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EDUCATION

- **Ph.D.** Soil and Water Science, University of Florida, USA **2015**
- **M.S.** Soil Science, Punjab Agricultural University, India **2009**
- **B.S.** Agriculture, Bidhan Chandra Krishi Vishwavidyalaya, India **2007**

PROFESSIONAL EXPERIENCE

- Associate Professor (Tenured), Minnesota State University, USA **August 2024 – Present**
- Assistant Professor (Tenure track), Minnesota State University, USA **2020 – 2024**
- Postdoctoral Research Associate, Iowa State University, USA **March 2017 – August 2020**
- Postdoctoral Research Associate, University of Idaho – Twin Falls Research and Extension Center, USA. **November 2015 – February 2017**
- Research Associate, University of Florida, USA **2015 (July – October)**
- Graduate Research Assistantship, University of Florida, USA **2011 – 2015**
- Junior Research Fellow, Punjab Remote Sensing Center, India **2009 – 2010**
- Junior Research Fellow, Punjab Agricultural University, India **2007 – 2009**

PEER REVIEWED PUBLICATIONS

JOURNAL ARTICLES (*Undergraduate student and **Graduate student):

16. Thilakarathne A., M. Woods, **M. De**, M.D. McDaniel. 2025. [Diversified cropping systems enhance soybean resilience to extreme drought](#). Agriculture, Ecosystems & Environment 399: 110180, <https://doi.org/10.1016/j.agee.2025.110180>
15. Singh, R., **M. De**, R. Banerjee, A. Nayak, S. Dasgupta, A. Das, S. Dey, D.C. Weindorf. 2025. [Enhancing soil organic carbon estimation with generative AI and Nix color sensor](#). *Scientific Reports* 15, 40628. <https://doi.org/10.1038/s41598-025-24236-9>
14. Moore, E.B., **M. De**, M. Nunes, D. Saha, V. Gin, L. Lidong, J.M.F. Johnson, D.L. Karlen, and M.D. McDaniel. 2025. [Connections Between Roots and Soil Health Across Agriculture Management Practices](#). *Plant and Soil* <https://doi.org/10.1007/s11104-025-07367-w>

13. De, M., J. Sawyer, and M.D. McDaniel. 2022. [Crude glycerin, a biodiesel byproduct, as a soil amendment to temporarily immobilize and then release nitrogen](#). *European J. Soil Sci.* 73(3): e13241.
12. *Bonds D., J.A. Koziel, **M. De**, B. Chen, A.K. Singh, M.A. Licht. 2022. [Dataset Documenting the Interactions of Biochar with Manure, Soil, and Plants: Towards Improved Sustainability of Animal and Crop Agriculture](#). *Data* 7(3): 32.
11. **Baldwin-Kordick, R., **M. De**, M.D. Lopez, M. Liebman, N. Lauter, J. Marino, and M.D. McDaniel. 2022. [Comprehensive impacts of diversified cropping on soil health and sustainability](#). *Agroecol. Sustain. Food Syst.* 46(3): 331-363.
10. Nunes, M. R., **M. De**, M. D. McDaniel, J. L. Kovar, S. J. Birrell and D. L. Karlen. 2021. [Science-based maize stover removal can be sustainable](#). *Agron. J.* 113: 3178–3192.
9. Banik, C., J. Koziel, **M. De**, *D. Bonds, B. Chen, A. Singh, and M. Licht. 2021. [Soil nutrients and carbon dynamics in the presence of biochar-swine manure mixture under controlled leaching experiment using a Midwestern Mollisols](#). *Front. Environ. Sci.* 9: <https://doi.org/10.3389/fenvs.2021.609621>.
8. **De, M.**, J.A. Riopel, L.J. Cihacek, M. Lawrinenko, **R. Baldwin-Kordick, S.J. Hall, and M.D. McDaniel. 2020. [Soil health recovery after grassland reestablishment on cropland – the effects of time and topographic position](#). *Soil Sci. Soc. Am. J.* 84:568–586.
7. **De, M.**, A.D. Moore, and R.L. Mikkelsen. 2019. [In-season accumulation and partitioning of macronutrients and micronutrients in irrigated sugar beet production](#). *J. Sugarbeet Res.* 56(3&4): 1-25.
6. Lusk, M.G., G.S. Toor, Y.Y. Yang, **S. Mechtensimer, **M. De**, and T.A. Obreza. 2017. [A review of the fate and transport of nitrogen, phosphorus, pathogens, and trace organic chemicals in septic systems](#). *Crit. Rev. Environ. Sci. Technol.* 47(7): 455-54
5. **De, M.**, and G.S. Toor. 2017. [Nitrogen transformations in the mounded drainfields of drip dispersal and gravel trench septic systems](#). *Ecol. Eng* 102: 352-360.
4. **De, M.**, and G.S. Toor. 2016. [High removal of effluent-borne nitrogen with multiple external electron donors in the engineered drainfield of an advanced septic system](#). *J. Environ. Qual.* 45(6): 1874-1882.
3. **De, M.**, and G.S. Toor. 2016. [Mass balance of water and nitrogen in the mounded drainfield of a drip-dispersal septic system](#). *J. Environ. Qual.* 45(4): 1392-1399.
2. **De, M.**, and G.S. Toor. 2015. [Fate of effluent-borne nitrogen in the mounded drainfield of an onsite wastewater treatment system](#). *Vadose Zone J.* 14.
1. **De, M.**, D. Saha, and S. Chakraborty. 2014. [Soil Structure and Strength Characteristics in Relation to Slope Segments in a Degraded Typic Ustroschrepts of North-West India](#). *Soil Horiz.* 55 (1).

BOOK CHAPTERS (INVITED):

1. Karlen, D.L., **M. De**, M.D. McDaniel, and D.E. Stott. 2021. [Evolution of the soil health movement](#). In: D.L. Karlen, D.E. Stott, and M.M. Mikha (eds). *Soil Health*: Vol. 1:

Approaches to Soil Health Analysis, Chapter 2, Soil Science Society of America (SSSA) & Wiley International, SSSA, Madison, WI.

2. Sarkar, D.J., M. Barman, T. Bera, **M. De** and D. Chatterjee. 2018. [Agriculture: Polymers in Crop Production Mulch and Fertilizer](#). In: Encyclopedia of Polymer Applications, 3 Volume Set (Taylor & Francis Group). ISBN: 978-1-49-8729932.

