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School of Natural Resources
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EDUCATION:

PhD **Doctor of Philosophy – Crop, Soil and Environmental Sciences, 2012** — **University of Arkansas**, *Fayetteville, Arkansas*
Major in Soil Physics
Focus on Sustainable Agricultural Soils and Biogeochemical Cycling in Rice-Based Crop Rotations with Corn, Soybean, and Wheat
Specialization in Applied Field Treatments and Global Food Systems

MEd ***Master of Education*** **– Higher Education Administration, 2007** — **Middle Tennessee State University**, *Murfreesboro, Tennessee*
Major in Administration and Supervision of Higher Education
Minor in Agriculture Education

BS ***Bachelor of Science*** **– Agribusiness, 2006** — **Middle Tennessee State University**, *Murfreesboro, Tennessee*
Major in Agriculture Economics
Minor in Environmental Science

ADDITIONAL ACADEMIC QUALIFICATIONS:

University Administration Fellow – Office of Teaching and Learning, 2016 — **North Dakota State University**, *Fargo, North Dakota*
Educational Grant Development and University Program Administration
STEM Faculty Development in the Scholarship of Teaching and Learning

Postdoctoral Researcher – Agricultural and Biosystems Engineering, 2013 — **Iowa State University**, *Ames, Iowa*
Research and Extension Education in Soil Health and Water Quality
Emphasis in Watershed Hydrology and Vegetative Filter Systems

Postdoctoral Researcher – Soil Physics, 2012-2013 — **University of Arkansas**, *Fayetteville, Arkansas*
Manuscript and grant writing in Soil Physics and Agricultural Systems

University Coursework – Animal Science, 2001-2004 — **University of Tennessee**, *Knoxville, Tennessee*
Major in Pre-Veterinary Medicine
Minors in Agriculture and Business

VOCATIONAL QUALIFICATIONS:

Lucent Technologies and AT&T Phone Systems Engineering, 1998 — **United States Navy**, Naval Training Center, *San Diego, California*
Mitel Phone Systems – Class C School Diploma
Dimension 2000 Phone Systems – Class C School Diploma

Shipboard Fire Fighting, 1998 — **United States Navy**, USS Sacramento (AOE-1), *Bremerton, Washington*
Shipboard fire prevention program for fire response aboard a ship.
Course and Annual Certification

Interior Communications Electrical Engineering, 1996-1997 — **United States Navy**, Naval Training Center, *Great Lakes, Illinois*
Mk-19 Gyrocompass – Class C School Diploma
Interior Communications Electrician – Class A School Diploma
Engineering and Electrical Core – Engineering and Electrical Core Diplomas
First Aid, CPR, and Industrial Safety Certifications

Military Basic Training, 1996 — **United States Navy**, Naval Training Center, *Great Lakes, Illinois*
Military Science, Combat Training, Naval Warfare Tactics, Physical Fitness, Mental Discipline, and Military Community Relations

PROFESSIONAL EXPERIENCE:

ACADEMIC AND ADMINISTRATION APPOINTMENTS:

University of Nebraska-Lincoln // 2022-Present // L*incoln, Nebraska*

Associate Professor of Practice in Soil Conservation **2022-Present**

[Faculty Appointment: 100% Teaching] – Positioned within the School of Natural Resources (SNR); Feb. 2024-present), previously in the College of Agricultural Sciences and Natural Resources (CASNR; Aug. 2022-Feb. 2024), and in the Institute of Agriculture and Natural Resources (IANR). Performs teaching and service duties, which include:

- Leads the development and teaching of core graduate course offerings for the Master of Applied Sciences' (MAS) Conservation Agriculture specialization
- Develops innovative online, asynchronous, graduate-level courses in conservation agriculture. Courses developed to-date include: [AGRI/NRES 930: Conservation Agriculture Systems], [AGRI/NRES 950: International Applications of Conservation Agriculture], and [AGRI 898/NRES 896 (Sec 703) (in-review for AGRI/NRES 945}: Resilience Design in Agriculture]
- Collaborates with the MAS Graduate Committee, stakeholders, and CASNR academic units to build a high-impact, nationally and internationally recognized teaching program in conservation agriculture
- Teaches and guides/mentors graduate students, at the masters (MAS, MS) and doctoral levels (PhD, DPH), to understand how their specialized scientific knowledge can influence societal implications, as well as how historical and social dynamics impact agriculture system resilience
- Scholarship efforts focus on teaching, learning, and assessment strategies that create personalized, highly impactful, flexible, and meaningful learning experiences. Experiences are aimed to address career and professional development goals, skilled critical thinking skills, agriculture system familiarity, international agriculture system knowledge, and creating implementable improvement plans for agricultural system improvement. Learning tools and strategies implemented are learner- and assessment-focused
- Advises current and prospective MAS graduate students during the development of their academic programs, provides oversight to MAS degree projects, and serves on supervisory committees
- Participates in committee assignments, reporting responsibilities, and other special ad hoc assignments as requested at the administrative unit, college/division, institute, and/or university level

North Dakota State University // 2014-2022// *Fargo, North Dakota*

Assistant Professor of Practice – Soil Science **2019-2022**

[Faculty Appointment: 20% Teaching] – Positioned within the School of Natural Resource Sciences (SNRS) and under the College of Agriculture, Food Systems, and Natural Resources (CAFSNR). Performed teaching and service duties, which include:

- Instructor of record for teaching the large, gateway-level, *Introduction to Soil Science* (SOIL 210) course during both Fall & Spring semesters (80-110 students per semester).
- Restructured and routinely transitions the *Introduction to Soil Science* course for successful and continuous delivery in the HyFlex format, in response to the Covid pandemic in 2020.
  - Efforts included expanding online class engagement options, refining instructional delivery platforms, and developing more accessible, flexible, and personable course material.
  - Curriculum changes created more diverse student populations in the class, in relation to participating academic majors and the social demographics of students.

- Focused efforts were implemented to improve student learning and increase the diversity of students in Agriculture and Natural Resource Science disciplines.
- Championed educational improvement initiatives, faculty development, graduate student teaching effectiveness, and diversity and inclusion efforts within SNRS and CAFSNR.
- Co-organized informal faculty mentoring for first-generation students in the College.
- Served as the elected faculty representative for CAFSNR on the University Assessment Committee (2020-2022).

Interim and Associate Director of the Office of Teaching and Learning **2017-2022**

Intermediate Assignment: **Interim Director of the Office of Teaching and Learning, 1.5 years**

[Additional responsibilities of Interim Director (6.1.2019-12.31.2020) served during upper-administration realignments across North Dakota State University.]

[Administrative Appointment: 80% Service] – Positioned under the Office of the Provost. Performed University- and office-level administrative responsibilities, department and program assessment, and service duties associated with educational initiatives, which include:

University-Level Administrative Responsibilities:

- Led and coordinated NDSU's Peer Teaching Review (PTR) program, which provides junior faculty with experienced mentoring and formal documentation of their teaching efforts from full or distinguished professors. Senior faculty are trained in formal pedagogical review and provide junior faculty with formal documentation for their promotion, tenure, and evaluation (PTE) portfolios.
- Developed and organized collaborative projects with administrative offices across NDSU, including the Offices of the President, Provost, Vice-Provost of Faculty Affairs and Equality, Vice-Provost Student Affairs and Enrollment Management, Institutional Research and Analysis, Assessment and Accreditation, Research and Creative Activity, Information Technology Service, Registration and Records, Student Success, Disability Services, Career and Advising Center, Facilities Management, NDSU Libraries, and all Academic Colleges and Units.
- Collaborated with outside postsecondary institutions and national organizations to achieve national, state, and regional administrative and educational goals, including projects with the National Science Foundation (NSF), Association of Public and Land-Grant Universities (APLU), Association of American Colleges and Universities (AAC&U), United States Department of Agriculture National Institute of Food and Agriculture (USDA NIFA), Association of Engineering Education (ASEE), EDUCAUSE, Network of STEM Education Centers (NSEC), North Dakota University System (NDUS), North Dakota (ND) Distance Education Directors, ND General Education Council, ND Established Program to Stimulate Competitive Research (EPSCoR), and the Fargo-Moorhead-West Fargo Chamber of Commerce.
- Co-led University accreditation compliance procedures with the Higher Learning Commission (HLC), in co-efforts with the Director of the Office of Institutional Research and Analysis (2018-2020), and performs University Assessment Committee member duties (2020-2022), which has included:
  - Collecting curricular, co-curricular, and extension assessment evidence
  - Organizing, and overseeing a narrative justification for HLC institutional compliance
  - Providing academic program assessment support, including rubric development, academic program report collection, UAC review distribution, feedback clarification, procedural mentoring, and dissemination of formal reports containing assessment results, and suggesting improvement strategies to academic units, departments, and upper-administration personnel.
  - Coordination of senior university assessment leadership activities were conducted during university upper-level administrative transitions and prior to establishing a permanent Director of Assessment and Accreditation position in 2020.

Office-Level Administrative Responsibilities:

- Managed 10 full-time professional office staff members, 1 postdoc researcher, and 8 graduate student assistants within NDSU's Office of Teaching and Learning.

- Led and coordinated NDSU's Peer Teaching Partnership (PTP) program, which matches faculty peers into partnerships to evaluate one another's teaching. Peer partnerships are personalized, based on requested preferences, and may be formal or informal pairings. Partners may choose to provide formal support letters for promotion, tenure, and evaluation (PTE) portfolios or offer casual, unbiased, and constructive teaching recommendations to each other.
- Provided personalized consulting and instructional coaching to STEM faculty, ranging from individual support sessions to ongoing mentorship collaborations.
- Led grant-funded efforts to mentor and teach individual NDSU faculty and local Indigenous liaisons on developing novel Professional Development (PD)-credit courses for Covid-affected K-12 educators. Courses focus on providing access to new teaching technologies, online learning methods, teaching on difficult issues and societal transitions, improving cultural awareness, STEM-specific teaching approaches, literacy development, mental wellbeing, and student engagement (31 classes developed).
- Provided leadership in NDSU's Distance and Continuing Education program, efforts have included:
    - Fostering PD-credit course development, coursework approval, administrative oversight, instructor support, course assessment, record retention, and program budget management
    - PD-credit courses developed and offered through the office maintain state licensure and provide career promotion for K-12 teachers in North Dakota and Minnesota:
        - [Approved PD Courses Offerings through OTL (Sp/Su/Fa semesters): 2017 (271 classes; 3,352 students), 2018 (270 classes; 3,628 students), 2019 (254 classes; 3,271 students), 2020 (265 classes; 2,708 students), 2021 (326 students)]
- Provided guidance in administering University Graduate Certificate programs centering on contemporary pedagogical practices in higher education. Efforts have included:
    - Administering and co-organizing the College Teaching Certificate (CTC) program (9-credits)
    - Developing and co-organizing the Inclusive Teaching Certificate (ITC) program (9- to 12-credits)

<u>University-Level Service: Developing and Implementing Educational Grant-Funded Programs at NDSU:</u>

- *2020-2021:* Lead (PI) on North Dakota Governor's Emergency Education Relief (GEER)-Funds grant to develop 30 new, faculty-led, Professional Development (PD) classes for K-12 educators in North Dakota to assist with COVID-19 relief efforts.
- *2020-2022:* Faculty training lead (Senior Personnel) and leadership team member and for the National Institute of Food and Agriculture (NIFA)-funded program 'New Beginnings' – Focused on identifying and resolving issues in educational inequality for Tribal students and communities. Products supported include scholarship awards, student support, and training and resource develop for NDSU faculty, staff, and students on regional Native American cultures, history, and beliefs.
- *2019-2022:* Co-lead on institutional efforts towards Inclusive Excellence and Faculty Diversity (ASPIRE; IChange), with the Vice-Provost of Faculty Affairs and Equity, in coordination with national efforts funded by the National Science Foundation (NSF) and the Association of Public and Land-grant Universities (APLU).
- *2018-2021:* Co-PI on a 6-year NSF-funded grant program for the Scholarly Teaching improvement and professional development of STEM faculty, also incorporates non-STEM disciplines (Co-PI; NSF IUSE - Gateways-ND).
- *2018-2022:* Co-PI on a 4-year (3-years plus a 1-year extension for COVID-19 impacts) NSF-funded grant program that provides study-abroad STEM learning experiences in Beijing, China for North Dakota Tribal students (Co-PI: IRES USA: China; PI for NDSU).
- *2017-2022:* Lead on efforts to coordinate, develop, and apply for multiple multi-million-dollar grant programs in the Scholarship of Teaching and Learning (NSF IUSE: Scholarship-ND); Inclusive Excellence (Howard Hughes Medical Institute); and Scholarly Teaching across 15 of the 18 public, Tribal, and private postsecondary institutions in North Dakota (NSF IUSE: Frameworks-ND).

