

Andrea Basche

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[Google Scholar Profile](#)

[ResearchGate Profile](#)

Current Position

Assistant Professor, Cropping Systems, 60% Teaching, 40% Research

Start date: December 1, 2017

Education

Ph.D., 2015, Crop Production and Physiology & Sustainable Agriculture, Iowa State University, Ames, IA

M.A., 2010, Applied Climate Science, Columbia University, New York, NY

B.S., 2006, Biological Sciences, Fordham University, Bronx, NY

Awards

IANR, Dinsdale Family Faculty Award, 2022

Agronomy Society of America, Early Career Award, 2022

Family & Friends Recognition Award, Certificate of Recognition for Contributions to Students, 2022

CASNR, *Nominee*, Holling Family Inclusive Excellence Award, 2021

IANR, *Nominee*, Junior Faculty Recognition for Excellence in Research Award, 2020 & 2021

CASNR, *Nominee*, Dinsdale Family Faculty Award, 2020 & 2021

American Society of Agronomy, Extension Education Community Award, Digital Communications, On-Farm Research Network Team, 2019

CASNR, *Nominee*, Outstanding Teaching Award, 2018

Journal of Soil and Water Conservation, Best Research Paper for Impact and Quality, 2017

Refereed Publications

ORCID: / 0000-0001-6805-8522

Citations as of January 10, 2023

Google Scholar: h-index = 12, i10-index = 14, Citations = 1280 (since 2018)

Google Scholar: h-index = 13, i10-index = 15, Citations = 1422 (all)

Scopus: h-index = 11

a. Publications in Peer-Reviewed Journals

*Denotes student or postdoc mentee author; ^Corresponding author

Work initiated and published since beginning in my position highlighted as **UNL, 100% research team contribution unless otherwise noted**

Published 2018-2022 (n=15)

1. Krupek, F.S.* , Mizero, S.* , Redfearn, D., and **Basche, A.** 2022. Assessing how cover crops close the soil health gap at on-farm experiments. *Agricultural and Environmental Letters*.
<https://doi.org/10.1002/ael2.20088> (UNL) *Impact factor: 1.90*
2. Krupek, F.S.* , Redfearn, D., Eskridge, K.M. and **Basche, A.**, 2022. Ecological intensification with soil health practices demonstrates positive impacts on multiple soil properties: A large-scale farmer-led experiment. *Geoderma*. 409, 115594. <https://doi.org/10.1016/j.geoderma.2021.115594> (UNL)
Impact factor: 7.16, Citations: 6