EXTENSION ARTICLES (*Undergraduate student):

1. *Rogers, A.V., T. Bera, and **M. De**. 2023. [How Do Apple Tree Rootstocks and Cultivars Affect Soil Health in Southern Minnesota Orchards? Crops & Soils Mag 56\(1\): 38-44.](#)

IN PREPARATION/UNDER REVIEW:

3. Thilakarathne, A., M. Woods, **M. De**, M.D. McDaniel. 2025. Diversified cropping systems enhance soybean resilience to extreme drought. *Ag Ecosystem Environ* (**UNDER REVIEW**)
2. **De, M.**, A.D. Moore, and A. Leytem. Frequencies and rates of dairy manure applications effect on selected soil health indicators. (Target Journal “*Soil Sci. Soc. Amer. J*”)
1. **De, M.**, and G.S. Toor. Does Nitrogen Export in Shallow Groundwater from Conventional Septic Systems Impact Human health? Evidence from Field Scale Septic Design Studies in Florida, USA. (Target Journal “*Water Research*”)

RESEARCH GRANTS

EXTERNAL (Total Applied: >\$3.5M; Funded: ~\$2.5M):

16. Byrne, T., M. Julius, **M. De**, A. Deason, K. Wenner, A. Wilson, C. Hankins, J. Cooper, and D. Garraway. 2025. Aqua- to Agriculture: Recapturing Nutrients to Improve Water Quality. Submitted to U.S. EPA Gulf of Mexico Division for Gulf of Mexico Farmer to Farmer 2024 BIL for **\$1,987,728 (FUNDED)**.

Role: Subcontract and Co-Principal Investigator (~40% contribution).

15. Geske, J., **M. De**, T. Secott, A. Budge, M. Kaproth, and R. Wersal. 2024. Expanding Opportunities for Students in the School of Applied Agriculture, Food and Natural Resources. Submitted to USDA NIFA’s Capacity Building Grants for Non-Land Grant Colleges of Agriculture Program (NLGCA) for **\$149,748 (NOT FUNDED)**.

Role: Senior Personnel (~20% contribution).

14. Sarangi, D., S. Dhanda, T. J. Peters, and **M. De**. 2024. On-Farm Research to Optimize Electrocution as an Integrated Weed Management Tool in Sugar Beet. Submitted to Minnesota Department of Agriculture’s (MDA) AGRI Crop Research Grant 2025 for **\$249,990 (NOT FUNDED)**.

Role: Co-Principal Investigator (~10% contribution).

13. Geske, J., **M. De**, M. Bowen, M. Kaproth, and R. Wersal. 2024. Expanding Opportunities for Students in the School of Applied Agriculture, Food and Natural Resources. Submitted to

USDA NIFA's Capacity Building Grants for Non-Land Grant Colleges of Agriculture Program (NLGCA) for **\$149,841 (NOT FUNDED)**.

Role: Senior Personnel (~20% contribution).

12. Cates, A., **M. De**, F. Fernandez, B. Lazarus, C. LaCanne, and K. LaBine. 2023. Past the learning curve: does long-term integrated soil health management lower N requirements? Submitted to the Minnesota Department of Agriculture – Agricultural Fertilizer Research Education and Council (MDA-AFREC) for **\$186,870 (NOT FUNDED)**.

Role: Subcontract and Co-Principal Investigator (~30% contribution).

11. Cates, A., **M. De**, F. Fernandez, B. Lazarus, C. LaCanne, and K. LaBine. 2023. Past the learning curve: does soil health lower N requirements? Submitted to the Minnesota Corn Growers Association for **\$185,563 (FUNDED)**.

Role: Subcontract and Co-Principal Investigator (~40% contribution).

10. Ben-Noah, I., **M. De**, and C.T. Ruhland. 2023. Evaluating crude glycerol as an inexpensive, non-traditional soil amendment to improve soil and plant health and reduce environmental pollution. Submitted to the US-Israel Binational Agricultural Research and Development (BARD) Fund for **\$310,000 (NOT FUNDED)**.

Role: Co-Principal Investigator and author (~60% contribution).

9. **De, M.** 2023. Evaluating Soil Biology and Crop Health under Poultry/crop Integration. Submitted to Minnesota Corn Research & Promotion Council and Minnesota Corn Growers Association for **~\$15,000 (NOT FUNDED)**.

Role: Principal Investigator and author (~100% contribution).

8. **De, M.**, M. Bowen, and K. Musser. 2022. Integrating Livestock & Sustainable Soil Management Practices to Improve Crop Productivity, Soil Health, and Farm Profitability in Corn-soybean System. Submitted to North Central Sustainable Agriculture Research and Education's (NCR-SARE) Research and Education Grant for **~\$250,000 (NOT FUNDED)**.

Role: Principal Investigator and author (~80% contribution).

7. **M. De.** 2022. [Evaluating Soil Health and Farm profitability with Perennials and Poultry in Corn Production Systems](#). Submitted to Minnesota Department of Agriculture's (MDA) AGRI Sustainable Agriculture Demonstration Grant for **\$49,948.60 (FUNDED)**.

Role: Principal Investigator and author (~85% contribution).

6. Mahal, N.K. and **M. De.** 2021. [Farm-to-Fork: Educating Youth in Sustainable Farming for Healthy Food and Healthy Environment](#). Submitted to North Central Sustainable Agriculture Research and Education's (NCR-SARE) Youth Educator Sustainable Agriculture Grants for **\$4,000 (FUNDED)**.

Role: Co-Principal Investigator and author (~60% contribution).

5. Geske, J. 2021. [Building a Regional Soil Health Initiative](#). Submitted to USDA NIFA's Capacity Building Grants for Non-Land Grant Colleges of Agriculture Program (NLGCA) for **\$149,565 (FUNDED)**.

Role: Senior Personnel (~10% contribution).

4. Haase, S., **M. De**, and N.K. Mahal. 2021. Regenerating Soil Health with Perennial Groundcover in Corn Production Systems. Submitted to Minnesota Corn Research & Promotion Council and Minnesota Corn Growers Association for **\$30,000 (NOT FUNDED)**.

Role: Co-Principal Investigator and author (~60% contribution).

3. **De, M.** and S.J. Druschel. 2020. Comparison of Compost and Proprietary Soil Amendments for Vegetation Establishment. Submitted to Minnesota Department of Transportation (MnDOT) for **\$155,325 (NOT FUNDED)**.

Role: Principal Investigator and author (~90% contribution).

2. McDaniel, M.D., **M. De**, M. Thompson, M. Liebman, and M. Helmers. 2017. [Does quantity and quality of tile drainage water impact in-stream eutrophication potential? Evidence from a long-term biofuel cropping systems experiment](#). Submitted to Iowa Nutrient Research Center (INRC) for **\$90,736 (FUNDED)**.

Role: Co-Principal Investigator and author (~70% contribution).

1. **De, M.**, M.D. McDaniel, and J.L. Kover. 2017. How does crop rotation history affect nutrient availability at the rhizosphere? Evidence from a rhizobox experiment. Submitted to International Plant Nutrition Institute (IPNI) for **\$20,000 (NOT FUNDED)**.

Role: Principal Investigator and author (~80% contribution).