Office-Level Service: Development and Support of Educational Programs and Assessment within NDSU:

- Developed educational programs which aimed at creating educational training and support for NDSU faculty, instructional staff, and graduate students, as well as state and regional K-12 educators their students. Select programs include:
  - Instructional Consulting
  - Consulting for Faculty Grant Development and Writing
  - Peer Teaching Review & Peer Teaching Partnerships
  - College Teaching Certificate
  - Distance and Continuing Education (DCE) PD-Credit Course Organization
  - Graduate Student Teaching and Learning Conference
  - Graduate Teaching Assistant Learning Communities (TALCs)
  - Curriculum Mapping for NDSU academic majors
  - Expanding Your Horizons - Outreach for STEM faculty to middle school female students
  - Avenues of Scientific Discovery - Outreach for STEM graduate students to high school students
  - Instructional Design Support - in-person, online, hybrid, and HyFlex teaching design
  - Program and class assessment training and support efforts

Coordinator of Special Programs and Assessments, Office of Teaching and Learning **2016-2017**

Under the direction the Office of Teaching and Learning Director and the Office of the Provost; Coordinated and composed educational grants, developed and improved university educational programs, and participated in university-wide educational initiatives**.**

University Administration Fellow, Office of Teaching and Learning **2016**

Under the direction of the Office of Teaching and Learning Director and the Office of the Provost; Coordinated and composed educational grants, developed and improved university educational programs, and participated in university-wide educational initiatives**.** Mentor: Dr. Paul Kelter, Professor of Education and Director of the Office of Teaching and Learning

Instructor of English, Department of English **2016**

Instructor of Record for upper-division writing class: Writing in the Technical Professions (ENG 321).

Adjunct Professor of Soil Science, Department of Soil Science **2015-2019**

Research Soil Scientist and Instructor of Record for Soil Ecology (SOIL 351), 2015; Instructional development liaison for the School of Natural Resource Sciences.

Instructor of Soil Science, Department of Soil Science **2014-2015**

Co-Instructor of the Introduction to Soil Science Lecture and Laboratory Classes (SOIL 210).

Research Associate and Literary Mentor, Department of English **2014-2018**

Research team member on physical, mental, and emotional complications associated with learning English as a non-native adult learner and instructor in verbal and written communication for refugees and New Americans who are English Language Learners, 50+ in-home teaching sessions with learners from the Democratic Republic of the Congo (2 hours each), in conjunction with Giving + Learning Director and Mentor: Dr. Kevin Brooks, Professor of English and Bush Foundation Fellow 2013-2015.

Iowa State University // 2013 // ***Ames, Iowa***

Postdoctoral Research Associate, Department of Agricultural and Biosystems Engineering **2013**

Research Soil Scientist in watershed hydrology and vegetative filter systems, in relation to non-point source pollution in agriculture and cover crop utilization in corn and soybean field crop production systems; Extension Education Instructor in soil, water, conservation, and cover crops, and in the Iowa Learning Farms *Water Rocks!* Youth Program; Advisor: Dr. Matthew Helmers, Professor of Agricultural and Biosystems Engineering and Associate Chair for Research and Extension with Iowa State Extension.

University of Arkansas // 2008-2013 // *Fayetteville, Arkansas*

Postdoctoral Research Associate, Department of Crop, Soil and Environmental Sciences **2012-2013**
Research Soil Scientist in soil physics and rice-based crop production systems, in rotation with corn, soybean, and wheat; Advisor: Dr. Kristofor Brye, Professor of Soil Physics and Pedology.

Graduate Teaching Assistant, Department of Crop, Soil and Environmental Sciences **2010-2012**
Assisted in teaching the Introduction to Soils lecture, drill, and laboratory classes (CSES 2200); Advisor: Dr. Dave Miller, Professor of Soil Chemistry.

Graduate Research Assistant, Department of Crop, Soil and Environmental Sciences **2008-2012**
Research conducted in soil physics and rice-based crop production systems in rotation with corn, soybean, and wheat; Advisors: Dr. Kristofor Brye, Professor of Soil Physics and Pedology and Dr. Merle Anders, Assistant Professor of Rice-Based Cropping Systems.

COMMUNITY EDUCATION AND ECONOMIC DEVELOPMENT POSITIONS:

Giving + Learning Non-Profit Organization // 2014-2018 // *Fargo, North Dakota*

Adult English Literacy Class Instructor, Fargo Adult Learning Center **2015-2016**
Instructor of the Adult English Language Learning Class for refugees and New Americans at the CHARSM Community Center; class was composed of approximately 15 Bhutanese and Sudanese native-born speakers.

Community Literacy Board Member, Giving + Learning **2014-2018**
Specializing in adult refugees and New Americans who are English Language Learners; Focused primary adult learners from the Democratic Republic of the Congo, Sudan, Somalia, Nigeria, Bhutan, and Bosnia; Active in various education-, culture- and community-building activities involving New Americans in Fargo-Moorhead.

United States Agency for International Development (USAID) // 2013-2014 // *Kenya* // *Uganda* // *Washington, D.C.*

Congressional Spokesperson for the USAID Farmer-to-Farmer Program **Nov. 2014**
Advised and discussed USAID and Catholic Relief Services programs for international agricultural development with members of the United States Senate and the United States House of Representatives. *Washington, D.C.*

Postharvest Production Agronomist, USAID Farmer-to-Farmer Program **May 2014**
USAID-funded development project through the Catholic Relief Services, in association with the Namungalwe Area Cooperative Enterprise (ACE); Consulted and trained on postharvest maize handling and storage and soil health management; Training classes conducted with 25 Namungalwe ACE management personnel and 156 smallholder farmers; Located throughout the Iganga District at 7 Rural Agriculture Producer (RPO) Organizations. *Iganga, Uganda*

Rice Agronomist and Production Engineer, USAID Farmer-to-Farmer Program **June 2013**
USAID-funded development project through the Citizen's Network for Foreign Affairs (CNFA) and the Mwea Rice Growers Multipurpose (MRGM) Cooperative (Co-op) Society – Consulted and designed a rice production and harvesting mechanization plan for the Mwea Irrigation Scheme in Central Kenya; trained 23 co-op management personnel and 34 smallholder farmers. *Wang'uru, Central Province, Kenya*

Elementary and Secondary Education Positions // 2004-2008 // *Nashville, Tennessee*

State Achievement Test Essay Reader and Grader, Measurement Incorporated **2007-2008**
Evaluator of statewide standardized educational testing essays for grades 9-12 and college entry.

Academic Tutor in Science and Math, Self-Employed **2004-2008**
Tutored children in grades 6-12 in math and science.

Computer Skills Teacher, Boy's and Girl's Club **2004**
Instructor of basic computer skills to urban-located children in grades 5-12.

MILITARY SERVICE:

United States Navy // 1996-2000 // USS Sacramento (AOE-1), *Homeport: Bremerton, Washington*

Interior Communications Electrician **1996-2000**
Fields of Expertise: Electrical and Mechanical Engineering, Metering and Communication Devices
Additional Duties: Environmental Coordinator of the Engineering Department, Electrical Division Training Coordinator, Commanding Officer's Administrative Assistant at the Navy Legal Service Office Northwest
Highest Rank Earned: Petty Officer 3rd Class (E-4)
Medals Earned: Navy Unit Commendation, Armed Forces Expeditionary Medal, Sea Service Deployment Ribbon, Navy Good Conduct Medal, Battle "E" Ribbon
Duty Tour Locations and Ports: *Pacific Ocean, Indian Ocean, Persian Gulf // Japan, Hong Kong (under British sovereignty), China, Singapore, Thailand, United Arab Emirates, Bahrain, Iran, Mexico, and Australia*

UNIVERSITY ADMINISTRATIVE SERVICE:

COMMITTEE AND ORGANIZATION INVOLVEMENT:

University of Nebraska // 2022-Present // *Lincoln, Nebraska*

Faculty-Led Inquiry into Reflective Scholarly Teaching (FIRST) Project – Fall 2023 Cohort	2023-Present
IANR Roads Scholar Tour 2023 – Participant	2023
CASNR Biennial Program Reviewer – 2022 Reviewer	2023
Master of Applied Science (MAS) Degree Program – Committee Member	2022-Present

North Dakota State University // 2014-2022 // *Fargo, North Dakota*

Inclusive Teaching Certificate Development – Advisory Committee Member	2021-2022
Faculty Mentorship Program for First-Generation Students in Agricultural Sciences – Member	2021-2022
Peer Teaching Review for Promotion and Tenure Evaluation – Program Lead and Coordinator	2021-2022
Supporting Faculty & Adjusting Expectations for PTE due to COVID-19 – Advisory Committee Member	2020-2021
Equity Can't Wait Challenge, NDSU Team – Grant Application Team Member	2020-2021
New Beginnings; Making Good: Delivering Educational Equality for & with Indigenous Tribal Students & Communities – Committee Member	2020-2022
Howard Hughes Medical Institute: Inclusive Excellence 3 Application Committee – NDSU Representative	2019-2020
Administrative Review Committee, Office of Institutional Research and Analysis Director – Member	2019
Association of Public and Land-grant Universities (APLU) – NDSU Representative	2019-2022

ASPIRE IChange Network Committee – NDSU Group Leader, 2020-2022
ASPIRE Alliance Institution Team at NDSU – NDSU Co-Leader and Team Member, 2020-2022
Degree Competition Award Committee – NDSU Representative and Award Application Author, 2019

Western Land-grant Cluster Committee – NDSU Representative, 2019-2021	
Association of American Colleges and Universities (AAC&U) – NDSU Representative and Associate	2018-2022
Teaching to Increase Diversity and Equity in STEM (TIDES) Institute, 2020/2021 Cohort	
Knowledge Exchange Institute – Broadening Participation in STEM, 2019 Cohort	
Project Kaleidoscope (PKAL) Institute – STEM Education Reform Collaboration, 2018 Cohort	
Higher Learning Commission (HLC) Accreditation Writing Team for University	2018-2020
Warrior Words Veteran Program – Chair and Program Organizer	2018-2020
VALOR Advisory Board – Chair of Training and Outreach Committee	2018-2022
Broader Impacts Discussion Group, NDSU Office of Research and Creative Activity – Member	2018-2020
Graduate Student Orientation – Mentor and Program Facilitator	2018-2022
NSF-Funded IRES: China-USA Steering Committee (PI)	2018-2022
Civil Discourse Discussion Planning Committee, NDSU Libraries – Member and Discussion Facilitator	2017-2020
Writing Center Advisory Board – Member	2017-2020
Information Technology Services CAREs Committee – Member	2017-2020
NSF-Funded Gateways-ND Steering (Chair)/Research/Curriculum/Selection Committees –(co-PI)	2017-2021
Learning Spaces Executive Committee – Member	2017-2022
University Assessment Committee (UAC)	
Faculty Representative (Elected) for the College of Agriculture, Food Sys., and Natural Res.	2020-2022
Office of Teaching and Learning Representative – Member	2017-2020
Ad-Hoc Assessment Task Force – Co-Lead Coordinator	2017-2020
Curriculum Mapping Task Force – Member and Chair	2017-2020
Teach-In Planning Committee – Member	2017-2019
Teaching Assistant Training Committee – Member and Organizer	2017-2022
Avenues of Scientific Discovery Planning Committee – Chair	2017-2021
Amy Rupiper Taggart Award for Excellence in Program Assessment Committee – Chair	2017-2020
Graduate Student Council – Executive Advisor	2017-2020
College Teaching Certificate Committee – Member and Interim Director Representative	2017-2021
Quality Matters Online Course Assessment Committee – Member	2017-2019
Virtual Reality Learning Project Committee – Member	2017-2019
Anti-Racism/NDSU Rapid Response Team – Member	2017-2020
NDSU EDUCAUSE Digital Fellows NDSU Committee – Member	2017-2018
NDUS Distance and Continuing Education – NDSU Director Representative	2017-2020
Art of Dinning Training Committee – Member	2017-2019
Open Educational Resources Committee, NDSU Libraries – Member	2017-2018
North Dakota STEM Education Collaborative – NDSU Representative	2017-2020
NDSU Employment Search Committees – Member	2017-2022
Instructional Designer, Information Technology, 2020	
Learning and Applied Innovation Assistant Manager, Information Technology, 2019	
Associate Dean of Libraries, 2017	
Learning and Applied Innovation Assistant Manager, 2017	
Writing Center Director, 2017	
NSF STEM Instructional Grant Committee for 15 North Dakota Institutions – Lead Coordinator	2016-2017
NDSU School of Natural Resource Sciences Curriculum Committee - Member	2014-2015

University of Arkansas // 2010-2012 // *Fayetteville, Arkansas*

Annual Awards Banquet, Department of Crop, Soil and Environmental Sciences (CSES) – Organizer	2012
CSES Graduate Student Association – Treasurer	2011-2012
Annual Awards Banquet, CSES – Host and Organizer	2011
Curriculum Committee Member, CSES – Graduate Student Chair	2010-2011
CSES Graduate Student Association – President	2010-2011

UNIVERSITY TEACHING EXPERIENCE:

UNIVERSITY COURSES:

University of Nebraska-Lincoln // 2022-Present // *Lincoln, Nebraska*

AGRI/NRES 930: Conservation Agriculture Systems (3 Credits) **2023-present**

College of Agriculture and Natural Resources, University of Nebraska-Lincoln, Graduate-Level
Instructor of Record – Online, asynchronous, graduate-level course. ***Fall Semesters.***

Explores historical foundations, motivations, advances, and outcomes in global and local agricultural systems across time. Broad principles of conservation agriculture are evaluated to connect system-based goals, processes, and outcomes. Social and civil issues influencing the viability of production agriculture, food security, economic prosperity, environmental health, and cultural sovereignty are rooted into the curriculum.
Graduate Student Enrollment (MAS, MS, and PhD): [**Sp2023: 7 | Fa2023: 7]**
[Approved 3/2023, Spring 2023 Class Number – AGRI 896/NRES 898 (Sec. 701)]

AGRI/NRES 945: Resilience Design in Agriculture (3 credits) **2023-present**

College of Agriculture and Natural Resources, University of Nebraska-Lincoln, Graduate level
Instructor of Record – Online, asynchronous, graduate-level course. ***Fall Semesters.***

Explores approaches to designing, or redesigning, food systems to optimize resource use, maximize efficiency, promote value-added incentives to controlling waste and pollution, strengthen ecological resilience, and explore economic concepts of circularity and solidarity. Design strategies focus on mitigating external disturbances of varying intensity and length (e.g., floods, droughts, heat waves) and regenerating agroecosystems affected by historical land management (e.g., reduced biodiversity, additions/losses in the system, soil/water management).
Graduate Student Enrollment (MAS, MS, and PhD): [**Fa2023: 5+1 Audit = 6]**
[Approved 3/2024, Fall 2023 Class Number – AGRI 896/NRES 898 (Sec. 703)]

AGRI/NRES 950: International Applications of Conservation Agriculture (3 credits) **2023-present**

College of Agriculture and Natural Resources, University of Nebraska-Lincoln, Graduate level
Instructor of Record – Online, asynchronous, graduate-level course. ***Spring Semesters.***

Investigates large-scale and small-holder food and fiber systems in Africa, Asia, Australia, Europe, North America, and South America. Students learn strategies to develop science-based improvement plans for various issues in the agriculture systems explored, which have targeted goals, project objectives, theories to change, implementation strategies, and assessment indicators.
Graduate Student Enrollment (MAS, MS, and PhD): [**Sp2023: 6+1 Audit = 7 | Sp2024: 8]**
[Approved 4/2023, Spring 2023 Class Number – AGRI 896/NRES 898 (Sec. 702)]

North Dakota State University // 2014-2022 // *Fargo, North Dakota*

SOIL 210: Introduction to Soil Science **2019-2022**

Department of Soil Science, North Dakota State University, Undergraduate level
Fall and Spring Semesters, Instructor on Record – 3-Credit Lecture Class
Student enrollment numbers:

[Fa2019: 79 | Sp2020: 97 | Fa2020: 62 | Sp2021: 102 | Fa2021: 67 | Sp2022: 91]

*Enrollment number for Fall 2020 limited due to Covid-19 restrictions
*Fa2019 – in-person; mid-Sp2020, Fa2020, Sp2021, Fa2021, & Sp2022 – HyFlex Inst.