3. Liebman, M., **Basche, A.**, Huong, T.X., Weisberger, D.A. 2021. How can cover crops contribute to weed management? A modelling approach illustrated with rye (*Secale cereale*) and *Amaranthus tuberculatus*. Weed Research. <https://doi.org/10.1111/wre.12508> (UNL, 25% contribution, supported conceptualization, analysis, writing and editing) *Impact factor: 2.18, Citations: 3*
4. **Basche, A.**[^], Krupek, F.* , Chatterjee, N.* , and Speth, C. 2021. Farm simulation platforms increase undergraduate skills and confidence in decision-support technologies. Natural Sciences Education. <https://doi.org/10.1002/nse2.20058> (UNL) *Impact factor: n/a, Citations: 0*
5. **Basche, A.**[^], and Carter, A. 2021. Training future agriculture professionals in landowner-tenant conservation decision-making. Natural Sciences Education. <https://doi.org/10.1002/nse2.20035> (UNL) *Impact factor: n/a, Citations: 0*
6. **Basche, A.**[^], Tully, K., Álvarez-Berríos N.L., Reyes, J., Lengnick, L., Brown, T., Moore Kucera, J., Schattman, R., Johnson, L.K., Roesch-McNally, G. 2020. Evaluating the untapped potential of US conservation investments to improve soil and environmental health. Frontiers in Sustainable Food Systems. <https://doi.org/10.3389/fsufs.2020.547876> (UNL, 90% contribution, led team in all components of the work, funding acquisition, conceptualization, data collection, analysis, writing and editing) *Impact factor: 4.49, Citations: 10*
7. Chatterjee, N.* , Archontoulis, S., Bastidas, A., Elmore, R., Proctor, C., **Basche, A.** 2020. Simulating alternative corn management for earlier cover crop introduction in corn-soybean rotation system. Agronomy Journal. <https://doi.org/10.1002/agj2.20377> (UNL) *Impact factor: 2.59, Citations: 6*
8. Nichols, V., Martinez-Feria, R., Weisberger, D., Carlson, S., Basso, B., **Basche, A.** 2020. Cover crops and weed suppression in the US Midwest: a meta-analysis and modeling study. Agricultural and Environmental Letters.5:e20022. <https://doi.org/10.1002/ael2.20022> (UNL, 33% contribution, supported conceptualization, data collection, analysis, writing and editing) *Impact factor: 1.90, Citations: 19*
9. Wirth-Murray, M.* and **Basche, A.**[^] 2020. Stimulating soil health within Nebraska’s Natural Resources Districts. Journal of Soil and Water Conservation. 75(4): 88A-93A. <https://doi.org/10.2489/jswc.2020.0512A> (UNL) *Impact factor: 2.41, Citations: 2*
10. DeLonge, M., Robbins, T., **Basche, A.**, Haynes-Maslow, L. 2020. The state of sustainable agriculture research and broader impacts: A survey of U.S. scientists. Journal of Agriculture, Food Systems and Community Development. 9(2):1-26. <https://doi.org/10.5304/jafscd.2020.092.009> *Impact factor: n/a, Citations: 9*
11. Francis, C., Young, R., Wortman, S., Kaiser, M., and **Basche, A.** 2019. International topics increase global awareness in Midwest crops and soils courses. NACTA Journal. 63: 131-138. (UNL, 15% contribution, supported data collection, writing and editing) *Impact factor: n/a, Citations: 0*
12. **Basche, A.D.**[^], DeLonge, M. 2019. Comparing infiltration rates in soils managed with conventional and alternative farming methods: a meta-analysis. PLoS ONE. 14(9) e0215702. <https://doi.org/10.1371/journal.pone.0215702> *Impact factor: 3.58, Citations: 120*
13. Roesch-McNally, G., **Basche, A.**, and Schewe, R. 2018. Climate change challenges require collaborative research to drive agrifood system transformation. Renewable Agriculture and Food Systems. 33(3): 195-196. <https://doi.org/10.1017/S1742170518000157> *Impact factor: 2.25, Citations: 4 (Special Issue Guest Editor)*
14. DeLonge, M. and **Basche, A.D.** 2018. Managing grazing lands to improve soil health, climate change adaptation and mitigation efforts: a global synthesis. Renewable Agriculture and Food Systems. 33(3): 267-278. <https://doi.org/10.1017/S1742170517000588> *Impact factor: 2.25, Citations: 29*
15. Roesch-McNally, G.E., **Basche, A.D.**, Arbuckle, J.G., Tyndall, J.C., Miguez, F.E, Bowman, T. and Clay, R.M. 2018. The trouble with cover crops: Farmers’ experiences with overcoming barriers to adoption. Renewable Agriculture and Food Systems. 33(4): 322-333. <https://doi.org/10.1017/S1742170517000096> *Impact factor: 2.25, Citations: 220*

Published 2017 and prior (n=10)