INTERNAL (Total: \$31,492; *Undergraduate students):

13. *Henriquez, D. and **M. De**. 2025. Impact of Contrasting Soil Health Management on Soil Physical Health Indicators in Maize (*Zea mays* L.) Production Systems. Submitted to the Undergraduate Research Center's (URC) Foundation Grant for **\$2,000 (FUNDED)**.
12. *Melius, S. and **M. De**. 2024. Impacts of Poultry and Perennial Cover Crop Integration on Crop Health and Weed Suppression in a Wide-row Corn (*Zea mays* L.) Production System. Submitted to Undergraduate Research Center's (URC) Summer Undergraduate Research Experience (SURE) award for **\$500 (FUNDED)**.
11. *Kjorness, J., *A. Shrestha, M. Kaproth and **M. De**. 2024. How Prescribed Fire Regimes Impact Soil Health in Minnesota's Tallgrass Prairie? Submitted to 2024 Vonderharr private award for **\$2,000 (FUNDED)**.
10. **De, M.** 2023. Integration of Perennial Cover Crops and Poultry in a Corn Production System: Assessment of Soil Biology and Crop Health. Submitted to The William Flies Science and Engineering Fellowship for **\$7,498 (FUNDED)**.
9. *Kjorness, J., M. Kaproth, and **M. De**. 2023. The Effects of Prescribed Fire Regimes on Soil Physical Properties in Minnesota Tallgrass Prairie. Submitted to Undergraduate Research Center's (URC) Foundation Grant for **\$2,000 (FUNDED)**.
8. *Sore, B. and **M. De**. 2023. Impact of perennial cover crops on soil biological health in a wide-row corn production system in Southern Minnesota. Submitted to Undergraduate Research Center's (URC) Foundation Grant for **\$750 (FUNDED)**.

7. *Fisher, R. and **M. De.** 2023. Comparing the seasonal changes in soil chemical health indicators through perennial cover crop integration in a corn production system. Submitted to Undergraduate Research Center's (URC) Foundation Grant for **\$2,000 (FUNDED)**.
6. *Smithson, A. and **M. De.** 2023. The effect of polyethylene and polypropylene microplastic on soil nitrogen transformation under contrasting temperatures. Submitted to Undergraduate Research Center's (URC) Summer Undergraduate Research Experience (SURE) award for **\$500 (FUNDED)**.
5. *Wersal, M.M. and **M. De.** 2022. Evaluating weed density, weed richness, and ear pollination in a corn production perennial cover crop system. Submitted to Undergraduate Research Center's (URC) Foundation Grant for **\$2,000 (FUNDED)**.
4. *Battah, A.A. and **M. De.** 2022. Assessment of soil physical health in an intensive corn production system integrated with perennial cover crops. Submitted to Undergraduate Research Center's (URC) Foundation Grant for **\$750 (FUNDED)**.
3. *Galuska, C.M. and **M. De.** 2021. Evaluating the impact of microplastics on soil health: A greenhouse pot experiment. Submitted to Undergraduate Research Center's (URC) Foundation Grant for **\$2,000 (FUNDED)**.
2. *Rogers, A.V. and **M. De.** 2021. Evaluating soil health in a Minnesota apple orchard: The effects of apple tree rootstock and cultivars. Submitted to Undergraduate Research Center's (URC) Foundation Grant for **\$2,000 (FUNDED)**.
1. **De, M.** and B. Dharmadhikari. 2021. Use of Biocompatible Polymer – Graphene Oxide Based Nanomaterial to Reduce Nitrate Nitrogen Loss from Agricultural Soils. Submitted to The William Flies Science and Engineering Fellowship for **\$7,494 (FUNDED)**.

TEACHING EXPERIENCE

CURRENT:

Instructor at Minnesota State University, Mankato, USA

Fall 2020 – present

• SPRING

BIOL 104 – Introductory Soil Science (Lectures and Labs)

BIOL 106 – General Biology II (Lectures and Labs)

BIOL 450 – Soil Fertility and Plant Nutrition (Lectures only)

BIOL 481 – Lab Supervision and Maintenance

BIOL 499 – Individual Study (Research)

BIOL 695 – Graduate Seminar

BIOL 699 – Thesis

• SUMMER

BIOL 490 – Healthy Soils for Sustainable Agriculture (Lectures only)

BIOL 699 – Thesis

• FALL

ENVR 101 – Perspectives in Environmental Science

BIOL 106 – General Biology II (Labs only)
BIOL 215 – General Ecology (Labs only)
BIOL 412/512 – Soil Ecology (Lectures and Labs)
BIOL 481 – Lab Supervision and Maintenance
BIOL 499 – Individual Study (Research)
BIOL 695 – Graduate Seminar
BIOL 699 – Thesis

PAST:

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| Invited Lecture at Vellore Institute of Technology, India Fundamentals of Soil Science (Instructor: Dr. Saiyyeda Firdous) | Fall 2019 |
| Guest Lecturer at Iowa State University, USA | 2018 – 2019 |
| AGRON 281 – Crop Physiology (Instructor: Dr. Emily Heaton) AGRON 354 – Soils and Plant Growth (Instructor: Dr. Marshall McDaniel) AGRON 553 – Soil Plant Relationships (Instructor: Dr. Marshall McDaniel) | |
| Teaching Assistant at University of Florida, USA | 2011 – 2012 |
| SWS 6932 – Urban Soil and Water Systems (Instructor: Dr. Gurpal S Toor and Dr. Mary Lusk) SWS 2007 – World of Water (Instructor: Dr. James Bonczek) | |

MENTORING EXPERIENCE

I served or have been serving as a mentor for both graduate students (MS and PhD level) and undergraduate students to support their advancement in research activity. These include, but are not limited to:

2013 – Present

- ✓ Finding appropriate research problems.
- ✓ Developing and executing research protocols.
- ✓ Training mentees in several field and lab techniques.
- ✓ Executing lab/field tasks in a timely manner to meet study objectives.
- ✓ Training mentees in collecting research data and statistical analysis using MS Excel, Sigma Plot, Statistix 10, and R Studio software.
- ✓ Writing grants and aid them in research.
- ✓ Preparing students to present their research at professional meetings
- ✓ Writing Letter of Recommendation (LOR) for graduate schools, jobs, scholarships, and internships.

