

# 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/acl.2.20088> (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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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/acl2.20022> (UNL, 33% contribution, supported conceptualization, data collection, analysis, writing and editing) *Impact factor: 1.90, Citations: 19*
9. Wirth-Murray, M.\* and **Basche, A.**<sup>^</sup> 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup>, 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.**<sup>^</sup> 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.**<sup>^</sup>, Tully, K., Álvarez-Berrios, 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				

<b>Title</b>	<b>Funding source</b>	<b>Lead PI</b>	<b>Funding</b>	<b>Years</b>
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, 5<sup>th</sup> 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