16. **Basche, A.D.**[^], DeLonge, M. 2017. The impact of continuous living cover on soil hydrologic properties: a meta-analysis. *Soil Science Society of America Journal*. 81(5): 1179-1190. <https://doi.org/10.2136/sssaj2017.03.0077> *Impact factor: 2.72, Citations: 80*
17. **Basche, A.D.**[^], and Edelson, O. 2017. Improving water resilience with more perennially-based agriculture. *Agroecology and Sustainable Food Systems*. 41(7): 799-824. <https://doi.org/10.1080/21683565.2017.1330795> *Impact factor: 2.49, Citations: 32*
18. Dankbar, H., Zimmerman, E., Chennault, C., **Basche, A.**, Nester, J., Pierre, M., Roesch-McNally, G. 2017. Lettuce learn: Student reflections on building and sustaining a community donation garden. *The Journal of Critical Thought and Praxis* 6(3): 71-85. *Impact factor: n/a, Citations: 3*
19. **Basche, A.D.**[^], and Roesch-McNally, G.E. 2017. Research topics to scale up cover crop use: reflections from innovative Iowa farmers. *Journal of Soil and Water Conservation*. 72(3): 59A-63A. <https://doi.org/10.2489/jswc.72.3.59A> *Impact factor: 2.41, Citations: 19*
20. DeLonge, M. and **Basche, A.** 2017. Leveraging agroecology for solutions in food, water and energy. *Elementa: Science of the Anthropocene*. 5: 6. <https://doi.org/10.1525/elementa.211> *Impact factor: 4.26, Citations: 28*
21. **Basche, A.D.**[^], Genareo, V., Leshem, A, Kissell, A. Pauley, J. 2016. Engaging middle school students through locally-focused environmental science project-based learning. *Natural Sciences Education*. 45(1): 1-10. <https://doi.org/10.4195/nse2016.05.0012> *Impact factor: n/a, Citations: 10*
22. **Basche, A.D.**[^], Kaspar, T.K., Archontoulis, S.A., Jaynes, D.B., Parkin, T.B., Sauer, T.S., Miguez, F.E. 2016. Soil water improvements with the long-term use of a cover crop. *Agricultural Water Management*. 172: 40-50. <https://doi.org/10.1016/j.agwat.2016.04.006> *Impact factor: 6.53, Citations: 263*
23. **Basche, A.D.**[^], Archontoulis, S.A., Kaspar, T.K, Jaynes, D.B., Parkin, T.B. Miguez, F.E. 2016. Simulating long-term impacts of cover crops and climate change on crop production and environmental outcomes in the Midwestern United States. *Agriculture, Ecosystems and the Environment*. 218: 95-106. <https://doi.org/10.1016/j.agee.2015.11.011> *Impact factor: 6.26, Citations: 197*
24. **Basche, A.D.**[^], Miguez, F.E., Kaspar, T.K., and Castellano, M.J. 2014. Do Cover Crops Increase or Decrease Nitrous Oxide Emissions? A Meta-Analysis. *Journal of Soil and Water Conservation*. 69(6): 471-482. <https://doi.org/10.2489/jswc.69.6.471> *Impact factor: 2.41, Citations: 316*
25. **Basche, A.D.**[^] et al. 2014. Challenges and Opportunities in Transdisciplinary Science: Graduate Student Experiences in a Climate and Agriculture Research Collaboration. Invited Commentary. *Journal of Soil and Water Conservation*. 69(6): 176A-179A. <https://doi.org/10.2489/jswc.69.6.176A> *Impact factor: 2.41, Citations: 15*

b. Book Chapters

1. Roesch-McNally, G. E., Nester, J., **Basche, A.**, Christianson, E. and Zimmerman, E. 2018. Hunger in the Land of Plenty: Local Responses to Food Insecurity in Iowa. *Food and Poverty: Food Insecurity and Food Sovereignty among America's Poor*. Edited Volume, Linda Hossfeld, E. Brooke Kelly, and Julia Waity. *Citations: 3*

c. Indexed Datasets

1. **Basche, A.**[^], Tully, K., Álvarez-Berríos, N.L., Reyes, J., Lengnick, L., Brown, T., Moore, J.M., Schattman, R.E., Roesch-McNally, G. 2020. Environmental Quality Incentives Program (EQIP) U.S. data at state, county and individual practice level for soil and environmental health, 2009-2018. Fort Collins, CO: Forest Service Research Data Archive. <https://doi.org/10.2737/RDS-2020-0076>
2. Nichols, V., **Basche, A.**, Weisberger, D. 2020. Effect of cover crops on weed biomass and density in the US Midwest Corn Belt meta-analysis dataset. Iowa State University. <https://doi.org/10.25380/iastate.11933214.v1>