CURRENT – Minnesota State University, Mankato (Undergraduate: 20 and Graduate: 8)

- Serving as an MS thesis committee member for EIGHT graduate students. **2021 – Present**
 - Guntash Singh Grewal (Biology)
 - Sovika Bhattarai (Biology)
 - Eugene G Afari (Biology)
 - Kenny Famakinwa (Biology)
 - Jean Pengra (Biology)
 - Mia D. Makovsky (Geography and Biology)
 - Ely Hartl (Geography)
 - Grace Uchytil (Geography)

- Served/serving as an undergraduate mentor for The Undergraduate Research Center's Foundation Grant program. **2021 – present**
- Served/serving as an undergraduate mentor for Individual Study (BIOL 499 – Research) program. **2021 – present**
- Served/serving as an undergraduate mentor for The Undergraduate Research Center's Research Apprenticeship Program (RAP). **2020 – present**

PAST – Iowa State University, University of Idaho, and University of Florida, USA

- Served as an ad hoc mentor for 4 graduates (MS and PhD level) and 10 undergraduate students.
- Served as an undergraduate mentor for ASA-CSSA-SSSA's 2018 Golden Opportunity Scholars. **2018 – 2020**

PROFESSIONAL PRESENTATIONS

ORAL PRESENTATIONS (*Undergraduate student and **Graduate student):

16. **De, M.** 2024. [Can we regenerate soil health and enhance corn productivity in the U.S. corn belt through perennial cover crops and poultry integration?](#) Douglas R. Moore Faculty Research Lectureship at Minnesota State University, Mankato, on April 1st, 2024.
15. *Wersal, M.M. and **M. De.** 2023. [Effects of perennial cover crops on corn ear attributes and yields](#). National Conference on Undergraduate Research (NCUR) on April 13-15, University of Wisconsin-Eau Claire.
14. *Bonds, D., J.A. Koziel, C. Banik, **M. De**, **B. Chen, A. Singh, and M.A. Licht. 2021. Improving the sustainability of animal and crop production agriculture: evaluation of biochar-swine manure mixture impact on soil nutrient availability and plant uptake. National Conference on Undergraduate Research (NCUR), April 12-14, Virtual.
13. **De, M.**, *T. Brehm, G. Wilkinson, M. Thompson, M. Helmers and M.D. McDaniel. 2020. Direct linkages between soil management and eutrophication potential of Iowa streams. 75th Soil and Water Conservation Society (SWCS) International Annual Conference, July 26 - 29, Des Moines, IA, USA.
12. **De, M.**, *M. Roush, J.E. Sawyer and M.D. McDaniel. [Glycerin as a soil amendment to temporarily store and resupply nitrogen to crops. Evidence from an incubation study.](#) 2018-2019 International Soils Meeting, January 6-9, San Diego, CA, USA.
11. **De, M.**, M. Lawrinenko, **R. Baldwin-Kordick, S. Hall, L.J. Cihacek, and M.D. McDaniel. 2017. [Impact of conservation reserve program on soil health.](#) ASA-CSA-SSSA International Annual Meetings, October 22-25, Tampa, FL, USA.
10. **De, M.**, A.D. Moore, and A. Leytem. 2017. [Impact of repeated dairy manure applications on nitrogen mineralization potential and soil physical properties in Southern Idaho Calcareous Soils.](#) ASA-CSA-SSSA International Annual Meetings, October 22-25, Tampa, FL, USA.
9. **De, M.**, and G.S. Toor. 2015. Transport of nitrogen from septic systems to shallow groundwater. 26th Annual Florida Lake Management Society (FLMS) Technical Symposium, June 9-11, Naples, FL, USA.

(http://flms.net/images/stories/uploads/annual-conference/2015_conference/2015%20program%20book%20final.pdf)

8. **De, M.**, and G.S. Toor. 2015. Mass balance of nitrogen in septic system drainfields. 26th Annual Florida Lake Management Society (FLMS) Technical Symposium, June 9-11, Naples, FL, USA.
(http://flms.net/images/stories/uploads/annual-conference/2015_conference/2015%20program%20book%20final.pdf)
7. **De, M.** 2015. Fate and transport of effluent-borne nitrogen from septic drainfields to shallow groundwater. Ph.D. dissertation seminar presented at University of Florida, March 23, Gainesville, FL, USA.
6. Toor, G.S., and **M. De**. 2014. Water and nitrogen balance for mounded, drip irrigation systems receiving septic tank effluent. Soil Science Society of America (SSSA) Onsite Wastewater Conference, April 7-8, Albuquerque, NM, USA.
5. **De, M.**, and G.S. Toor. 2013. Wastewater-borne nitrogen transport from septic drainfields to groundwater. Society of Environmental Toxicology and Chemistry (SETAC) North America 34th Annual Meeting, November 17-21, Nashville, TN, USA.
4. **De, M.**, and G.S. Toor. 2013. Mass balance of water and nitrogen in the drainfield of onsite wastewater treatment system. ASA-CSA-SSSA International Annual Meetings, November 3-6, Tampa, FL, USA.
3. Toor, G.S., and **M. De**. 2013. Dynamics of nutrients transport in onsite wastewater treatment systems. American Geophysical Union Spring Meeting, May 14-17, San Francisco, CA, USA. (<http://abstractsearch.agu.org/meetings/2013/JA/H53A-03.html>)
2. Toor, G.S., **M. De** and **N. Danmowa. 2012. Fate and transport of nitrogen and phosphorus in onsite wastewater treatment systems. American Geophysical Union Fall Meeting, Dec. 3-7, San Francisco, CA, USA. (<http://abstractsearch.agu.org/meetings/2012/FM/H43I-06.html>)
1. **De, M.** 2008. Behavior, measurement, and prediction of runoff from the catchment areas. Credit seminar at Punjab Agricultural University, Ludhiana, India.

INVITED TALKS:

10. **De, M.** 2025. Using Compost to Improve Soil Health. ***Invited talk*** at the 2025 MN Composting Council's Compost Operator Training on Sept 11th, 2025, in Duluth, MN, USA.
9. **De, M.** 2022. Linking soil health to soil functions and ecosystem services. ***Invited talk*** at Biology and Biomedical Science seminar series (October 21) organized by Winona State University, MN, USA.
8. **De, M.** 2022. Healthy soils for a healthy life and a healthy environment. ***Invited talk*** at an Environment Education Summer Camp (July 13) organized by the Youth Program, Ottawa Community Immigrant Services Organization (OCISO), Ottawa, Ontario, Canada.
7. **De, M.** 2022. Managing soil biology for enhanced ecosystem services. ***Invited talk*** at an International Webinar to celebrate International Day for Biological Diversity (May 22) -

organized by The Phytomics: The Botanical Society of Bhaskaracharya College of Applied Sciences, University of Delhi, Delhi, India.

6. **De, M.** 2022. Sustainable soil management practices to combat climate change. **Invited talk** at A Southcentral Minnesota Clean Energy Council forum (May 13), North Mankato, MN.
5. **De, M.** 2022. Managing soil health for enhanced nitrogen cycling. **Invited talk** at The 14th annual Nutrient Management Conference (Feb 08), Mankato, MN organized by University of Minnesota Extension and the Minnesota Agricultural Water Resource Center (MAWRC).
4. **De, M.** 2021. Harnessing soil biology for enhanced ecosystem functions in agronomy. **Invited talk** at 2021 Soil Management Summit (Dec 15), Mankato, MN organized by University of Minnesota Extension and Outreach.
3. **De, M.** 2020. The speed limit of soil organic carbon change. **Invited talk** at the CropsTV powered by Iowa State University Extension and Outreach.
2. **De, M.** 2018. Why our postdocs should consider becoming active in the ISUPDA and/or NPA? **Invited talk** at the Iowa State University's Postdoc Success Program (PSP).
1. **De, M.** 2018. "Agriculture in India". **Organized by** the International Association of Students in Agricultural and Related Sciences (IAAS) - Iowa State University.