An introductory-level course that covers the basic principles of soil science. Topics include the concept of soil as a natural body, composition of soil, functions of soil, soil formation and classification, physical/chemical/biological properties of soils, soil management and conservation, and discussion of global issues affecting the soil resource.

SOIL 792: Graduate Teaching Experience **2019**
Department of Soil Science, North Dakota State University, Graduate level
Fall and Spring Semesters, Instructor on Record, - 2-credit Field Experience/Practicum Class
Provides personal guidance to Graduate Teaching Assistant in teaching Soil Science.

ENG 321: Writing in the Technical Professions **2016**
Department of English, North Dakota State University, Undergraduate Level
Fall Semester, Instructor on Record – 3-Credit Lecture Class **[Fa2016: 22 Students]**
An upper-level writing course designed to provide science and engineering students with a comprehensive understanding of professional writing communication. This class prepares students for professional careers by introducing different technical writing genres and refining individual writing skills through intensive practice in reading, writing, analyzing, and editing a variety of professional documents.

SOIL 351: Soil Ecology **2015**
Department of Soil Science, North Dakota State University, Undergraduate Level, SOIL 351
Fall Semester, Instructor on Record – 3-Credit Lecture Class **[Fa2015: 34 Students]**
An upper-level course designed to provide students with a comprehensive understanding of basic soil ecology principles and theories. The class focuses on the role of soil organisms in the ecological balance among soil physical properties, soil biota, nutrient cycling, soil fertility, soil health, agricultural productivity, land-use sustainability, and global climate change.

SOIL 210: Introduction to Soil Science **2014-2015**
Department of Soil Science, North Dakota State University, Undergraduate level
Fall and Spring Semesters, Co-Instructor on Record: 5 Lab classes **[Fa2014, Sp2015: 16 Students/class]**
and Co-Instructor for a 3-Credit Lecture Class **[Student numbers: Fa2014: 78 | Sp2015: 80]**
An introductory-level lecture and laboratory course designed to cover the basic principles of soil science, with a focus on agricultural soil management and examining soils across the state of North Dakota. Co-Instructed with Dr. R. Jay Goos.

University of Arkansas // 2010-2011 // ***Fayetteville, Arkansas***

CSES 2200: Introduction to Soil Science **2010-2011**
Department of Crop, Soil and Environmental Sciences, Undergraduate level
Fall and Spring Semesters, 4-Credit Lecture and Lab Class
Graduate Student Instructor – Lab classes **[Fa2010, Sp2011, Fa2011: 20 Students/class]**;
2 Lecture classes **[100+ Students/class]**; 1 Drill (scientific math) class **[20 students]**

Invited University Course Lectures

North Dakota State University // *Fargo, North Dakota*
PLSC 110: World Food Crops **2018**
Plant Science Department, Undergraduate Level, Fall Semester
Presented – 1 Guest Lecture, "Rice: Domestic and Global Production"
University of Arkansas // *Fayetteville, Arkansas*
CSES 5224: Soil Physics **2011-2012**
Department of Crop, Soil and Environmental Sciences, Graduate level, 2 Spring Semesters
Presented – 5 Guest lectures
Middle Tennessee State University // *Murfreesboro, Tennessee*
ABAS 2130: Introduction to Agriculture Economics **2006**
Department of Agriscience and Agribusiness, Undergraduate level, Fall Semester
Presented – 1 Guest lecture

UNIVERSITY ADVISING EXPERIENCE:

UNIVERSITY STUDENTS:

University of Nebraska-Lincoln // 2023-present // *Lincoln, Nebraska*

Advised Students:

Timothy Okoliko, M.A.S. – Conservation Agriculture Specialization (Faculty Advisor)	2023-Pres.
Kathleen Tylutki, M.A.S. – Conservation Agriculture Specialization (Faculty Advisor)	2023-Pres.
Brittney Emerson, M.A.S. – Conservation Agriculture Specialization (Faculty Advisor)	2023-Pres.
Matt Goble, M.A.S. – Conservation Agriculture Specialization (Faculty Advisor)	2022-Pres.
Halley Lauchland, M.A.S. – Conservation Agriculture Specialization (Faculty Advisor)	2022-Pres.

Graduate Student Advisory Committees – Final Project for MAS Degree:

Jarrod Ferguson, M.A.S. – Entrepreneurship Specialization (Committee Member)	2023
Holly Podliska, M.A.S. – Science for Educators Specialization (Committee Member)	2023

North Dakota State University // 2015-2022 // *Fargo, North Dakota*

Advised Students:

Lewis Goehring, B.S., Natural Resource Sciences (Teaching Assistant Mentor)	2022
Emma Johnson, Ph.D., Developmental Science; Honors Program (Partial Assistant Supervisor)	2020-2021
Savanna Jellison, Ph.D., Developmental Science; Honors Program (Partial Assistant Supervisor)	2020-2021
Grace (Johnson) Lautenschlager, M.S., Natural Resource Manage (Faculty Advisor; Teaching Mentor)	2020-2021
Nicholas Birkhimer, M.S., Soil Chemistry (Teaching Assistant Mentor)	2020
Umesh Acharya, Ph.D., Soil Physics (Graduate Teaching Assistant Mentor)	2019-2021
Matt Kruger, M.S., Soil Fertility (Graduate Teaching Assistant Mentor)	2019
Holly DeVries, M.S., Mental Health Counseling (Assistantship Supervisor and Mentor)	2019-2021
Amy Tichy, M.S., Mental Health Counseling (Assistantship Supervisor and Mentor)	2019-2021
Jabril Hassan, M.Ed., Teacher Education, Sociology/Anthropology (Assistantship Supervisor)	2018-2019
James Kopco, Post-Doc in STEM Education, Ph.D. in Entomology (Postdoc Supervisor)	2018-2019
Elliott Welker, Ph.D., Education, Institutional Analysis (Doctoral Committee Member)	2018-2022
Farah Attia, M.Ed., Teacher Education, English/Math (Assistantship Supervisor)	2018-2019
Jamie Schaffer, M.B.A., Marketing/Univ. Assessment (Assistantship Supervisor)	2018
Anna Semanko, Ph.D., Psychology (Assistantship Supervisor and PhD Mentor)	2017-2021
Alistair McInerny, Ph.D., Physics/STEM Ed. (Assistantship Supervisor)	2017-2019
Rebecca Davidson Reichenbach, Ph.D., Biology/STEM Ed. (Assistantship Supervisor and Mentor)	2017-2021
Mackenzie Ries, B.S. Soil Science (Informal Mentor)	2015-2020

UNIVERSITY STUDENT CLUBS:

North Dakota State University // 2015-2022 // *Fargo, North Dakota*

Advised Student Clubs:

VALOR Student Military Veteran's Club (Advisor and Board Member)	2018-2022
Graduate Student Council (Executive Advisor)	2017-2020

STUDENT COMPETITION ASSESSMENT:

North Dakota State University // 2016-2020 // *Fargo, North Dakota*

NSF Personal Statement Reviewer for Doctoral Fellowship Applications **2018-2020**
Review and provide feedback on personal statements written by students prior to submission (2018, 2019).

W-Challenge Undergraduate Writing Competition **2017-2020**
Judge for the annual writing contest that evaluates academic, professional, creative, and foreign language writing. Sponsored by the English Department Writing Programs (2017, 2018, 2019).

Annual Bacterial Physiology (MICR 480) Undergraduate Mock Poster Symposium **2017-2018**
Judge for the final assignment of the undergraduate class in Bacterial Physiology. Group presentations focused on the use and application of the Cacao Genome Database (Fa2017, Sp2018, Fa2018).

Showcase of Student Writing Symposium – North Dakota State University **2016-2020**
Judge for the annual writing symposium that highlights undergraduate student writing in undergraduate English courses. Sponsored by the English Department Writing Programs (2016, 2017, 2018, 2019).

Soil Science Society of America – ASA-CSSA-SSSA International Annual Meetings // 2012-2013 // *United States*

Graduate Oral Research Symposium **2013**
Session: General Wetland Soils I, *Tampa, Florida*

Undergraduate Oral and Poster Research Symposiums **2013**
Students of Agronomy, Soils and Environmental Sciences (SASES), *Tampa, Florida*

Undergraduate Oral Research Symposium **2012**
Students of Agronomy, Soils and Environmental Sciences (SASES), *Cincinnati, Ohio*

University of Arkansas // 2008-2012 // *Fayetteville, Arkansas*

Arkansas Future Farmers of America (FFA) State Land Judging Competition **2011-2012**
Proctor of 200+ High School Student State Competition, University of Arkansas Extension Station

EDUCATIONAL PROGRAM DESIGN & WORKSHOP DEVELOPMENT:

University of Nebraska-Lincoln // 2022-Present // *Lincoln, Nebraska*

Conservation Agriculture Specialization – Master of Applied Science (MAS) program **2022-Present**
Developed core classes for the Conservation Agriculture specialization within the MAS program. Class development goals include creating three online, asynchronous classes at the graduate-level classes in conservation agriculture systems, international applications of agriculture, and resilience design in agriculture and advising MAS students within the Conservation Agriculture specialization.

North Dakota State University // 2017-2022 // *Fargo, North Dakota*

Peer Teaching Review – Formal Assessment Program **2021-2022**
Organized and led program during the Fall and Spring semesters, which matches junior faculty (assistant or associate professor) with a senior faculty member (full or distinguished professor) for a formal peer-review of their teaching. This formal letter is for the promotion, tenure, and evaluation (PTE) purposes. The senior faculty evaluates the class syllabi, assignments, and teaching abilities to provide formal feedback for the junior faculty to include in their tenure packets.

Teaching Consultation – Individual Faculty Consultation on Teaching in STEM **2021-2022**

Organized and led one-on-one consulting for individual faculty to improve their teaching skills, deal with barriers to successful teaching, or aid in international transitions to teaching within US classrooms. The program involves multiple meetings, course review, and live teaching evaluations.

Military Veterans Student Experiences – Including U: Brown Bag Conversations Workshop **2020**

Co-led a workshop session on the unique experiences of being a U.S. Military Veteran student in a university setting. The workshop series was developed to promote inclusion and diversity by NDSU's Office of the Vice Provost for Faculty Affairs and Equity and Inclusion Committee.

Annual NDSU Inclusion Conference **2020**

Led a session on ways the Office of Teaching and Learning participates in, and activates for, inclusive practices on NDSU's campus, across the state and nation, and within the local community.

Grant Program Evaluation – Proposal Development Program **2019**

Led a session on how to write an evaluation plan as well as how to find evaluators to help with evaluation plans. The workshop series was developed and sponsored by the Research and Creativity Activities (RCA) Division at NDSU.

First-Generation Experiences – Including U: Brown Bag Conversations Workshop **2019**

Co-led with Kaelen Napoleon, Student Success Education Specialist, and Aaron Daigh, Asst. Professor of Soil Science, a workshop session on the unique experiences of being a first-generation student in a university setting. The workshop series was developed to promote inclusion and diversity by NDSU's Office of the Vice Provost for Faculty Affairs and Equity and Inclusion Committee.

How to Teach Your Class Online – Workshop Series **2019**

Co-led the grassroots organization and implementation of a semester-long, 3-part workshop series for faculty, staff members, and graduate students on how to develop an online course from a face-to-face format. The workshop was Co-led with Steve Beckermann, NDSU Instructional Designer. Sessions: 1) *Getting Started*, 2) *10 Best Practices in Online Instruction*, and 3) *Tools of the Trade*.

Film Screening: *Unlikely*, Century Theater **2019**

Assisted Graduate Student, Megan Yerhot, with organizing and promoting the event. The film narrated the educational barriers faced by many students that are trying to enter and excel in higher education.

