society Teaching Assistant (2022-2023) *Responsibilities*: Attending and providing feedback on literature circles, moderating discussion boards, grading, Great Plains Field Pedology Teaching Assistant (2024) *Responsibilities*: Helping students during field labs and in-class group work, moderating literature circle discussions, driving on field trips, grading
- Vasquez, Cindy, Academic Year UCARE, 2022-2023. *Project*: Decomposition rates in depressional wetlands
- Glasshoff, Sean, Student Research Credit, 2023. *Project*: Validation of Soil Organic and Inorganic Carbon Analysis by Mid-Infrared Spectroscopy.
- Swain, Megan, Undergraduate Thesis, 2023. *Thesis*: Place-Based Pedagogies in Post-Secondary Science Education: A Scoping Literature Review.
- Gillespie, Claire, Soil & Society Teaching Assistant, 2022. *Responsibilities*: Attending and providing feedback on literature circles, moderating discussion boards, grading.
- Schumacher, Mason, Student Worker, 2022-2023. *Responsibilities*: Particle size analysis by pipet.
- Haag, Berkley, Soil & Society Teaching Assistant, 2021-2022. *Responsibilities*: Attending and providing feedback on literature circles, moderating discussion boards, grading.
- Clarkson, Rachel, Summer UCARE, 2021. *Project*: Variation in Decomposition Rates Across a Playa Wetland in Eastern Nebraska
- Airori, Aldi, Summer UCARE, 2020. *Project*: The Impact of Sampling Methodology on Soil Bulk Density Measurement by the Clod Method

- Darling, Michael, Student Worker, 2019. *Responsibilities*: Description and sampling of soils at ENREEC.
- Davis, Alexa, Student Worker, 2018. *Responsibilities*: Analysis of soil computed tomography scans.
- Musgrave, Nicole, Undergraduate Thesis/Student Worker, 2017-2018. *Thesis*: The Development and Evaluation of a Visual Guide for Estimating Sand Percentage in the Field. *Other Responsibilities*: Development of Dominant Soil Parent Material Map for Nebraska, Analysis of soil computed tomography scans

High School Students

- Rosas, Yvette, Environmentors, 2017-2018. *Project*: Analysis of rainfall records in relation to vesicular pore formation.

Awards received by mentees

- Will Hernandez: Second place in Students of Agronomy, Soils, and Environmental Science Pedology Contest at 2023 ASA-CSSA-SSSA Conference.
- Mason Rutgers: Second place in Students of Agronomy, Soils, and Environmental Science Poster Contest at 2023 ASA-CSSA-SSSA Conference.
- Aldi Airori: SNR 2022 Meritorious Graduate Student Award
- Trinity Baker: 2019 Othmer Fellowship

TEACHING

Teaching Awards

- SNR Faculty Inspiration Award (2024)
- CASNR Holling Family Early Achievement Faculty Award (2023)

Courses taught

- PLAS/NRES/SOIL279 Soil Evaluation. 1-2 credit course taught in Fall 2017-2024 with co-Instructor Becky Young. Lecture and field format (including 6-day field trip to Regional Soil Judging Contest). Enrollment 14-24. Responsibility: 100%.
- PLAS/NRES/SOIL379 Advanced Soil Evaluation. 1 credit course taught every semester 2022-2024, with co-Instructor Becky Young. Lecture and field format (including 6-day field trip to Regional/National Soil Judging Contest). Enrollment 5-10. Responsibility: 100%.
- AGRO/NRES/SOIL477, NRES877, GEOG467/867 Great Plains Field Pedology. 4 credit course taught in Spring 2019-2024. Lecture/lab/field format. Enrollment: 8-19.
- SOIL 101 Soil & Society. 3 credit course taught in Fall 2019-2023. Online format, meets ACE5 requirement. Enrollment: 33-46.

UNL Soil Judging Team

Co-coach for team 2017-present (with Becky Young)

Awards Received at National Collegiate Soil Judging Contests

- Ames, IA (2024): 2nd place overall, 2nd place group judging, 1st place alternates team, Individual: 3rd place (M. Rutgers), 1st place alternate (A. Cox), 3rd place alternate (R. Clarkson)
- Woodward, OK (2023): 4th place overall, Individual awards: 6th place (M. Rutgers) and 9th place (J. Krebs)
- Marryville, OH (2022): Individual awards: 4th place (K. Griffis, now W. Hernandez) – qualified for national team and competed in international contest in Sterling, Scotland
- San Luis Obispo, CA (2019): 3rd place overall, 1st place group, Individual awards: 10th place (S. Teten)