POSTER PRESENTATIONS (*Undergraduate student and **Graduate student):

27. **Bhattarai, S., and **M. De**. 2025. Do Perennial Cover Crops and Free-ranging Turkeys Improve Soil health Within Three years in a Wide-Row Maize Production System? Soil Health Institute 10th Anniversary Virtual Meeting: Soil Health, the Foundation for Regenerative Agriculture on Dec. 3-4.
26. **Bhattarai, S., and **M. De**. 2025. Can Perennial Cover Crops Suppress Weeds and Boost Corn Yield in the Midwestern Corn Belt? 2025 Midwest Cover Crops Council (MCCC) Annual Meeting and the UMN Soil Management Summit (SMS), January 28-30, Mankato, MN, USA.
25. **Bhattarai, S., and **M. De**. 2024. Short-Term Effects of Perennial Cover Crops and Turkey on Soil Nitrogen Mineralization and Plant Growth in a Wide-row Maize (*Zea mays* L.) Production System. 2024 ASA-CSA-SSSA International Annual Meeting, November 10-13, San Antonio, TX, USA.
24. **Bhattarai, S., **M. De**, and M.W. Bowen. 2024. Do Perennial Cover Crops and Poultry Integration Benefit Soil Microbial Communities in Wide-row Maize (*Zea mays* L.) Production Systems? 84th Annual Meeting of the North Central Branch of the American Society for Microbiology, Mankato, MN, USA, October 4-5.
23. Bowen, M.W., **G. Uchytil, **M. De**, and D. Friend. 2024. Evaluating the Effects of Topographic Position on Soil Carbon Content in Prairie Pothole Agricultural Landscapes. The Geological Society of America (GSA) Connects 2024 Meeting in Anaheim, CA, USA, 22–25 September.

22. *Kjorness, J., M. Kaproth, and **M. De.** 2024. [The Effects of Prescribed Fire Regimes on Soil Physical Properties in Minnesota Tallgrass Prairie](#). 2024 Undergraduate Research Symposium at Minnesota State University, Mankato, April 18.

21. *Sore, B. and **M. De.** 2024. [Impact of Perennial Cover Crops on Soil Biological Health in a Wide-Row Corn \(*Zea mays* L.\) Production System](#). 2024 Undergraduate Research Symposium at Minnesota State University, Mankato, April 18.

20. *Fischer, R. and **M. De.** 2024. [Evaluating the Effects of Perennial Cover Crops on the Soil Chemical Properties in a Wide-row Corn Production System in Southern Minnesota](#). 2024 Undergraduate Research Symposium at Minnesota State University, Mankato, April 18.

19. *Battah, A.A. and **M. De.** 2023. [Assessment of soil physical health in an intensive corn production system integrated with perennial cover crops](#). National Conference on Undergraduate Research (NCUR) on April 13-15, University of Wisconsin-Eau Claire.

18. Mahal, N.K. and **M. De.** 2022. [Farm-to-Fork: Sustainable agriculture program for youth](#). 2022 ASA-CSA-SSSA International Annual Meeting, November 6-9, Baltimore, MD, USA.

17. **De, M.**, M.D. McDaniel and J.E. Sawyer. 2022. [Amending agricultural soils with crude glycerol to temporarily immobilize leachable nitrogen and then recycle immobilized nitrogen](#). 22nd World Congress of Soil Science, 31 July-5 August, Glasgow, Scotland, Virtual.

16. *Galuska, C.M., *V.K. McKnight, C.T. Ruhland and **M. De.** 2022. [Evaluating the impacts of microplastics on soil and plant health: A greenhouse pot experiment](#). 2022 Undergraduate Research Symposium at Minnesota State University, Mankato, April 12.

15. *Rogers, A.V., T. Bera, and **M. De.** 2022. [Evaluating soil health in a Minnesota apple orchard: The effects of apple tree rootstock and cultivars](#). 2022 Undergraduate Research Symposium at Minnesota State University, Mankato, April 12.

14. *Abdurahman, M.S., T. Bera, and **M. De.** 2022. [Evaluating Soil Health Under Diverse Land Uses in Southern Minnesota](#). 2022 Posters at St. Paul event (MN State Capitol), February 23, St. Paul, MN, USA, Virtual.

13. **De, M.**, *M.S. Abdurahman, and T. Bera. 2021. [Comparing Soil Health Index under Diverse Land Uses in Mollisols](#). 2021 ASA-CSA-SSSA International Annual Meeting, November 7-10, Salt Lake City, UT, USA, Virtual.

12. *Abdurahman, M.S., T. Bera, and **M. De.** 2021. [Soil health characterization under different land uses in southern Minnesota](#). 2021 Undergraduate Research Symposium at Minnesota State University, Mankato, April 15, Virtual.

11. **De, M.**, *M. Roush, J.E. Sawyer and M.D. McDaniel. 2020. [Can we improve soil health and recycle soil nitrogen by amending agricultural soils with crude glycerin, a biodiesel byproduct?](#) 75th Soil and Water Conservation Society (SWCS) International Annual Conference, July 26 - 29, Des Moines, IA, USA.

10. **De, M.**, *T. Brehm, G. Wilkinson, M. Thompson, M. Helmers and M.D. McDaniel. 2020. [Linking soil management practices to eutrophication potential in Iowa streams](#). Iowa Water Conference 2020, April 8-9, Ames, IA, USA.

9. **De, M.**, J. A. Riopel, L. J. Cihacek, M. Lawrinenko, **R. Baldwin-Kordick, S.J. Hall, and M.D. McDaniel. 2019. Converting cropland to grassland has minor effects on soil health, even after 40 years of restoration. ISU Soil Health Conference, February 4-5, Ames, IA, USA.

8. **De, M.**, A.D. Moore, and R.L. Mikkelsen. 2017. [In-season accumulation and partitioning of nutrients by glyphosate-resistant sugar beets](#). Western Nutrient Management Conference, March 2-3, Reno, NV, USA.

7. **De, M.**, A.D. Moore, and A. Leytem. 2016. [Impact of dairy manure and crop rotations on nitrogen mass balance in the Southern Idaho Calcareous Soils](#). ASA-CSA-SSSA International Annual Meeting, November 6-9, Phoenix, AZ, USA.

6. **De, M.**, and G.S. Toor. 2014. Transport of nitrogen from drip-dispersal septic system drainfield to shallow groundwater. Florida Ag. Expo, University of Florida-Gulf Coast Research and Education Center, November 5, Wimauma, FL, USA.