VALOR Teaching and Outreach Workshops and Presentations **2018-2022**

Chair of the Veteran Alliance Organization (VALOR) Teaching and Outreach Committee, which includes working with other Advisory Board members, VALOR allies, and campus and community members to enhance timely and valuable VALOR presentations and training. VALOR focuses on providing insight and education regarding military service and the ways that VALOR allies, staff, faculty, students, and community members can help create a more welcoming environment that understands and meets the specific needs of military service members and veterans at NDSU and in the community.

Agriculture Teaching Cafés **2018-2019**

Assisted with the organization of teaching discussion sessions for NDSU faculty and instructors in Agriculture-focused disciplines. The initial series of 5 café talks is being launched in Fall 2018 under leadership of Loren Baranko, Lecturer in Animal Science.

Civil Discourse – Workshop Series **2018-2019**

Social Shaming (2019)

Women in the Academy (2018)

Organized and co-led workshops on ways to engage in civil discourse. The workshop series focuses on respectful listening, using critical thinking skills, and sharing ideas on highly political and highly emotional topics in a civilized manner, with a focus on creating understanding and respectful engagement among citizens with polarized viewpoints. The workshop series was launched in Fall 2018 in association with NDSU Libraries.

Major Maps Workshop - Undergraduate Programs **2018**

Organized and led two sessions to guide program directors and deans in creating a comprehensive diagram for undergraduate program-based educational and professional development. The workshop was a part of the Provost's Office initiative to create Major Maps for all campus programs under the leadership of Vice-Provost Charlene Wolf-Hall.

Expanding Your Horizons **2018-2020**

Organized (2018, 2019, 2020) led (2018) the annual NDSU-based national STEM education program for 400+ middle-school female students around North Dakota and Minnesota.

Peer-Teaching Partnership Workshop **2018-2022**

Organized (F/Sp 2017, 2018, 2019, 2020, 2021, 2022) and led (2018, 2019, 2020, 2021, 2022). Each Fall and Spring semester, this workshop meets with faculty peers who voluntarily agree to be matched with a faculty to peer to evaluate their class, syllabi, classwork, and teaching abilities, which provides feedback that has been used to submit as a teaching excellence in promotion and tenure packets or as an informal method of getting unbiased feedback on their teaching.

Avenues of Scientific Discovery **2018-2021**

Organized and led (2018, 2019) the annual STEM education program where 30+ graduate students demonstrated research-based material to 100+ high school students annually.

Graduate Teaching and Learning Conference / Teaching Assistant (TA) Training Workshop **2017-2021**

Organized (2017, 2018, 2019, 2020, 2021) and led (2018, 2019, 2020, 2021) an annual one- or two-day workshop focused on teaching graduate teaching assistants how to develop skills in teaching to improve student learning and for professional growth.

Gateways-ND: Faculty Development Workshops and Faculty Learning Communities **2017-2021**

Organized (2017, 2018, 2019, 2020,2021) and led (2018, 2019, 2020, 2021) NSF-funded faculty development workshops in active learning and teaching improvement at NDSU. Two-day workshops occur 5 times over two years for each cohort. Faculty learning communities occur 5 times a semester during the Fall and Spring semesters for the cohorts. At any given time, we have two cohorts actively engaged in the training program.

Expanding Your Horizons Workshop - *Getting the DIRT on Soil* **2017**

Led a workshop in Soil Science for 22 Middle school girls around North Dakota and Minnesota as a part of the annual NDSU-based national STEM education program. The workshop covered soil classification, hydrology, chemistry, and physics on a middle-school level.

Iowa State University // 2013 // *Ames, Iowa*

Extension Field Day Coordination and Adult Education **2013**

Co-organized and co-led extension field days, extension personnel training, and advertising for Iowa Learning Farms / Department of Agricultural and Biosystems Engineering, Iowa State University. Organized material for an Iowa State Extension training CD on cover crops, developed curriculum for soil and water studies for the community college level, developed training material and plans to conduct five workshops on soil quality and cover crops, and was a part of the Cover Crop Working Group. Demonstrated seeding and sampled 6 research sites across Iowa for evaluation. *7 Field Days, 4 Extension Trainings.*

Youth Extension Education **2013**

CO-organized and co-led statewide conservation program for grades K-12, Iowa Learning Farms – *Water Rocks!* at Iowa State University. Developed curriculum for soil and water studies for grades K-12, visited schools and extension stations across Iowa to teach soil and water conservation, and worked with portable rainfall simulators in "Conservation Station" trailers*. 9 School and Outdoor Classroom Visits.*

United States Agency for International Development (USAID) // 2013-2014 // *Wang'uru, Kenya* & *Iganga, Uganda*

Postharvest Loss Prevention and Soil Health Education and Field Demonstrations **2014**

Led training workshops through the Namungalwe Area Cooperative Enterprise (ACE), Iganga, Uganda. *14 Training Classes at 7 Rural Agriculture Producer (RPO) Organizations for 156 farmers over 3 weeks.*

Mechanizing Rice Production Systems Education and Field Demonstrations **2013**

Led training workshops through the Mwea Rice Growers Multipurpose (MRGM) Cooperative Society, Wang'uru, Central Province, Kenya. *Trained 50+smallholder farmers and cooperative management personnel on rice mechanization over 3 weeks*.

University of Arkansas // 2008-2012 // *Fayetteville, Arkansas*

Rice Producer Education and Field Demonstrations **2012**

Led demonstrations at the University of Arkansas, Rice Research and Extension Station, Pine Tree Research Station, and 3 farmer fields

Rice Research and Extension Center – Field Day Involvement **2008-2012**

Led demonstrations through the Department of Crop, Soil and Environmental Sciences, University of Arkansas, Stuttgart, Arkansas. *3 Annual Field Days*

PROFESSIONAL TRAINING AND CERTIFICATIONS:

PROFESSIONAL INSTITUTES AND WORKSHOP TRAINING:

Penn State Academic Leadership Academy (ALA) – Pennsylvania State University **2021**

Accepted for 2020, Cohort Postponed due to COVID-19 from 2020 to 2021. A 4-day leadership institute to enhance the ability of academic administrators to provide leadership within their respective institutions, with Penn State's Center for the Study of Higher Education and the Higher Education Program. Topics focus on team building, budget management, strategic planning, and faculty development. Institute: June 14-18, 2020, and 6 virtual sessions through 2020-2021, *University Park, Pennsylvania*. -Changed to virtual platform due to travel restrictions: June 7-10, 2021.

Teaching to Increase Diversity and Equity in STEM (TIDES) Institute
Association of American Colleges & Universities (AAC&U) **2021**

Accepted for 2020, Cohort Postponed due to COVID-19 from 2020 to 2021. AAC&U's 4-day professional development institute that empowers STEM faculty and university administrators to implement culturally responsive pedagogy in core STEM classrooms. Institute: June 8-12, 2020, *Leesburg, Virginia* -Changed to virtual platform due to travel restrictions: June 13-17, 2021.

Virtual Conferences, Webinars, and Group Meetings – **2020-2022**

-Changed to online delivery platforms due to the COVID-19 pandemic circumstances-

National Science Foundation (NSF):

INCLUDES ASPIRE Alliance: The National Alliance for Inclusive & Diverse STEM Faculty

ASPIRE Mini Summer Course 'How to Design and Run and Effective and Equitable Online Course' | Instructors: Drs. Don Gillian-Daniel and Robin Greenler, 3 weeks, July 2020

ASPIRE Summer Institute for STEM and Faculty Developers, June 15-19, 2020

ASPIRE Alliance Summit, June 1-3, 2020

IChange Building Leadership Capacity Workshop Series

ASPIRE Institutional Change Initiative – 3 sessions: Jan. 29, Feb. 26, & Apr. 2, 2021

NSF Funding Opportunities: Broadening Participation in STEM, September 30, 2020

AAC&U Teaching to Increase Diversity and Equity in Stem (TIDES) Webinars and Interactive Meetings:

Webinar – Supporting Adjunct and Non-Tenure-Track Faculty, March 31, 2020,

Webinar – Teaching, Learning and Assessing in Remote Learning Environments, April 3, 2020

Webinar – Shaping Teaching and Learning to Address a Global Health Crisis: COVID-19, May 1, 2020

Webinar – Let's Start with "How Are You Doing?": How Resilience and Hope Can Shape a New Normal for Learning and Teaching, May 15, 2020

Webinar – What Now? Planning for the Future of Higher Education in the Wake of the Pandemic, June 9, 2020

Meeting – Turning the Kaleidoscope, Webinar I: Our Collective View, August 13, 2020

Meeting – Turning the Kaleidoscope, Webinar II: Our View Inward, September 22, 2020

Meeting – Turning the Kaleidoscope, Webinar III: Understanding Our View, October 13, 2020

Meeting – Turning the Kaleidoscope, Webinar IV: What am I Missing? Systemic & Critical Inquiry in the Pursuit of STEM Reform, February 16, 2021

American Public and Land-Grant Universities (APLU):

Webinar - The Role of Public & Land-Grant Universities in Strengthening & Advancing U.S. Global Interests, September 29, 2020

Association of American Colleges & Universities (AAC&U) Annual Meeting Training Workshops **2020**
Interactive workshop sessions: *Nudging Toward Equity* and *Next-Gen Leadership: Building an Inclusive Pipeline of Changemakers*. Postsecondary leadership, pedagogical, and institutional research presentation sessions attended throughout the conference. January 22-25, 2020, *Washington, D.C.*

Cluster Initiative Workshop – American Public and Land-grant Universities (APLU) **2019**
A full-day workshop preceding the 3-day annual APLU Conference, which was focused on all 16 clusters of 130 Public and Land-grant postsecondary institutions (morning session) and individual clusters (afternoon session). North Dakota State University is one of 12 institutions in the "Western" Transformation Cluster of the *Powered by Publics: Scaling Student Success* initiative, which focuses on increasing degree completion and decreasing student achievement gaps by 2025. Workshop: November 8, 2019, *San Diego, California*

Western Cluster Workshop – American Public and Land-grant Universities (APLU) **2019**
A 2-day workshop at to organize and share university administrative information among the Western Cluster of the *Powered by Publics: Scaling Student Success* initiative. North Dakota State University is one of 12 institutions in the "Western" Transformation Cluster that meets monthly in a virtual meeting space, in efforts to share best practices in higher education learning. Workshop: September 14-15, 2019, *Fort Collins, Colorado*

Knowledge Exchange Institute (KEI) – Association of American Colleges & Universities (AAC&U) **2019**
AAC&U's NSF-funded workshop offers STEM faculty a unique opportunity to understand and gain evaluation and education research expertise that is culturally sensitive and necessary for more accurately pinpointing the areas where institutional interventions, particularly those related to broadening participation, are likely to flourish. STEM higher education diversity institute dedicated to training in the needed Broader Impacts of STEM educational grants. Institute: May 21-24, 2019, *Alexandria, Virginia*

Assessment and Accreditation Workshop – Higher Learning Commission (HLC) **2019**
A full-day workshop dedicated to obtaining and/or maintaining institutional accreditation by the HLC. The workshop preceded the 4-day annual conference, which offered numerous accreditation-related presentations. Workshop date: April 6, 2019; Conference dates: April 7-9, 2019, *Chicago, Illinois*

Soil Science Education Presentation Review – Soil Science Society of America (SSSA) **2019**
SSSA International Annual Meetings, January 8-11, 2019, *San Diego, California*

Project Kaleidoscope (PKAL) – Association of American Colleges & Universities (AAC&U) **2018**
AAC&U's STEM higher education reform institute dedicated to empowering STEM faculty to graduate more students in STEM fields who are competitively trained and liberally educated. Institute: July 10-15, 2018, *Adamstown, Maryland*

Century and DayCent Computer Modeling Course – Natural Resource Ecology Laboratory (NREL) **2011**
Agroecosystem Nutrient Cycling Simulation Training, *Colorado State University, Fort Collins, Colorado*

Rice: Research to Production Course – International Rice Research Institute (IRRI) **2010**
Rice Genetics, Breeding, Production, and Societal Influences, *Los Baños, Laguna, Philippines*

Li-Cor 6400XT: Portable Photosynthesis System – Li-Cor Biosciences **2008**
Measurement of Gas Exchange and Fluorescence, Soil Surface CO_2 Efflux Chamber, *Lincoln, Nebraska*

UNIVERSITY HOME AND STATE-BASED TRAINING:

***University of Nebraska-Lincoln* /*Nebraska*:**

Faculty-Led Inquiry into Reflective and Scholarly Teaching (FIRST) Project **2023-present**
University of Nebraska-Lincoln
Fall 2023 Cohort Member. Professional development program that works to document, assess, and research student learning and Scholarly Teaching engagements. Formerly known as the Peer Review of Teaching Project. *Lincoln, Nebraska*

Roads Scholar Tour 2023 – University of Nebraska-Lincoln **2023**
A 3-day bus trip (1,053 miles) across Nebraska, hosted by the IANR Vice Chancellor's Office. Offers new faculty the opportunity to engage with leadership and colleagues, learn about UNL Research and Extension Centers, and discover the rich history of Nebraska. *Included various Extension Centers and locations across Nebraska*

Plant to Table – The Center for Great Plain Studies – University of Nebraska-Lincoln **2023**
48th Annual interdisciplinary conference. The 3-Day conference focused on Indigenous food sovereignty movements; the long-standing significance of the meatpacking industry; related topics of labor, immigration, and health and safety standards; and the environmental impacts of food production and consumption.