9. Grants Received

*delineated by sole lead PI, lead UNL PI from collaborative award, Co-PI awards

Title	Funding source	UNL Co-PIs	Funding	Years
Lead PI Awards				
Expanding crop and soil education through high school and graduate student partnerships: Public Information and Education mini-grant	Nebraska Academy of Sciences	-	\$5,000	2023
Cover Crop Initiative: A collaborative project to advance knowledge and utilization of cover crops for conservation measures in Nebraska	USDA NRCS	Katja Kohler Cole, Cody Creech, Amanda Easterly, Bijesh Maharjan	\$1,049,500	2021-2025
Climate Solutions course agriculture module development	Brown University	-	\$10,000	2021-2022
Developing a decision-support tool for the successful incorporation of cover crops into Nebraska cropping systems	Nebraska Environmental Trust	Katja Kohler-Cole, Daren Redfearn	\$111,610	2019-2021
Partnering in conservation: Engaging women farmland owners and their tenants in collaborative conservation planning	USDA SARE	-	\$40,000	2019-2022
Nebraska Soil Health Initiative	USDA NRCS	Daren Redfearn, Rick Rasby	\$314,184	2018-2023
Soil as a social ecological feedback: Mapping the social and ecological processes for agroecosystem resilience in the era of climate change	National Science Foundation, Socio-environmental Synthesis Center	-	\$75,000 (estimated)	2018-2020
Lead UNL PI on Collaborative Awards				
Title	Funding source	Lead Institution	Funding	Years
Catalyzing a cover crop seed industry	USDA NIFA	University of Missouri	\$512,000	2023-2028
ADM and Partners Climate Smart Solutions	USDA NRCS, Climate Smart Commodities Program	ADM	\$420,725	2023-2027
Assessment of Ecosystem Service Marketplace Programming	Ecosystem Services Market Consortium	University of Maine	\$16,119	2021-2022
Enhancing adoption of regenerative agriculture in U.S. wheat farming systems	General Mills	University of Maine	\$61,702	2020-2022
A cover crop network for enhancing the sustainability of US cropping systems	USDA NIFA	North Carolina State University	\$370,607	2019-2024
Developing and deploying a perennial grain crop enterprise to improve environmental quality and rural prosperity	USDA NIFA	University of Minnesota	\$216,000	2020-2025
Co PI Awards				

Title	Funding source	Lead PI	Funding	Years
Impacts of conservation practices on the water quality and quantity in Shell Creek Watershed, Nebraska	Nebraska Department of Environment and Energy	Tirthankar Roy	\$318,300	2021-2024
Investigating Crop Yield Relationships and the National Crop Productivity Index	USDA NRCS	Yi Qi	\$151,396	2019-2023
Cover crop impacts on soil health and cropping system yields	Nebraska Corn Board	Katja Koehler-Cole	\$101,825	2018-2020
Total PI Awards (Sole PI & UNL PI Lead on Collaborative Awards)			\$ 3,192,447	
Total Co-PI Awards			\$ 571,521	
Total Awards Received			\$ 3,763,968	

Academic and Professional Experiences

Assistant Professor, Cropping Systems, University of Nebraska, Lincoln, NE (2017-Present)
AAAS Science and Technology Policy Fellow, USDA-NIFA, Washington, DC (2017)
Kendall Science Fellow, Union of Concerned Scientists, Washington, DC (2015-2017)
Graduate Research Assistant and Teaching Fellow, Iowa State University, Ames, IA (2011-2015)
Teaching Assistant, Columbia University, New York, NY (2010-2011)
Digital Account Manager, Smithsonian Business Enterprises (2008-2009)
Sales Planner and Manager, CBS Interactive, New York, NY (2006-2008)

Professional Memberships

American Society of Agronomy, Crop Science and Soil Sciences Member (12 years)
Soil and Water Conservation Society (8 years)

Professional Service

National Climate Assessment, U.S. Global Change Research Program, 5th Assessment Contributing Author, 2021-present
Soil Health Institute Science Advisory Committee, 2020-present
Crop Science Society of America, Policy Committee, 2019-present
Associate Editor, Frontiers in Agronomy, 2021-present
Associate Editor, Agronomy Journal, 2019-2021

Invited Presentations and Seminars

52 total since December 1, 2017; 5 planned for 2023; Select invited presentations below

- Oregon State University, Water Resources Graduate Program Seminar, Oct. 2022
- University of California-Davis, Department of Plant Sciences Seminar, Feb. 2022
- ASA-CSSA-SSSA Annual Meeting, Environmental Quality Mega-Symposium, Nov. 2021
- Colorado State University, Department of Soil and Crop Sciences Seminar, Oct. 2021
- University of Minnesota, Department of Soil, Water and Climate Seminar, March 2021
- The Ohio State University, School of Environment and Natural Resources Seminar, Oct. 2020
- Metropolitan Community College, Hubbard Sustainability Series, Oct. 2020.
- University of Nebraska-Lincoln, Heuermann Lecture Series Speaker, Nov. 2019
- Congressional Soils Caucus Briefing, Sept. 2019