5. **De, M** and G.S. Toor. 2014. Nitrogen transport from drip-dispersal septic system drainfield to shallow groundwater. 16th Annual Soil and Water Science Research Forum, September 17, Gainesville, FL, USA.

4. Toor, G.S., **M. De**, **S. Mechtensimer, Y.Y. Yang, and C. Wilson. 2014. Miracle in the vadose zone of onsite wastewater treatment systems: fate of wastewater-borne contaminants. Complex Soil Systems Conference, September 3-5, Berkeley, CA, USA.

3. **De, M.**, and G.S. Toor. 2013. Fate and transport of nitrogen beneath septic drainfields. 8th IAHS International Groundwater Quality Conference, April 21-26, Gainesville, FL, USA. (https://conference.ifas.ufl.edu/gq13/Poster_Sessions.pdf)

2. **De, M.**, and G.S. Toor. 2012. Fate and transport of nitrogen in onsite wastewater treatment systems. Florida Ag. Expo, University of Florida-Gulf Coast Research and Education Center, Wimauma, FL, USA.

1. **De, M.**, R. Khera, and M.S. Hadda. 2009. Soil physical properties of an arable watershed as affected by slope position in Submontane Punjab. 74th Annual Convention of Indian Society of Soil Science (ISSS), IARI, New Delhi, India.

SERVICES

INSTITUTIONAL:

- **Assessment Committee Member** **2024-2026**
Served as a member of the Assessment Committee in the Department of Biological Sciences, Minnesota State University, Mankato.
- **Chairperson Search Committee** **2024**
Served as a member of Department of Biological Sciences Chairperson Search Committee at the Minnesota State University, Mankato.
- **Judge for the Midwest Undergraduate Data Analytics Competition (MUDAC)** **2024**

Served as a judge for 2024 MUDAC, hosted by Minnesota State University, Mankato, on April 6-7, 2024.

- **Member of Faculty Association Budget Committee** **2023 – 2025**
Serving as a member of Faculty Association Budget Committee (2-year term), Minnesota State University, Mankato.
- **Search Screening Committee Chair** **2022**
Served as a Search Screening Committee Chair for Environmental Scientist, Assistant Professor (AA24032) position at the Minnesota State University, Mankato.
- **Marching Faculty for the Fall 2022 Commencement** **2022**
Involved as a marching faculty for the Fall 2022 Commencement, Minnesota State University, Mankato.
- **Advisory Committee Member** **2022-2024**
Served as a member of the Advisory Committee in the Department of Biological Sciences, Minnesota State University, Mankato.
- **Judge for Undergraduate Oral Presentations** **2022**
Served as a judge for the 2022 Undergraduate Research Symposium (URS), Minnesota State University, Mankato, held on April 12th, 2022.
- **Search Committee Member** **2022**
Serving as a committee member for Director of Registration and Academic Records Search at the Minnesota State University, Mankato.
- **AFNR Co-convenor** **2021-present**
Serving as a co-convenor for the Agriculture Food and Natural Resources (AFNR) affinity group at the Minnesota State University, Mankato.
- **Marching Faculty for the Fall 2021 Commencement** **2021**
Involved as a marching faculty for the Fall 2021 Commencement, Minnesota State University, Mankato.
- **Grant Reviewer** **2021**
Served as a reviewer for the Fall 2021 Grant Cycle for Undergraduate Research Center (URC), Minnesota State University, Mankato.
- **Moderator and Judge for Undergraduate Oral Presentations** **2021**
Served as a moderator and judge for the 2021 Undergraduate Research Symposium (URS), Minnesota State University, Mankato, held on April 15, 2021.
- **Scholarship Committee Member** **2020-2022**
Served as a member of the Scholarship Committee in the Department of Biological Sciences, Minnesota State University, Mankato.
- **CELT Teaching Symposium** **2019**
Volunteered in helping lead the Center for Excellence in Learning and Teaching (CELT) Symposium Teaching Assistant (TA) Training at Iowa State University. Shared tips on how to rock the first day, read different scenarios, guided TA teams in solving the scenarios, and helped them to become successful.
- **Student Job Shadow for AMS 8th Grade Career Day** **2019**

An 8th grade student from Ames Middle School shadowed me to gain different perspectives of my profession.

- **Judge for Junior High Students' Projects** 2019
State Science and Technology Fair of Iowa (SSTFI), Iowa State University (ISU) Extension & Outreach, ISU Extension 4-H Youth Development, IA, USA on March 29.
- **Judge for Oral Presentations** 2018
11th Annual Graduate Minority Assistantship Program (GMAP) Research Symposium, Iowa State University, IA, USA on November 3.
- **Vice President** 2018 – 2019
Iowa State University-Postdoctoral Association (ISU-PDA)
- **Search Committee Member** 2018
Interviewed 4 candidates for the position of Associate Dean of the Graduate College, Iowa State University, in a joint Graduate student / Postdoc interview session, May 7-11.
- **ISU Graduate College Careers - Industry Advisory Board Member** 2018 – Present
- **Judge for 3 Minute (3 MT) Thesis competition** 2018
5th Graduate and Professional Student Research Conference (GPSRC), Iowa State University, IA, USA on April 11.
- **Secretary** 2017 – 2018
Iowa State University-Postdoctoral Association (ISU-PDA)

PROFESSIONAL:

- **US Compost Council Young Professionals Scholarship Program** 2025 – present
Serving as a member of the USCC Young Professionals Scholarship Program
- **Clay Research Editorial Board** 2023 – present
Serving as a member of the [Editorial Board of Clay Research](#).
- **Frontiers in Agronomy Editorial Board** 2023 – present
Serving as Review Editor on the [Editorial Board of Agroecological Cropping Systems](#) (specialty section of *Frontiers in Agronomy*).
- **Judge for Graduate Student Oral Presentations** 2022
Global Climate Change Division's graduate student competitions for oral presentations at the 2022 ASA-CSSA-SSSA International Annual Meeting.
- **Topic Coordinator** 2022 – 2023
Served as a topic coordinator for the special research topic titled "[Towards 2030: A Soil Biology, Ecosystems and Biodiversity Perspective on Achieving Sustainable Development Goal 13 Climate Action](#)" in the [Frontiers in Soil Science](#) journal.
- **Journal Reviewer** 2015 – Present
Reviewed manuscripts for the following journals:
 - ✓ *Agricultural Systems Journal* published by ScienceDirect
 - ✓ *Decode 6, the new education from the Agronomy, Crop, and Soil Science Societies*
 - ✓ *Land Degradation and Development* published by Wiley Online Library.
 - ✓ *Water — Open Access Journal* published by MDPI.