Awards Received at Region V Soil Judging Contests

- Great Bend, KS (2024): Individual awards: 5th place (S. Honaker), 7th place (P.J. Smeal)
- Sturgis, SD (2023): 1st place overall, 2nd place group, Individual awards: 1st place (J. Krebs), 2nd place (M. Schumacher), 8th place (A. Newcome), 10th place (A. Cox)
- Milford, IA (2022): 1st place overall, Individual awards: 1st place (K. Griffis, now W. Hernandez), 4th place (M. Rutgers), 5th place (M. Schumacher), 6th place (R. Clarkson), 9th place (C. Brockman), and 10th place (J. Krebs)
- Crookston, MN (2021): 3rd place overall, 2nd place group, Individual awards: 1st place (K. Griffis, now W. Hernandez)
- Grand Island, NE (2019): 1st place overall, 1st place group, Individual awards: 1st place (B. Petersen) and 10th place (N. Strand)
- Manhattan, KS (2018): 1st place overall, 3rd place group, Individual awards: 1st place (S. Teten), 3rd place (K. Grint), and 5th place (B. Petersen)
- Redfield, SD (2017): 1st place overall, 1st place group, Individual awards: 5th place (L. LeCuyer) and 7th place (S. Teten)

Contributions to courses taught by others

- NRES 115. Intro to Environmental Sci. 4 credit course. Contributions: 1-2 lectures on soil science in 202-2024. Enrollment: 14-20.
- NRES 101. Natural Resources Orientation. 1 credit course required for Fisheries and Wildlife Major. Contribution: led soils field activity in 2018 and 2023-2024. Enrollment: 60.
- NRES 299. Soil Health & Environment. 3 credit course. Contributions: One lecture on soil color related to soil organic matter in 2023. Enrollment: 17.
- NRES 468. Wetlands. 4 credit course taught. Contributions: Two lectures on wetland soils in 2021 and 2022. Enrollment: 16-20.
- AGRO 496/896. Nebraska Range Short Course. 2 credit course (also offered for non-credit or credit through Chadron State College). Contributions: Gave 2 lectures and co-led 2 field trips in 208. Enrollment: 22.

Teaching Development Programs

- Tribal Engagement Training. Participated in a 2-day training covering Indigenous assessment worldviews, the history of tribal relations with the United States, and creating relationships with tribal communities in Nebraska (2024).

- Faculty-led Inquiry into Reflective and Scholarly Teaching (University of Nebraska, Lincoln). Developed and evaluated a new lab for Great Plains Field Pedology on field estimation of soil organic carbon (2021-2022).
- Biennial Conference on Undergraduate Education in the Natural Resources (Online). Attended talks on a variety of pedagogical topics (2022).
- Peer Review of Teaching Project (University of Nebraska, Lincoln). Developed research project on the use of literature circles for teaching pedology (2020-2021).
- Peer Review of Teaching Project (University of Nebraska, Lincoln). Developed research project on methods for teaching texture by feel (2019-2020)
- Summer Institute for Online Teaching (University of Nebraska, Lincoln). Received training in best practices for online teaching (2019)
- Peer Review of Teaching Project (University of Nebraska, Lincoln). Developed course portfolio of Great Plains Field Pedology (2018-2019)
- Earth Educators Rendezvous (Lawrence, KS). Participated in workshops on a variety of pedagogical topics including Teaching Online, “Indigenuity” (Indigenous Ingenuity), and Universal Design.

NEWS MEDIA

- Crop Connection: First Nebraska soil judging team member joins Team USA to compete internationally (by Charlotte Brockman). Nebraska Farmer. 4 Aug. 2022.
- UNL student part of winning team at international soil judging contest (by Chris Dunker). Lincoln Journal Star. 14 Aug. 2022.
- UNL student headed to Scotland to compete in soil judging contest (by Chris Dunker). Lincoln Journal Star. 25 Ju. 2022.
- Soil pores hold the key to stability for desert soils (by Kaine Korzekwa). Soil Science Society of America. 4 May 2020. Story picked up on 23 additional media outlets.
- Soil Judging Competition. Pure Nebraska. 7 Oct. 2019.