Innovation Approaches to Enhancing Agriculture Resilience – UNL Center for Resilience **2022**
Half-day workshop hosted by the Center for Resilience in Agricultural Working Landscapes (CRAWL). The event featured presentations and discussions exploring how the 'resilience approach' has permeated the water, food, and energy nexus, and how to operationalize resilience today to adapt to the production uncertainties of the future.

***North Dakota State University* / *North Dakota*:**

North Dakota General Education Summit **2019**
Meeting on the assessment of general education outcomes in both academic and co-curricular settings, including sessions led by Higher Learning Commission (HLC) Peer Reviewers. Hosted by the North Dakota General Education Council. North Dakota State University. Workshop: October 18, 2019. *Fargo, North Dakota*

Search Committee Training – North Dakota State University (2017,2021) **2017**
Training to conduct proper employee search committees, *Fargo, North Dakota*

Institutional Review Board (IRB) Training and Certification – North Dakota State University **2017**
(Project Lead) Training and Certification to Conduct Human Behavioral Research, *Fargo, North Dakota*

Prevention Policy Development and Clean Hotels Workshop – Rape Abuse and Crisis Center **2015**
Workshop on Domestic and Sexual Violence Policy Change and Coaching for Change, Training by the Gender Violence Institute of Minnesota, *Fargo, North Dakota*

Giving + Learning Tutoring Low-Level English Learners – North Dakota State University **2014**
Workshop on Teaching English to Illiterate, Non-Native Refugees, Training by the Minnesota Literacy Council, *Fargo, North Dakota*

Refugee Youth Mentor Training and Certification – African Initiative for Progress **2014**
Training to Conduct Academic Tutoring and Supportive Mentoring, African and Asian High School Students in Cass and Clay Counties, *Fargo, North Dakota*

Institutional Review Board (IRB) Training and Certification – North Dakota State University **2014**
Training and Certification to Conduct Human Behavioral Research, Observing Refugees who are English Language Learners (ELL), *Fargo, North Dakota*

Soil Health in the Red River Valley Technical Workshop – North Dakota State University **2013**
North Dakota Soil and Water Conservation, Professional Soil Classifiers Association of North Dakota, *Fargo, North Dakota*

***Iowa State University* / *Iowa*:**

Iowa Learning Farms / *Water Rocks!* Creative Training – Iowa State University **2013**
Iowa State University Extension Education Retreat, *Woodward, Iowa*

Conservation Districts of Iowa Commissioner Conference – Conservation Districts of Iowa **2013**
Training in Soil Health, Tile Drainage, and Cover Crops, *Des Moines, Iowa*

***University of Arkansas* / *Arkansas*:**

Arkansas Soil Classification Review Training – Boonville Plant Materials Center **2012**
Arkansas Association of Soil Classifiers Meeting, *Booneville, Arkansas*

MILITARY TRAINING CERTIFICATIONS:

United States Navy **1996-2000**

Ship's Service Telephone System Technician (1998) *San Diego, California*
Shipboard Fire Fighting Team (1997, 1998, 2000) *Bremerton, Washington*
MK-19 Gyrocompass Systems Technician (1997) *Great Lakes, Illinois*
Interior Communications Electrician (1997) *Great Lakes, Illinois*
First Aid and CPR (1996, 1997, 1998, 1999) *Great Lakes, Illinois*
Basic Military Training (1996) *Great Lakes, Illinois*

AWARDS AND RECOGNITIONS:

Mandela Washington Reciprocal Exchange Award **2024**
Award through the United States Department of State and IREX. Support for continued professional development of Mandela Washington Fellow (MWF) Alumni—the flagship program of the U.S. Government's Young African Leaders Initiative (YALI) and country-based development. Project is in collaboration with MWF Fellows Ester Magano Hango and Hilde Amushembe. May 1-14, 2024. Windhoek and Ondangwa, Namibia. ($5000)

Association of American Colleges and Universities (AAC&U) Travel Award **2019**
Funds were provided to be part of the Knowledge Exchange Institute, which is an NSF-funded program to increase diversity in STEM fields. All travel to and from Washington, D.C., hotel, food, and training materials were covered. May 20-24, 2019, Alexandria, Virginia.

Veteran Alliance Organization (VALOR) Hon. Mention, NDSU Advancing Inclusion Group Award **2019**
(2018-2019 Academic Year). In the group awarded, I serve as the Chair of Faculty and Staff Training related to teaching student Veterans, which includes all Veterans of the military, active-duty service members, reservists, and members of the National Guard.

United States Agency for International Development (USAID) Travel Scholarship **2014**
Funds for travel via Catholic Relief Services to present agricultural development research at the ASA-CSSA-SSSA International Annual Meetings in Long Beach, California ($300)

University of Arkansas Graduate School Travel Scholarship **2012**
Funds for travel to present dissertation research at the ASA-CSSA-SSSA International Annual Meetings in Cincinnati, Ohio ($1000)

Outstanding Ph.D. Graduate Student Award **2012**
University of Arkansas, Department of Crop, Soil and Environmental Sciences (Awarded April 2012)

Abstract to Contract Graduate Research Symposium Poster Competition – 2nd Place **2012**
University of Arkansas Graduate School ($100)

National Science Foundation (NSF) Scholarship via ADVANCE Program Scholarship **2011**
Funds to attend the *Negotiating the Ideal Faculty Position* workshop at Rice University in Houston, Texas (Covered lodging, transportation, and provisions)

University of Arkansas Graduate School Travel Scholarship **2011**
Funds for travel to present dissertation research at the International Symposium on Soil Organic Matter in Leuven, Belgium ($1000)

National Science Foundation (NSF) Scholarship **2010**
Funds to attend the *Rice: Research to Production* short course at the International Rice Research Institute (IRRI) in Los Baños, Laguna, Philippines via NSF Grant recipient PI Dr. Susan McCouch, Cornell University (Covered all course fees, lodging, transportation, and provisions)

Spooner Scholarship **2010**
University of Arkansas, Department of Crop, Soil and Environmental Sciences Scholar Award; Funds for travel pertaining to dissertation research to the Natural Resource Ecology Laboratory (NREL) at Colorado State University in Fort Collins, Colorado; Modeling C and N cycling in rice crop rotations using Century and DayCent ($2000)

PUBLIC SERVICE AND OUTREACH:

Fargo-Moorhead-West Fargo Chamber of Commerce – NDSU Representative **2019-2021**
Engagement with the local North Dakota-Minnesota professional and business community through meetings and community interactions. Representative through the North Dakota State University's President's Office.

Advisory Board Member and Chair of Training Committee – Veteran's Alliance Org. (VALOR) **2018-2022**
Board Member and Chair of the Training and Outreach Committee – Provide guidance to military veterans in postsecondary education at North Dakota State University and training to university faculty and staff on collaborating with military veterans. The mission of VALOR is to improve campus climate for student Veterans and enhance their success. The term "student Veterans" refers to, and encompasses, all Veterans of the military, active-duty service members, reservists, and members of the National Guard.

Volunteer Recruitment and Mentor –Farmer-to-Farmer Program in East Africa **2014-2019**
Catholic Relief Services and USAID **–** Provided Recruitment and Guidance to Agricultural Volunteers; Recruited Volunteers:
- ***Zachary Rada*** – Farm Business Manager, Ridgewater College, Willmar, Minnesota. Assignment: Farm Management Training, *Tanzania*, 2014
- ***Mahnaz Harrison*** – President and CEO of Last Mile 4D, Washington, D.C. Assignment: Financial and Business Development in Iganga, *Uganda*, 2015
- ***Joseph Alfonso*** – Recently Graduated Entomology Master's Student, Fargo, North Dakota. Assignment: Agricultural Pest Management in *Ethiopia*, 2015

Academic and Personal Mentor – African Initiative for Progress **2014-2016**
New American High School Students, *Fargo, North Dakota*

Committee Member – Women's Rape and Abuse Crisis Center **2015-2019**
Foundations Committee – Sexual Assault and Domestic Violence Prevention, Logic Model Planning Committee; Planning Objectives for Organizational Goals, *Fargo, North Dakota*

River Volunteer – River Keepers **2014-2016**
Little Fishermen's Derby and Fundraising Events, *Fargo, North Dakota*

Academic Mentor and Volunteer – Giving + Learning **2014-2018**
English Language Tutoring to African Refugees and Multicultural Activities, *Fargo, North Dakota*

Academic Mentor – Military Veterans Recovery Center **2013**
Alvin C. York Campus, Tennessee Valley Veteran Hospital Campus, assisted military veterans with PTSD and other mental disorders reintegrate back into society, specifically providing academic guidance and tutoring to higher education students, *Murfreesboro, Tennessee*

Race Organizer – Dairy Hill Stampede 5K and Family Fun Run **2013**
Assisted in race directing duties associated with the fundraising event, Middle Tennessee State University, School of Agribusiness and Agriscience, proceeds benefitting the Farm Animal Care Coalition of Tennessee and the Veteran's Recovery Council, *Murfreesboro, Tennessee*

Instructor of Soil Profile Descriptions – Environmental and Agricultural Sustainability Field Trip **2012**
Crop, Soil and Environmental Sciences Sponsored High School Student Field Day, University of Arkansas, Arkansas Agricultural Experiment Station, *Fayetteville, Arkansas*

Photographer – *Soils in Arkansas* Book **2012-2013**
Landscape and Soil Profile Photographer for *Soils in Arkansas* (Brye et al., 2013), *Fayetteville, Arkansas*

Race Organizer and Director – Down & Dirty 5K / Clean & Green 1-Miler **2010-2013**

Initiated and continued annual Graduate Student Association (CSES-GSA) fundraising event

Raised over $2100 in October 2010; Proceeds benefitting CSES-GSA

Raised over $4200 in October 2011; Proceeds benefitting the Emily Grace Stiegler Scholarship

Raised over $3600 in October 2012; Proceeds benefitting the Jack Pijanowski Scholarship

Fayetteville, Arkansas

RESEARCH INTERESTS (KEYWORDS):

Agricultural Production Systems, Conservation Strategies, Field Crop Management, Agriculture Literacy, Engineering Skill Attainment, Global Food Security, International Agriculture, Ecological/Economic/Social Impacts of Climate Change, Food Sovereignty, Indigenous Food Systems, Soil Physics, Agroecosystem Ecology, Biogeochemical Cycling in Terrestrial Ecosystems, Teaching and Learning, Postsecondary Educational Structures, Educational Assessment, STEM Instruction, Field Mechanics, Electrical Metering Devices, Remote Sensors, Student Success and Retention, Data Analytics, Workforce Development, Underrepresented Student Inclusion, Postsecondary Faculty Development, Engaged Learning, Extension Outreach, Soil Organic Matter Dynamics, Soil Respiration, Water-Stable Soil Aggregation, Soil Water Infiltration and Storage, Agricultural Community Resilience, Population Ecology, Natural Resource Management, Rice-Based Cropping Systems, Small-Holder Farming, Postharvest Grain Losses, Sociocultural Anthropology, Infrastructure Development, Flood-Irrigation, Computer Modeling of Natural and Agroecosystems

GRANTS, RESEARCH PROJECTS, AND INTERNATIONAL DEVELOPMENT PLANS:

2023 **Mandela Washington Fellowship (MWF) Reciprocal Exchange Project | Resilient Agriculture in Namibia: A Study-Abroad Program Design for University of Nebraska Students.**

Investigators/Project Team: **Jill M.D. Motschenbacher**, Ester Magano Hango, and Hilde Amushembe. The project is a collaborative effort to form a working partnership between two Mandela Washington Fellowship Alumni (Ester Magano Hango and Hilde Amushembe, Windhoek and Ondangwa, Namibia) and U.S. professional (Jill Motschenbacher, University of Nebraska-Lincoln). The project is intended to design a new study-abroad program with University of Nebraska-Lincoln students in Agriculture, Biosystems Engineering, and Natural Resource Science (starting in Summer 2025) with the Namibia University of Science and Technology and the Okatyali Biodiversity Campsite and Multiservices Center. During this planning and development phase, professional and scientific knowledge between the U.S. Participant, Fellowship Alumni Collaborator, and staff and academics at the Okatyali Biodiversity Campsite and Multiservices Center will occur. Knowledge exchange will focus on the best practices in sustainable agriculture, agroecosystem design, and eco/agritourism as coping mechanisms to climate change and to assist the rural community in building resilience. Specific development efforts will also work on increasing extension-based efforts of the Center to better target local women agriculture producers and communities, build international agriculture-based curriculum, and to provide a foundation for grant funding that supports agriculture resilience initiatives and study-abroad experiences for students. Project dates: May 1-14, 2024. Submitted 11/10/2023. Unted States Department of State – Young African Leaders Initiative (YALI) **(Funded: $5,000)**

2022 **American Council for International Education (American Councils) | Salinization in Agriculture: Enhancing Research Collaborations and Curriculums in Kazakhstan.**

Investigators: A. Daigh (PI), D. Snow (co-PI), **J. Motschenbacher (co-PI)**, A. Malakar (Co-PI), D. Rudnick (Co-PI). The project aims to 1) increase research collaboration in agriculture, and 2) modernize the existing curriculum in agriculture for the 2022-2024 U.S.-Kazakhstan University Partnership Grants Program. Teams of agricultural and water scientists from Korkyt ata Kyzylorda University, M.Kh. Dulaty Taraz Regional University, Al Farabi Kazak National University, and the University of Nebraska-Lincoln will

develop a short course (virtual) and workshop (in-person) and perform field investigations on practical issues associated with soil and water salinization, agricultural water management, and environmental quality. Co-PI Motschenbacher role is to share the responsibility of overseeing the overall project management and will lead the curriculum, assessment, and research development related to agricultural conservation practices and adoption. Submitted 12/16/22. 1-year **(Not-funded: $24,000)**

2021 NSF | REU Site: Introducing Smart Nanostructured Materials to Native American Students for Monitoring the Health Quality and Energy Efficiency of Enclosed Living Spaces.