- ✓ *Agriculture* — Open Access Journal published by MDPI.
- ✓ *Computers and Electronics in Agriculture* published by Elsevier.
- ✓ *Sustainability* — Open Access Journal published by MDPI.
- ✓ *International Journal of Hygiene and Environmental Health* published by Elsevier.
- ✓ *Water, Air, & Soil Pollution* published by Springer.
- ✓ *Journal of Sustainable Water in the Built Environment* published by American Society of Civil Engineers (ASCE).
- ✓ *Agronomy Journal*, published by Soil Science Society of America (SSSA).
- ✓ *Soil Science Society of America Journal*, published by John Wiley & Sons, Ltd.
- ✓ *Environmental Earth Sciences* published by Springer Nature.
- ✓ *Agrosystems, Geosciences & Environment* published by Soil Science Society of America (SSSA).
- ✓ *PLOS One* published by the Public Library of Science.
- ✓ *Journal of Environment Management* published by Elsevier.
- ✓ *Journal of Crop Improvement* published by Taylor & Francis.
- ✓ *Scientific Reports* published by Nature Research.
- ✓ *Florida Scientists* published by Florida Academy of Sciences, Inc.
- ✓ *Marine and Freshwater Research*, published by Commonwealth Scientific and Industrial Research Organization (CSIRO) publishing.
- ✓ *CLEAN-Soil, Air, Water* published by Wiley Online Library.
- ✓ *JOJ Horticulture & Arboriculture (JOJHA) journal* published by Juniper Publishers.

▪ **Judge for Graduate Student Oral Presentations** 2020
Soil and Water Management and Conservation (SWMC) Division's graduate student competitions for oral presentations at the 2020 ASA-CSSA-SSSA Virtual Annual Meeting.

▪ **Judge for Graduate Student Poster Presentations** 2020
Graduate student competitions for poster presentations at the 2020 ASA-CSSA-SSSA Virtual Annual Meeting.

▪ **Member of the Reviewer Board** 2020 – Present
Microorganisms, MDPI (a pioneer in scholarly open access publishing) (https://www.mdpi.com/journal/microorganisms/submission_reviewers).

▪ **Associate Editorial Board Member** 2017 – Present
JOJ Horticulture & Arboriculture (JOJHA) journal of Juniper Publishers (<http://juniperpublishers.com/jojha/editorialboard.php#1684>).

▪ **Associate Editorial Board Member** 2017 – 2019
Advances in Agriculture and Environmental Science: Open Access (AAEOA) journal of Ology Press (<http://ologyjournals.com/aaeoa/editorialBoardMembers>).

▪ **Judge for Undergraduate Poster Session** 2017
Students of Agronomy, Soils and Environmental Sciences (SASES) research poster symposium on October 23 at the ASA-CSSA-SSSA Annual Meeting, Tampa, FL, USA.

▪ **Session Moderator** 2017
Nutrient Management and Soil and Plant Analysis division's general oral session on October 24 at the ASA-CSSA-SSSA Annual Meeting, Tampa, FL, USA.
<https://scisoc.confex.com/scisoc/2017am/webprogram/Session16596.html>

- **Session Organizer and Moderator** **2016**
“[Dynamics of pollutant transport beneath onsite wastewater systems poster \(includes student competition\)](#)”, Soils and Environmental Quality division, ASA-CSSA-SSSA Annual Meeting, Phoenix, AZ, USA.

COMMUNITY:

- **Service to the Mankato, MN community** **2021 – 2022**
Engaged and educated K-5 students from Prairie Wind Middle School students and Mankato East/West High School students about soil health, sustainable agriculture, and water quality through lectures, discussions, social media, movie nights, weblinks and hands-on work sessions with farmers, ranchers, and NRCS staff at several field days.
- **Co-Founding member of a non-profit [501 (c)(3)] organization** **2013 – Present**
‘*Bidyang-dehi, Educating Young Minds of India* (<http://bidyangdehi.org/>; EIN/Tax ID: 86-2974017)’, which supports aspiring students from economically challenged backgrounds in India to fulfill their future career goals.

PROFESSIONAL AFFILIATIONS

- Inter Faculty Organization (IFO) **2021 – Present**
- Soil Ecology Society (SES) **2020 – Present**
- Soil Science Society of America (SSSA) **2013 – Present**
- American Society of Agronomy (ASA) **2013 – Present**
- Crop Science Society of America (CSSA) **2013 – Present**
- Soil and Water Conservation Society (SWCS) **2020 – 2021**
- **Lifetime Member** of The Association of Agricultural Scientists of Indian Origin (AASIO) **2020 – Present**
- Practical Farmers of Iowa (PFI) **2017 – 2021**
- National Postdoctoral Association (NPA) **2018 – 2020**
- Sigma Xi The Scientific Research Honor Society **2018 – 2019**
- Florida Lake Management Society (FLMS) **2015 – 2016**
- Society of Environmental Toxicology and Chemistry (SETAC) **2013 – 2014**

EXTENSION/OUTREACH

- **An interview with [KARE 11 News](#)** **2025**
I was interviewed on July 24th with [KARE 11 News](#) to discuss current rainfall trends and its potential impact on crops and soils.
- **[Field Day at Blue Earth Farms](#)** **2024**
I partnered with Blue Dirt Farm to host a Field Day event (Aug 12th) which showcased a unique method of farming. The new farming method uses perennial cover crops along with live turkeys as fertilization. The event brought together local researchers and farmers for on-site demonstrations, including soil respiration tests, SLAKE tests, weed management and a rainfall simulator.
- **[KEYC News Now \(Kato Living segment\)](#)** **2024**

I really enjoyed being on [KEYC News Now \(Kato Living segment\)](#) with Mr. Scott Haase from Blue Dirt Farm to discuss our research and the upcoming Field Day event (August 12th at 5 pm).