OUTREACH AND SERVICE

Community outreach

- Created and led soil color activity for earth sciences classes, 50 participants, Northeast High School, Lincoln, NE (2024)
- Led table discussion at UNL-LPS STEM connector, 200 participants, UNL (2024)
- CSD Booth Volunteer, East Campus Discovery Days & Farmers Market, 100 participants, UNL (2024)
- Presentation for Cass County Junior Master Gardeners, 10 participants, Cass County Extension Office, Weeping Water, NE (2024)
- Presentation for Calvert Elementary Geology Club, 15 participants, Calvert Elementary School, Lincoln, NE (2024)
- SNR Booth Volunteer, Nebraska Deer and Game Expo, 15 participants, Sandhills Global Event Center, Lincoln, NE (2024)
- Asian Community and Cultural Center. Co-instructor for a weekly ELL class, 5 participants, Online (2022-present)

- Guest Speaker for Lincoln Garden Club, 25 participants, Robin Mickle Middle School, Lincoln, NE (2023)
- Wrote for *Trail Tails Magazine*, distributed to all 4th graders in Nebraska (2023)
- Lincoln Community Learning Centers middle school summer program: Developed and led three activities on soil color, 15 participants, Lincoln Sport Foundation, Lincoln, NE (2023)
- This is Northeast: Multicultural Night. Led Soil Painting Activity, 20 participants, Northeast High School, Lincoln, NE (2022-2023)
- CSD Booth Volunteer, East Campus Discovery Days & Farmers Market, 100 participants, UNL (2024)
- National Envirothon contest: Wrote and graded soils exam, Nebraska Association of Resource Districts, Lincoln, NE (2019-2021)
- Author of group portion of exam for Nebraska FFA statewide competition, UNL (2019).
- Co-host for Sunday with a Scientist at the Nebraska State Museum: Soil Investigations, 80 participants, UNL (2019).
- Faculty mentor for high school student in Environmentors program, UNL (2017-2018)

Professional Trainings and Field Days

- Presentation at Soil Health and Cover Crop Field Day, Mead, NE, with C. Córdova, 50 participants (2024)
- Preparation of soil descriptions for Nebraska Grazing Conference field tour, with R. Young, 58 participants (2024)
- Field day with World to Rebuild Rural Ukraine: Educational Tour of the USA, Martell, NE, with E. Gray, 15 participants (2024)
- Basic Soils training at Nebraska Water Industries Convention, Kearney, NE, 84 participants (2024)
- Soils Training and Field Workshops for Nebraska Onsite Waste Water Association, Lincoln, NE, 20 participants (2018)
- Soils Training and Field Workshops for Nebraska Onsite Waste Water Association, North Platte, NE, 30 participants (2018)

Service to professional organizations

- Expanding Horizons Oral: Pedology, Soil Mineralogy, and Soil Biology Research Inspired By the Mentorship and Friendship of Bob Graham (co-organized with D. Hirmas, J.B. Richardson, A.L. Ulery, D. Soukup, and N. Pietrasiak). ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX (2024)
- NE1438 Multistate Research Committee on Carbon Dynamics in Depressional Wetland Systems (2019-present)
- NCERA-3 Multistate Coordinating Committee on Soil Landscape Assessment, Function, and Interpretation (2018-present)
- Grant review for Duetsche Forschungsgemeinschaft (2024)
- Peer reviewer for various journals, including *Journal of Geosciences Education*, *Natural Sciences Education*, *Environmental Monitoring and Assessment*, and *Geoderma Regional* (2017-present)
- USDA-NRCS Soil and Plant Science Division (SPSD) Research Advisory Committee (2021-2023)
- Soils and Technology Symposium (co-organized with Rebecca Young). 2019 Nebraska Society of Professional Soil Scientists Meeting , Lincoln, NE (2019)

- Co-hosted Nebraska Cooperative Soil Survey Conference with Nebraska State Soil Scientist (2019)
- Chair, Soil Science Society of America Soil Mineralogy Division (2017)
- Mineral Weathering across Scales Symposium (co-organized with Rebecca Lybrand). 2017 ASA-CSSA-SSSA International Annual Meeting, Tampa, FL (2017)
- Soil Science Society of America Higher Education Materials Committee (2016-2017)

School and University-wide service

- SNR Faculty Advisory Committee, at-large member (2023-present), chair (2024-present)
- Associate Leader for the Faculty-led Inquiry into Reflective and Scholarly Teaching (2023-present)
- CASNR Faculty Advisory Committee (2022-2024)
- Advisor to Soil Judging Team Registered Student Organization (2017-present)
- Partnership exploration and visit with Omaha Northwest High School (2023)
- Introduction to SNR for Omaha North Environmental Science Class visit (2023)
- Associate Leader for Faculty-led Inquiry into Reflective and Scholarly Teaching (FIRST) (2022-present)
- Co-chair of Soil Health Scientist Search Committee (2021-2022)
- School of Natural Resources Seminar Committee (2019-2023)
- School of Natural Resources Community Engagement Committee (2017-2020)
- Second-year faculty panelist at New Faculty Development Program (2018)