Investigators: Zhibin Lin (PI), Danling Wang (co-PI), **Jill M. D. Motschenbacher (Senior Personnel)**, and Qifeng Zhang (Senior Personnel). The proposed National Science Foundation (NSF) Research Experiences for Undergraduates (REU) Site will offer a 3-year REU program within the Department of Construction and Environmental Engineering to mentor 10 undergraduate researchers (UGRs), of Native American heritage, per year in a 10-week duration summer program with aims to provide Native American undergraduate students hands-on experience in novel functionalized nanomaterials and smart device research, which can ignite their interest in STEM careers and develop an understanding on how these technologies can improve the health and living environments of Native American communities. Submitted 8/24/21. NSF REU Site, 3-years. **(Not Funded: $385,806)**

2021 NSF | CAREER Grant for Dr. Adam Gladen - Educational Development Support.

Department of Mechanical Engineering, North Dakota State University. *CAREER: Storing Solar Energy through the Catalytic Torrefaction of Biomass in Molten Salts.* Funding to support the Office of Teaching and Learning support. **(Not Funded: $13,000)**

2020 State of North Dakota | North Dakota Governor's Emergency Education Relief Fund (GEER) – Higher Education COVID Modified Learning and Workforce Grants.

Investigators: **J.M.D. Motschenbacher (PI)** and M. Fitzgerald (Co-PI and Provost). Proposal submitted for the Governor's Emergency Education Relief (GEER) Funds, in response to the COVID-19 pandemic. The key aim of the request is to provide immediate Continuing Education instructional support for K-12 teaching professionals throughout the state of North Dakota by: 1) Subsidizing over 3100 Continuing Education course credit fees for K-12 educators across the Spring, Summer, and early-Fall 2021 semesters; and, 2) Funding the development of 30 new Continuing Education courses, from NDSU faculty members, for the Summer and early-Fall 2021 semesters. The project aims to increase intellectual capital of North Dakota's K-12 educational system and serve the K-12 teaching workforce by offering no-cost access to essential training, timely support, and career-advancing credentials sanctioned through NDSU. Funding from the GEER grant provided NDSU faculty and professional personnel with monetary compensation to develop 30 classes for K-12 educators across multiple disciplines to ease burdens caused by the COVID-19 pandemic, strengthen educational subject selection, impact workforce development, and provide sustainable instructional opportunities for NDSU. **(Funded: $110,000)**

2020 USDA NIFA | Advocates and Allies: Transformational Praxis for Campus-Wide Intersectional Gender Justice.

Investigators and Leadership Team Members: C. Bilen-Green (PI), D.A. Voldseth-Prischmann, C. Anicha, A. Denton, J. Jenson, C. Ray, A. Graham-Bertolini, **J.M.D. Motschenbacher**, J. Nash, A. Burnett, R. Green, and A. Bachman. The proposed project created peer-led workshops and convenings pertaining to men's roles in the perpetuation and undoing of gendered inequities and produce policy/practice that promotes intersectional gender justice. This praxis is to increase women's power and influence through representation of women in senior/leadership roles, thereby narrowing wage and wealth gaps. Funding agency: United States Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA). **(Not Funded: $10,000,000)**

2020 USDA NIFA | New Beginnings: Making Good: Delivering Educational Equity for & With Tribal Students & Communities.

Investigators and Leadership Team Members: C. Bilen-Green (PI), J. Wallette, C. Stoltenow, L. Flage, C. Anicha, R. Danielson, L. Oster-Aaland, K. Sassi, **J. Motschenbacher**, J. Nash, H. Keeler. This project focuses on creating an institutional framework that will offer tribal students the opportunities of higher education and provide a holistic support system to ensure their success. The framework will be based on a needs assessment of key tribal stakeholders and an internal assessment of NDSU. The project will provide

education and training to NDSU faculty and staff and to and to attract tribal students, through scholarships, cohort support, housing, transportation offers. Students will have full support in overcoming educational hurdles and personal needs. The project focuses on providing holistic experiences by bringing together tribal-focused departments and programs already in place at NDSU. Funding agency: United States Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA). **(Funded with matching costs; Total: $278,599)**

2020 Howard Hughes Medical Institute | Inclusive Excellence (ie3) Grant Pre-Proposal for North Dakota State University.

Investigators and Leadership Team members: **J.M.D. Motschenbacher (Program Director and Acting Director – Office of Teaching and Learning),** M. Fitzgerald (Interim Provost and Dean - College Human Sciences and Education); K. Grafton (Former Interim Provost, Vice-President - Agricultural Affairs, Dean - College of Agricultural, Food, and Natural Resource Sciences, and Director - North Dakota Extension); L. Oster-Aaland (Vice-Provost - Student Affairs and Enrollment Management); C. Bilen-Green (Vice-Provost - Faculty Affairs and Equity); E. Berg (Director - Institutional Research and Analysis); C. Peterson (Interim Dean of Students and Director - Student Success), C. Brown (Inclusive Excellence Initiatives Coordinator), and J. Boyer (Director - Assessment and Accreditation). *Program Director and Institutional Applicant Representative.* Pre-proposed grant initiative to meet 'Inclusive Excellence' standards across the North Dakota State University campus through institutional inclusivity transformation, with an emphasis placed on the school- and department-level governance. HHMI ie3 Grant length: 5 years. **(Not Funded: $1,000,000)**

2018 NSF | IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies.

Investigators: J. Wang (PI) (PI, South Alabama University), **J.M.D. Motschenbacher (co-PI) (PI, North Dakota State University; $62,944)**, and K. Hartman/A. Finley (co-PI) (PI, Nueta Hidatsa Sahnish College). *Co-Principle Investigator overall Grant, Principal Investigator at NDSU.* Funding agency: National Science Foundation (NSF) International Research Experiences for Students (NSF: IRES). Twelve Native American students from five Tribal Colleges in the state of North Dakota will participate in a six-week summer program over the course of three years. Each year, four students will participate in one week of pre-training in the U.S. and then visit and study at the host University in Beijing, China for five weeks, with a Covid accommodations location change to Mobile, Alabama in 2022. Student cohorts focused on building and assessing an Internet of Things (IoT)-enabled environmental monitoring system and Artificial Intelligence (AI)technology. The program provided students with training and mentoring in international-based engineering applications, environmental monitoring and protection, and improvement of specialized environmental management in the remote areas. NSF Grant length 7/2018-8/2022 (2-year extension to 2023 for Covid-19 interruptions). **(Funded: $299,919)**.

2018 NSF | CAREER Grant for Dr. Na Gong - Educational Development Support.

Department of Electrical and Computer Engineering, North Dakota State University. *CAREER: Know your data: Enabling data-informed efficient memory hardware for edge computing.* **(Not Funded)**

2018 NSF | CAREER Grant for Dr. Zhibin Lin - Educational Development Support.

Department of Civil and Environmental Engineering, North Dakota State University. *CAREER: Structural and thermodynamic properties of multifunctional dynamic breathing building envelopes for high performance buildings.* **(Not Funded)**

2017 NDSU Alumni Association | Virtual Reality Inclusive Curriculum.

Investigators: J.A. Faris, (PI) and **J.M.D. Motschenbacher (Educational Evaluator)**. Funding Agency: North Dakota State University Foundation and Alumni Association's Impact Fund Grant. An educational initiative to provide accessible experimental learning to the campus community through advanced visualization and simulation tools using Virtual Reality. Funding provided the placement of four Virtual Reality learning stations in the Memorial Union for faculty teaching, professional training, student recreation, and cross-disciplinary projects. Evaluation is conducted on usage statistics, learning impacts, and user response. Grant length: 2018-2019. **(Funded: $19,522)**.

2017 NSF | IUSE Scholarship-ND: An Institutional Model for STEM Faculty Training in the Scholarship of Teaching and Learning.

Investigators: **J.M.D. Motschenbacher (PI)**, M. Kryjevskaia (co-PI), J. Nyachwaya (co-PI), J. Ladbury (co-PI), and C. Hargiss (co-PI) . Funding agency: National Science Foundation (NSF): Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR). Faculty development program to develop and implement a transformative and adaptable model of faculty training in the Scholarship of Teaching and Learning (SoTL), systematically investigate the effectiveness of this training model, and disseminate the results to help implement and adapt the model for use in other institutions. North Dakota State University. Proposed NSF grant length: 7/2018-6/2023. **(Not Funded - $2,948,405)**.

2017 NSF | IUSE Gateways-ND: Advancing Learner-Focused Instruction to Catalyze Student Success.

Investigators: P. Kelter (PI), J. Ladbury (co-PI), M. Montplaisir (co-PI), J. Nyachwaya (co-PI/PI), Mark Hanson (co-PI 2015-2018) and **J.M.D. Motschenbacher (co-PI: 2017-2021)**. Funding agency: National Science Foundation (NSF): Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR). Gateways-ND was a faculty and instructional staff development program that offered training and support in learner-focused teaching practices to STEM educators at North Dakota State University (NDSU). The 2-year cohorts included both STEM and non-STEM participants. The 170+ faculty that were trained helped change the culture of STEM education by impacting teaching and learning practices and beliefs among NDSU faculty, staff, and administration. Overall, classes became more active for students through reduced lecture time and increased group work. NSF Grant length: 8/2015-7/2020 (1-year extension to 2021 for Covid-19). **(Funded: $2,632,673)**.

2016 NSF | IUSE Frameworks-ND: Long-Term Collaborative Frameworks among all North Dakota Campuses for STEM Student Success.

Investigators: Kelter, P. (PI), **J.M.D. Motschenbacher (co-PI and Primary Grant Writer and Coordinator)**, J. Carmichael (co-PI), S. Marcotte (co-PI), and S.R. Sletten (co-PI). Funding agency: National Science Foundation (NSF) Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR). A three-year project that will expand the work of a recently formed coalition composed of 15 North Dakota's 18 postsecondary institutions (PSIs), representing over 98% of the state's college student population, in the service of expansive, long-term active learning-based STEM educational improvement. The model includes a program of statewide organizational collaboration, professional development, faculty learning communities, and research, along with a focus on effective evaluation, as foundations of successful long-term systemic change in STEM instruction. Proposed NSF grant length: 7/2017-6/2020. **(Not Funded: $2,988,499)**.

2015 USDA NIFA | Soil Health and Water Quality Impacts of Growing Energy Beets for Advanced Biofuel Production in North-Central United States.

Investigators: Z, Lin (PI), B. Schatz, D. Ripplinger, M. Ostlie, J. Teboh, A-M Fortuna (2013-2015), and **J.M.D. Motschenbacher (co-PI)**. Funding agency: United States Department of Agriculture (USDA), National Institute of Food and Agriculture (NIFA). Assessment of the effects energy beet production systems have on soil health by mitigating soil salinity and improving the yields of rotational crops. Individual project responsibilities involved directing all aspects of soil biological measurements, their collection, processing, and statistical analysis. Other duties included supervising a technician in developing protocols for plant and soil sampling analyses, establishing protocols and schedules for conducting biological measurements of soil health and plant tissue sampling. NIFA Grant length: 9/2013-8/2018. **(Funded: $443,709)**.

2014 USAID | Preventing Postharvest Grain Losses: Improving Handling and Storage for Maize Farmers in Iganga, Uganda.

Investigator: **J.M. Motschenbacher (PI)**. Funding Agency: United States Agency for International Development (USAID) through the Catholic Relief Services (CRC), and in association with Namungalwe Area Cooperative Enterprise (ACE). Assessment of the postharvest handling and storage practices and improve farmers' knowledge in preventing farm maize losses. Technical support was provided in postharvest processes such as maturity indices, drying, storage, quality control and assurance, control of storage pests, cost effective storage facilities, how insects and molds contribute to storage losses, aflatoxin development in the field and in storage, and the relationship between grain and food quality. USAID project length: 4/2014-4/2015. **(Funded: All Costs for Development Project: Iganga, Uganda)**.

2014 Bush Foundation | From Fire to Fire: Examining the Complexity of Learning for Refugee Adult English Learners.

Independent Community Literacy Researcher. Funded through the Bush Foundation and North Dakota State University via PI, K. Brooks. Volunteered time to study problems associated with learning English as a foreign national adult learner and specializing in adult African refugees who are English Language Learners (ELL). Problems addressed include learning barriers, long-standing health complications, and mental impediments associated with emotional and geographic transitions. Research project length: 3/2014-3/ 2017. **(Volunteered with Funded Research Expenses)**.

2013 Iowa State University | Evaluating Planting Techniques for the Successful Establishment of Cover Crop Mixtures and Single Varieties in Iowa.

Postdoctoral Researcher. Funding agency: Iowa State University Department of Agricultural and Biosystems Engineering and Iowa State Extension Service. Evaluation of seeding techniques that will increase fall cover crop growth, reduce nutrient losses, improve water quality, and enhance soil health. The project involved scientific research and extension outreach education programs. The expectation is to reduce nitrate runoff through farmland tile-drainage to the Mississippi River Basin, which ultimately leads to hypoxia in the Gulf of Mexico, and to increase soil organic matter for long-term production system sustainability. Measured observations: Soil C and N, biomass production, soil chemical properties, water infiltration rates, and soil compaction (bulk density). Research project length: 8/2013-12/2013. **(Funded: All Associated Costs)**.