- **Podcast:** An interview with [KMSU 89.7 FM Radio](#). 2024
An interview with [KMSU 89.7 FM Radio](#) where I talked about how to regenerate soil health and enhance corn productivity in the U.S. Corn Belt through perennial cover crops and poultry integration. Aired on 28th March 2024 during the "Every Day is Earth Day" segment.
- **Earth Day Celebration at Minnesota State University, Mankato** 2023
Volunteered and designed a soil biology demo station to discover the hidden world of soil biodiversity under your feet and learn how soil scientists study soil biology (e.g., soil decomposition using bury your undies and soil respiration using Solvita CO₂ Burst Method).
- **[FloraFunga Podcast](#)** 2023
I was invited to this [podcast episode](#) to cover some topics related to water cycle, corn sweat, soil health and water quality.
- **Elementary Experiential Learning Opportunities** 2022
I was invited by Kim Hermer, Career Development Specialist, Mankato Area Public Schools, to speak about soil and water quality and perform hands-on activities with K-5 summer school students at Prairie Winds Middle School, Mankato, MN.
- **Field Days** 2021 – 2022
Organized several field days to engage and educate Mankato East/West High School, MN students about soil health and sustainable agriculture through lectures, discussions, social media, movie nights, weblinks and hands-on work sessions with farmers, ranchers, and NRCS staff.
- **Podcast:** An interview with [KMSU 89.7 FM Radio](#). 2021
An interview with [KMSU 89.7 FM Radio](#) where I talked about how soil management can greatly reduce global warming and contribute to the future health of the planet. Aired on 8th July 2021 during the "Every Day is Earth Day" segment.
- Participated in a field day to learn more about Agricultural Drainage + Future of Water Quality at the Southern Minnesota. 2020
- Participated in a field day to learn more about Soil Health research projects at the Faribault county, Blue Earth, MN. 2020
- Participated in a field day to learn more about water quality research projects at the Uthe Farm near Ames, IA. 2019
- Participated in **Iowa Soybean Research Center Summer Farm Tour**. 2019
- Volunteered at the **Farm Progress Show** where we had a soil biology/soil health demo table (e.g., what underwear can or cannot tell you about soil health; Soil respiration using Solvita CO₂ Burst Method) in the Iowa State University tent. 2018
- Participated in **Iowa Soybean Research Center Summer Farm Tour**. 2018
- Presented at **fields days** (e.g., demo plots; *in-situ* buried bag N mineralization study). 2016
- Attended **Idaho Dairy Men's Association (IDA) workshops**. 2016
- Visited **soil-testing labs**. 2016
- Presented at **Master Gardener training** to show hands-on experiments. 2016
- In-person conversation with farmers, industry people and other stakeholders. 2007 – present
- **Rural Agricultural Work Experience (RAWE)** for 6 months as organized by BCKV, WB, India. 2007

- **Block Training** for 15 days under the supervision of Agriculture Development Office, Malda, WB, India. **2007**

MEDIA NEWS

- **An interview with [KARE 11 News](#)** **2025**
I was interviewed on July 24th with [KARE 11 News](#) to discuss current rainfall trends and its potential impact on crops and soils.
- **[KEYC News Now \(Kato Living segment\)](#)** **2024**
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- **[FloraFunga Podcast](#)** **2023**
I was invited to this [podcast episode](#) to cover some topics related to water cycle, corn sweat, soil health and water quality.
- **University Magazine** **2022**
One of my MNSU research was covered by [Elements Magazine, Issue 5, 2024, CSET, Minnesota State University \(MNSU\), Mankato](#) (see pages # 8-11).
- **News Article by the NCR-SARE** **2022**
North Central Region (NCR) Sustainable Agricultural Research Education (SARE) provided Youth Educator grants to help introduce new and exciting farming and ranching options to youth, families, and community members. Based on our work, NCR-SARE published an article titled "[Farm to Fork: Sustainable Ag for Minnesota Teens.](#)"
- **University Magazine** **2022**
One of my MNSU research was covered by [Elements Magazine, Issue 4, 2022, CSET, Minnesota State University \(MNSU\), Mankato](#) (see pages # 8-9).
- **News Article in the *Iowa Farmer Today* or Ag|UPDATE** **2022**
Iowa Nutrient Research Center (INRC) supported research at Iowa State University explores tile impact on streams. This work was covered by [Iowa Farmer Today](#) or [Ag|UPDATE](#) on April 25, 2022.
- **News Article in the *Iowa Nutrient Research Center*** **2022**
An innovative Iowa Nutrient Research Center (INRC) supported research at Iowa State University explores impacts of tile drainage water quality on streams. This work was covered by [Iowa Nutrient Research Center \(INRC\) on April 07, 2022.](#)
- **Podcast at KMSU 89.7 FM Radio** **2021**
An interview with [KMSU 89.7 FM Radio](#) where I talked about how soil management can greatly reduce global warming and contribute to the future health of the planet. Aired on 8th July 2021 during the "Every Day is Earth Day" segment.

- **Top Downloaded Article** 2019 – 2020
Our [research paper](#) published in *Soil Science Society of America Journal*, had been recognized as one of the top downloaded articles in 2019-2020.
- **Social Media** 2017
A brief description of my research profile was featured at Iowa State University's Department of Agronomy [Facebook](#) page.
- **CSA News Magazine – Research Highlights** 2016
Paper (De and Toor, 2016) published in *Journal of Environmental Quality* was selected for promotion in the September 2016 issue of the ASA-CSSA-SSSA's CSA News magazine and/or on "[Research Highlights](#)" webpages.
- **Newsletter** 2016
Invited to publish a short article in the Florida Lake Management Society (FLMS) - [Summer 2016 newsletter](#).
- **Cover Image** 2015
One of my PhD research aspects was used as cover image in [Vadose Zone Journal, Volume 14, Issue number 12, December 2015](#). **Cover caption:** "Experiment site for a study of how septic systems as a potential source of nitrogen in shallow groundwater."
- **Agriculture Magazine** 2013
PhD research work was interviewed and reported in the [November 2013 Edition of "IN THE FIELD" Agriculture magazine](#) (See pages # 77-78).

HONORS AND AWARDS

- **2024 Douglas R. Moore Faculty Research Award** 2023
The recipient of the [2024 Douglas R. Moore Faculty Research Award, Minnesota State University, Mankato](#).
- **Minnesota SARE Travel Scholarship** 2022
Received a Minnesota SARE Travel Scholarship to attend 2022 ASA-CSA-SSSA International Annual Meeting, November 6-9, Baltimore, MD, USA.
- **2022 SSSA Outstanding Paper Award** 2022
My article, "[Soil health recovery after grassland reestablishment on cropland: The effects of time and topographic position](#)," published in *Soil Science Society of America Journal* (SSSAJ) has been selected as the [2022 Soil Science Society of America \(SSSA\) Outstanding Paper](#).
- **Postdoctoral Travel Grant** 2018
Received travel grant to attend National Postdoctoral Association Annual Conference, April 6-8, Cleveland, OH, USA.
- **Graduate Student Travel Grant** 2015
Attended 26th Annual Florida Lake Management Society (FLMS) Technical Symposium, Naples, FL, USA.
- **Award (\$300)** 2014
1st prize in Poster Competition at Florida Ag. Expo, GCREC-Balm, Wimauma, FL, USA.

- ***Award (\$300)*** **2012**
1st prize in Poster Competition at Florida Ag. Expo, GCREC-Balm, Wimauma, FL, USA.
- ***Scholarship*** **2011 – 2015**
Graduate Research Assistantship (GRA) at University of Florida, FL, USA.
- ***Nomination*** **2008 – 2009**
Nominated for the **US-India Agriculture Knowledge Initiative (AKI) Program** on International Water Management.
- ***Scholarship*** **2007 – 2009**
Junior Research Fellowship (JRF; Rank: 25) by Indian Council of Agricultural Research (ICAR).
- ***Scholarship*** **2003 – 2007**
University Merit Scholarship by Bidhan Chandra Krishi Viswavidyalaya, West Bengal, India.