2013 USAID | Effects of Mechanization of Rice Production and Harvesting Systems in the Mwea Irrigation Scheme of Wang'uru, Central Province, Kenya.

Investigator: **J.M. Motschenbacher (PI)** and Research Project Scientist, May 2013 – May 2014. Funding agency: United States Agency for International Development (USAID) through the Citizen's Network for Foreign Affairs (CNFA), and in associated with the Mwea Rice Growers Multipurpose (MRGM) Cooperative Society. Assessment on the mechanization of rice production systems within the Mwea Irrigation Scheme in the Central Providence in Kenya. Project goal was to evaluate and develop a plan and clear implementation steps that will boost mechanization in rice production and harvesting systems for MRGM. The ultimate expectation is to increase production through timely farm operations, reducing losses, reducing the cost of operations by ensuing better management of costly inputs, and encouraging the productivity of natural resources while ensuring agriculture sustainability. USAID project length: 8/2013-12/2013. **(Funded: All Costs for Development Project: Wang'uru, Kenya)**.

2010 Arkansas Corn and Grain Sorghum Promotion Board | Long-Term effects of Corn Rotations and Production Practices on Soil Carbon and Soil Fertility in a Silt-Loam Soil.

Co-Primary Investigator. Funding agency: Arkansas Corn and Grain Sorghum Promotion Board. Evaluation of corn-based rotations, tillage, and nutrient application on soil carbon sequestration and nutrient cycling. Grant Length 7/2010-7/2011. **(Not Funded)**.

2009 EPA | Long-Term effects of Rice-Based Crop Rotation, Tillage, and Fertility on Near-Surface Soil Carbon Cycling and other Soil Properties.

Primary Investigator. Funding agency: Environmental Protection Agency (EPA) STAR Fellowship Program. Received two "Outstanding" evaluations on proposal assessment. **(Not Funded)**.

2008 University of Arkansas | Long-Term effects of Rice Rotation, Tillage, and Fertility on Near-Surface Soil Carbon and Nitrogen Cycling.

Doctoral Research Scientist – Dissertation Research. Funding agency: University of Arkansas. Field research location: Rice Research and Extension Station, Stuttgart, Arkansas. Evaluation of rice-based crop rotations (with continuous rice, soybean, corn, and winter wheat), tillage treatments (conventional tillage and no-tillage), fertility regimes (optimal and sub-optimal), and soil depth (0- to 10-cm and 10- to 20-cm) on C and N cycling, and soil physical and chemical properties, over 12 years (1999-2011). Measured observations: Soil organic matter dynamics, biomass production, soil nutrient cycling, soil chemical properties, water stable aggregates and their associated C and N contents, soil surface CO_2 flux, and soil compaction (bulk

density and penetration resistance). Modeling observations: Data used to model and compare measured observations using the Century Model. Project length: 8/2008-2/2013. **(Funded: All Associated Costs)**.

2008 University of Arkansas | Long-Term effects of Alternative Management Practices in a Wheat-Soybean, Double-Cropped Production System.

Doctoral Research Scientist - Assisted doctoral advisor in field research. Funding Agency: University of Arkansas. Research location: Lon Mann Cotton Research Station, Marianna, Arkansas. Coordinated and Directed Infiltration Experiments. Evaluation of a long-term (11 years; 2001-2012) wheat-soybean double-cropped production system using different tillage treatments (conventional tillage and no-tillage), burn management (burn and no burn), nitrogen fertilizer treatments, and irrigation regimes (irrigated and non-irrigated). Measured observations: Biomass production, soil nutrient cycling, soil chemical properties, water infiltration rates (double-ring and mini-disk infiltrometer), soil surface CO_2 flux, and soil compaction (bulk density). Project length: 8/2008-2/2013. **(Funded: All Associated Costs)**.

PUBLICATIONS AND REPORTS:

PEER-REVIEWED PUBLICATIONS:

1. **Motschenbacher, J.M.D.**, J. Wang, and. A, Finley. 2023. Native American Student Research Experiences in IoT-Enabled Environmental Monitoring Technologies: An Analysis of North Dakota Tribal Student Experiences in Beijing, China and Mobile, Alabama. *American Society of Engineering Educators (ASEE) 2023 Conference Proceedings, Baltimore, Maryland.*
2. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2022. International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. *American Society of Engineering Educators (ASEE) 2022 Conference Proceedings*, *Minneapolis, Minnesota.*
3. **Motschenbacher**, **J.M.D.**, E.A. Berg, J. Ladbury, J. Nyachwaya, L. Montplaisir, and P. Kelter. 2020. Gateways-ND: Demonstrating Institutional Change in STEM Teaching and Learning within North Dakota State University. *American Society of Engineering Educators (ASEE) 2020 Conference Proceedings*, *Montreal, Quebec, Canada.* (Canceled due to COVID-19)
4. Wang, J. and **J.M.D. Motschenbacher**. 2020. IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. *American Society of Engineering Educators (ASEE) 2020 Conference Proceedings, Montreal, Quebec, Canada.* (Canceled due to COVID-19)
5. **Motschenbacher, J.M.D.**, M. Vosen Callens, J. Nyachwaya, E, Berg, J. Ladbury, R. Reichenbach, and P. Kelter. 2019. Gateways-ND: Building the Institutional Infrastructure towards Viable Postsecondary STEM Education Reform. *American Society of Engineering Educators (ASEE) 2019 Conference Proceedings, Tampa, Florida.*
6. Vosen Callens, M., P. Kelter, **J.M.D. Motschenbacher**, J. Nyachwaya, J. Ladbury, and A. Semanko. 2019. Developing and Implementing a Campus-wide Professional Development Program: Successes and Challenges. *Journal of College Science Teaching* 49(2): 68-75. doi: 10.2505/4/jcst19_049_02_68
7. **Motschenbacher, J.M.D.**, R. Reichenbach, M. Hanson, E.A. Berg, J. Ladbury. P. Kelter. L. Montplaisir, and J. Nyachwaya. 2018. Gateways-ND: Advancing Learner-Focused Instruction to Catalyze STEM Student Success. *American Society of Engineering Educators (ASEE) 2018 Conference Proceedings, Salt Lake City, Utah.*
8. Brye, K.R., R.L. McMullen, M.L. Silveria, **J.M.D. Motschenbacher**, S.F. Smith, E.E. Gbur, and M.L. Helton. 2015. Environmental controls on soil respiration across a southern climate gradient: A meta-analysis. *Geoderma Regional* 7:110-119.
9. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur, N.A. Slaton, and M.A. Evans-White. 2015. Daily soil surface CO_2 flux during non-flooded periods in flood-irrigated rice rotations. *Agronomy for Sustainable Development* 35:771-782. doi: 10.1007/s13593-014-0278-6
10. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, and E.E. Gbur. 2014. Long-term rice rotation, tillage, and fertility effects on chemical properties in a silt-loam soil. *Nutrient Cycling in Agroecosystems* 100:77-94. doi: 10.1007/s10705-014-9628-7
11. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur, N.A. Slaton, and M.A. Evans-White. 2014. Long-term crop rotation, tillage, and fertility effects on soil carbon and nitrogen in dry-seeded, delayed-flood rice production systems. pp. 129-156. *In* C.R.V. Morgado and V.P.P. Esteves (eds.). CO_2 Sequestration and Valorization. InTech Europe. doi: 10.5772/57064
12. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur, N.A. Slaton, and M.A. Evans-White. 2013. Rice rotation and tillage effects on water-stable soil macroaggregates and their associated carbon and nitrogen contents in a silt loam soil. *Soil Science* 178:596-611. doi: 10.1097/SS.0000000000000028

13. **Motschenbacher, J. M.**, K.R. Brye, and M.M. Anders. 2011. Long-term rice-based cropping system effects on near-surface soil compaction. *Agricultural Sciences* 2:117-124. doi: 10.4236/as.2011.22017

EDUCTION, EXTENSION, AND MEDIA PUBLICATIONS:

1. Daigh, A.L.M. and **J.M.D. Motschenbacher**. 2017. Breaking Tradition to Create Self-Motivated, Collaborative Students. Soil and Agronomy (CSA) News Magazine, October issue. 62(10):33-34
2. Welker, E., **J.M.D. Motschenbacher**, and P. Kelter. 2017. Classroom design manual: Guidelines for creating and remodeling learning spaces. Provost Office and the Office of Teaching and Learning. North Dakota State University.
3. **Motschenbacher, J.M.D.** 2015. Bringing the passion back: Using your expertise to gain experience, improve motivation, and create real change in global agriculture. Soil and Agronomy (CSA) News Magazine, April issue. 60(4):34-35
4. **Motschenbacher, J.M.** 2014. A glimpse at a typical first week in the life of a Farmer-to-Farmer volunteer: A personal diary. United States Agency for International Development (USAID), Catholic Relief Services (CRS) Blog, Farmer-to-Farmer Program.
5. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, and E.E. Gbur. 2012. Soil surface CO_2 flux as affected by rice-based rotation and tillage. *B.R. Wells Rice Research Studies 2011*, University of Arkansas Agricultural Experiment Station Publication, Research Series 591.
6. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, and E.E. Gbur. 2012. Water-stable soil aggregation in rice-based crop rotations. *B.R. Wells Rice Research Studies 2011*, University of Arkansas Agricultural Experiment Station Publication, Research Series 591.
7. **Motschenbacher, J.M.**, K.R. Brye, and M.M. Anders. 2011. Bulk density as affected by rice-based cropping systems. *B.R. Wells Rice Research Studies 2010*, University of Arkansas Agricultural Experiment Station Publication, Research Series 591.

GRANT PROGRESS REPORTS:

1. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2023. NSF | IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. –2023 Annual Report. (No-Cost Ext.)
2. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2022. NSF | IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. –2022 Annual Report. (Covid-19 Ext.)
3. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2021. NSF | IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. –2021 Annual Report (Covid-19 Ext.)
4. Kelter , P., J. Ladbury, L. Montplaisir, J. Nyachwaya, and **J.M.D. Motschenbacher**. 2021. NSF | IUSE Gateways-ND: Advancing Learner-Focused Instruction to Catalyze Student Success. –2021 Annual Report
5. **Motschenbacher, J.M.D** and M. Fitzgerald. 2021. State of North Dakota | North Dakota Governor's Emergency Education Relief Fund (GEER) – Higher Education COVID Modified Learning and Workforce Grants. – 2021 Annual Report
6. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2020. NSF | IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. –2020 Annual Report.
7. Kelter , P., J. Ladbury, L. Montplaisir, J. Nyachwaya, and **J.M.D. Motschenbacher**. 2020. NSF | IUSE Gateways-ND: Advancing Learner-Focused Instruction to Catalyze Student Success. –2020 Annual Report
8. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2019. NSF | IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. –2019 Annual Report.
9. Kelter , P., J. Ladbury, L. Montplaisir, J. Nyachwaya, and **J.M.D. Motschenbacher**. 2019. NSF | IUSE Gateways-ND: Advancing Learner-Focused Instruction to Catalyze Student Success. –2019 Annual Report.
10. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2018. NSF | IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. –2018 Annual Report.
11. Kelter , P., J. Ladbury, L. Montplaisir, J. Nyachwaya, and **J.M.D. Motschenbacher**. 2018. NSF | IUSE Gateways-ND: Advancing Learner-Focused Instruction to Catalyze Student Success. –2018 Annual Report.

PRESENTATIONS:

1. **Motschenbacher, J.M.D.**, J. Wang, and. A, Finley. 2023. Native American Student Research Experiences in IoT-Enabled Environmental Monitoring Technologies: An Analysis of North Dakota Tribal Student Experiences in Beijing, China and Mobile, Alabama. *American Society of Engineering Educators (ASEE) 2023 Conference Proceedings (Poster display), Baltimore, Maryland.*
2. Wang, J., **J.M.D. Motschenbacher**, and A. Finley. 2022. International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. *American Society of Engineering Educators (ASEE) 2022 Conference Proceedings*, *(Poster display), Minneapolis, Minnesota.*
3. **Motschenbacher, J.M.D**. 2021. Growth Mindset: A Self-Test of How You Think. North Dakota State University, Office of Teaching and Learning, Graduate Student Teaching Assistant Training, November 10, 2021. *Fargo, North Dakota.*
4. **Motschenbacher, J.M.D**. 2021. Reemerging from our Caves: Using Covid-Adapted Teaching 'Tools' to Evolve Learning. North Dakota State University, College of Agriculture, Food Systems, and Natural Resources, Innovations in Teaching Summer Series presentation. July 19,2021. *Fargo, North Dakota.*
5. **Motschenbacher, J.M.D**. 2020. Inclusion Efforts in the Office of Teaching and Learning. North Dakota State University Inclusion Conference. September 22, 2020. *Fargo, North Dakota.*
6. **Motschenbacher, J.M.D**., E.A. Berg, J. Ladbury, J. Nyachwaya, L. Montplaisir, and P. Kelter. 2020. Gateways-ND: Demonstrating Institutional Change in STEM Teaching and Learning within North Dakota State University. *American Society of Engineering Educators (ASEE) Conference Proceedings*, Montreal, Quebec, Canada. (Accepted, canceled due to COVID-19)
7. Wang, J. and **J.M.D. Motschenbacher**. 2020. IRES Track I: USA-China: International Research Experience for Native American Students in IoT-Enabled Environmental Monitoring Technologies. American Society of Engineering Educators (ASEE) Conference Proceedings, Montreal, Quebec, Canada. (Accepted, canceled due to COVID-19 pandemic)
8. **Motschenbacher, J.M.D.** 2019. *Grant Program Evaluation*. Proposal Grant Development Program – Research and Creativity Activities (RCA) Division, North Dakota State University. November 5, 2019. *Fargo, North Dakota.*
9. **Motschenbacher, J.M.D.** and E.A. Berg. 2019. Gateways-ND: Building the Institutional Infrastructure towards Viable Postsecondary STEM Education Reform. Association of Public and Land-Grant Universities (APLU) Powered by Publics Western Land-Grant Cluster, Teaching & Learning Symposium at Colorado State University. September 24, 2019. *Fort Collins, Colorado.*
10. Berg, E.A. and **J.M.D. Motschenbacher**. 2019. Curricular Analytics Usage – North Dakota State University. Association of Public and Land-Grant Universities (APLU) Powered by Publics Western Land-Grant Cluster, Teaching & Learning Symposium at Colorado State University. September 24, 2019. *Fort Collins, Colorado.*
11. **Motschenbacher, J.M.D**, A.L.M. Daigh, and K. Napoleon. 2019. *First-Generation Experiences.* Including U: Brown Bag Conversations Workshop, Office of the Vice Provost for Faculty Affairs and Equity and Inclusion Committee, North Dakota State University. September 10, 2019. *Fargo, North Dakota.*
12. **Motschenbacher, J.M.D.** 2019. Gateways-ND: Building the Institutional Infrastructure towards Viable Postsecondary STEM Education Reform. *American Society of Engineering Educators (ASEE) Conference Proceedings*, NSF Poster session. June 15-19, 2019. *Tampa, Florida.*
13. Semanko, A.* and **J.M.D. Motschenbacher**. 2019. Gateways-ND: Building the Institutional Infrastructure for Improving STEM Undergraduate Education. Roundtable discussion and abstract. *Network of STEM Education Centers (NSEC) Conference*. May 31-June 2, 2019, *Omaha, Nebraska.* (* presenter)
14. **Motschenbacher, J.M.D.** 2018. Growth mindset. *Annual Faculty Development Training – Dakota College at Bottineau*. Workshop presentation. August 16, 2018, *Bottineau, North Dakota.* **Invited Speaker**
15. **Motschenbacher, J.M.D.**, R. Reichenbach, M. Hanson, E.A. Berg, J. Ladbury. P. Kelter. L. Montplaisir, and J. Nyachwaya. 2018. Gateways-ND: Advancing learner-focused instruction to catalyze STEM student success. Poster presentation and abstract. *American Society of Engineering Educators (ASEE) Conference*. NSF Poster Session. June 23-28, 2018, *Salt Lake City, Utah.*
16. **Motschenbacher, J.M.D.** and P. Kelter. 2018. Producing Institutional Change through STEM Faculty Engagement. Poster Presentation and abstract. *Network of STEM Education Centers (NSEC) Conference*. June 6-8, 2018, *Columbus, Ohio.*
17. **Motschenbacher, J.M.D.** 2018. We learn together. Interactive workshop on scholarly teaching. *North Dakota University System (NDUS) Agriculture Faculty Meeting.* May 14, 2018, *Fargo, North Dakota.* **Invited Speaker**
18. McDaniel, S.*, **J.M.D. Motschenbacher**, and P. Kelter. 2017. What does it take to actually do active learning - Training and good classroom design? Oral Presentation and abstract. *Society for College and University Planning (SCUP) 2017 North Central Regional Conference*. October 9-11, 2017, *Minneapolis, Minnesota.* (* presenter)
19. **Motschenbacher, J.M.D.** and A.L.M. Daigh. 2017. How does limiting scientific inquiry and dissemination on climate change affect local and global food security? Oral Presentation and abstract. *Session - Tough Topics 2017: Let's Figure it Out Together. North Dakota State University Teach-In*. March 23, 2017, *Fargo, North Dakota.*

20. **Motschenbacher, J.M.** 2015. Is it safe in America? Physical and emotional pain as barriers to learning. *Panel session – From fire to fire: Examining the complexity of learning for refugee adult English Learners, National Council of Teachers of English, Conference on College Communication and Composition (CCCC)*, March 18-21, 2015, *Tampa, Florida.*
21. **Motschenbacher, J.M.** 2014. Working with USAID: Using agronomy and soil science expertise to improve Eastern Africa agriculture. Oral presentation and abstract. *Session – Professional Development for Agriculture Educators, National Association of Agriculture Educators (NAAE) Annual Convention,* November 18-22, 2014, *Nashville, Tennessee.*
22. **Motschenbacher, J.M.** 2014. Preventing postharvest maize grain losses for smallholder farmers in the District of Iganga, Uganda. Oral presentation and abstract. *Session –Global Agronomy, ASA-CSSA-SSSA International Annual Meetings*, November 2-5, 2014, *Long Beach, California.*
23. **Motschenbacher, J.M.** 2014. The pain of change: Challenges associated with mechanizing rice production and harvesting systems in the Mwea Irrigation Scheme within the Kirinyaga District, Central Providence, Kenya. Oral presentation and abstract. *Session –Global Agronomy, ASA-CSSA-SSSA International Annual Meetings*, November 2-5, 2014, *Long Beach, California.*
24. **Motschenbacher, J.M.** 2014. Preventing postharvest grain losses: Improving handling and storage for maize farmers in Iganga, Uganda. Oral presentation on recommendations and development plan. *Namungalwe Area Cooperative Enterprise (ACE) Advisory Board, Catholic Relief Services, the Regional District Commander (RDC) of the District of Iganga, and USAID.* May 21 and 22, 2014, *Iganga, Uganda.*
25. **Motschenbacher, J.M.** 2013. Soil risk management: Using cover crops to reduce soil degradation. Oral presentation for producers and government personnel. *Iowa State University Extension Field Day*, November 1, 2013, Storm Lake, Iowa.
26. **Motschenbacher, J.M.** 2013. Mechanization of rice production and harvesting systems: Mwea Irrigation Scheme. Oral presentation on business plan. *Mwea Rice Growers Multipurpose (MRGM) Cooperative Society Advisory Board and the Minister of Agriculture - Kenya,* June 20, 2013, *Wang'uru, Central Province, Kenya.*
27. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2012. Long-term effects of rice rotation, tillage, and fertility on near-surface soil carbon and nitrogen cycling. Oral presentation and abstract. *Session - Agricultural Management Practices Impact on Soil Carbon and Nitrogen Pools and Soil Quality Dynamics: I, ASA-CSSA-SSSA International Annual Meetings*, October 21-24, 2012, *Cincinnati, Ohio.*
28. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2012. Long-term rice rotation, tillage, and fertility effects on extractable soil nutrients in a silt-loam soil. Oral presentation and abstract. *Session - Nutrient Cycling and Management in High Yield Environments, ASA-CSSA-SSSA International Annual Meetings*, October 21-24, 2012, *Cincinnati, Ohio.*
29. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, and E.E. Gbur. 2012. Rice rotation and tillage effects on water-stable soil macroaggregates and their associated carbon contents. Oral presentation and abstract. *Southern Region Soil Physics Group*, Oklahoma State University, May 14, 2012, *Stillwater, Oklahoma.*
30. **Motschenbacher, J.M.** 2012. Long-term effects of rice rotation, tillage, and fertility on near-surface soil carbon and nitrogen cycling. Oral presentation and abstract. *Ph.D. Departmental Seminar, Department of Crop, Soil and Environmental Sciences*, University of Arkansas, April 2, 2012, *Fayetteville, Arkansas.*
31. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2012. Soil aggregation and carbon and nitrogen dynamics in rice-based cropping systems. Poster presentation and abstract. The *34th Rice Technical Working Group Meeting Proceedings*, February 27-March 1, 2012, *Hot Springs, Arkansas.*
32. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2012. Long-term rice rotation, tillage, and fertility effects on near-surface chemical properties. Oral presentation and abstract. The *34th Rice Technical Working Group Meeting Proceedings*, February 27-March 1, 2012, *Hot Springs, Arkansas.*
33. Anders, M.M.*, K.M. Yeater, **J.M. Motschenbacher,** and S. Kerr. 2012. Rotation, tillage, and fertility treatment differences in rice grain yield and soil carbon under ten years of consistent management. Abstract. The *34th Rice Technical Working Group Meeting Proceedings*, February 27-March 1, 2012, *Hot Springs, Arkansas.* (* presenter)
34. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2012. Soil aggregation and carbon and nitrogen dynamics in rice-based cropping systems. Poster presentation and abstract. *Abstract to Contract Graduate Research Symposium,* University of Arkansas, February 2012, *Fayetteville, Arkansas.*
35. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2011. Rice crop rotation and tillage effects on soil aggregates and their associated carbon and nitrogen contents. Poster presentation and abstract. *General Soil Physics Session, ASA-CSSA-SSSA International Annual Meetings*, October 14-20, 2011, *San Antonio, Texas.*
36. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2011. Long-term rice-crop and tillage effects on soil surface CO_2 flux. Oral presentation and abstract. *Symposium – Emission of Regulated and Greenhouse Gases: Measurement Technology, Monitoring and Policy, ASA-CSSA-SSSA International Annual Meetings*, October 14-20, 2011, *San Antonio, Texas.*
37. **Motschenbacher, J.M.**, K.R. Brye, and M.M. Anders. 2011. Rice crop rotation and tillage effects on soil aggregates and their associated carbon and nitrogen contents. Poster presentation and abstract. *International Symposium on Soil Organic Matter*, July 11-14, 2011, *Leuven, Belgium.*

38. **Motschenbacher, J.M.** 2010. Spooner Scholarship: Modeling C, N, P, and S cycling in Century and DayCent. Oral presentation and abstract. Presentation on scholarship visit to the Natural Resource Ecology Laboratory at Colorado State University. *Department of Crop, Soil and Environmental Sciences, Departmental Seminar,* University of Arkansas, May 2010, *Fayetteville, Arkansas.*
39. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2010. Long-term rice-based cropping system effects on near-surface soil compaction. Poster presentation and abstract. The *33rd Rice Technical Working Group Meeting Proceedings*, February 22-25, 2010, *Biloxi, Mississippi.*
40. **Motschenbacher, J.M.**, K.R. Brye, M.M. Anders, E.E. Gbur. 2010. Long-term rice-based cropping system effects on near-surface soil compaction. Poster presentation and abstract. *Abstract to Contract Graduate Research Symposium*, University of Arkansas, January 2010, *Fayetteville, Arkansas.*
41. **Motschenbacher, J.M.** 2007. The effects of cross-linked hydrophilic polymers on turf grass. Oral presentation on findings from a graduate independent research project. *Department of Agriscience and Agribusiness, Departmental Seminar,* Middle Tennessee State University, December 2, 2007, *Murfreesboro, Tennessee.*
42. **Motschenbacher, J.M.** 2007. Organic crop development. Oral presentation on findings from a graduate independent research study. *Departmental Seminar,* Middle Tennessee State University, April 12, 2007, *Murfreesboro, Tennessee.*
43. **Motschenbacher, J.M.** 2005. Hybrid rice: Can it help decrease hunger in Asia? Oral presentation and abstract. *Undergraduate Social Science Symposium*, Middle Tennessee State University, February 10, 2005, *Murfreesboro, Tennessee.*
44. **Motschenbacher, J.M.** 2005. Hybrid rice: Can it help decrease hunger in Asia? Poster presentation and abstract. *Undergraduate Scholars Day*, Middle Tennessee State University, January 22, 2005, *Murfreesboro, Tennessee.*
45. **Motschenbacher, J.M.** 2005. Atkins impact on the U.S. beef industry. Poster presentation and abstract. *Undergraduate Research Symposium*, Middle Tennessee State University, November 16, 2005, *Murfreesboro, Tennessee.*

PROFESSIONAL SERVICE AND ASSOCIATIONS:

GRANT REVIEW PANELS AND PEER-REVIEW EXPERIENCE:

National Science Foundation (NSF) Proposal Review Panel Participation (2021,2022,2023; panel dates confidential)
Peer-Review for Professional Society Proceedings:
American Society of Engineering Education (ASEE; 2018,2019,2020,2022,2023)
30 Presentation/Manuscript Abstracts/Papers
Peer-Review of Research Manuscripts for Professional Journals (2013-Present):
Pedosphere; Agronomy for Sustainable Development; Precision Agriculture; Nutrient Cycling in Agroecosystems: Ecological Engineering; The Journal of Agricultural Science; Environmental Monitoring and Assessment; Agronomy Journal; Ecological Indicators; Soil Science; Soil Science Society of America Journal.

ORGANIZATIONAL MEMBERSHIPS AND ACTIVE INVOLVEMENTS:

Higher Learning Commission (HLC; 2019-2022)
Association of Public and Land-grant Universities (APLU; 2019-2022)
Association of American Colleges and Universities, Associates Program (AAC&U; 2018-2022)
Network of STEM Education Centers (NSEC; 2018-2022)
American Society of Engineering Educators (ASEE; 2018-Present)
Association for Women Soil Scientists (AWSS; 2012-2020)
Arkansas Association of Professional Soil Classifiers (AAPSC; 2012-2013)
Crop, Soil and Environmental Sciences Graduate Student Association (CSES-GSA; 2008-2012)
Soil Science Society of America (SSSA; 2008-Present)
Crop Science Society of America (CSSA; 2008-Present)
American Society of Agronomy (ASA; 2008-Present)

HONOR SOCIETIES:

Who's Who Among American College Students (Inducted 2010)
Golden Key International Honour Society (Inducted 2009)
Phi Kappa Phi (Inducted 2007)
The National Dean's List (Inducted 2003)
The National Society of Collegiate Scholars (Inducted 2002)