

CURRICULUM VITAE

Rajan Ghimire, Ph.D.

New Mexico State University
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1. EDUCATION

Ph.D., Soil Science (Soil Biogeochemistry), 2013, University of Wyoming, Laramie, WY

M.Sc. Soil Science (Ecology and Fertility), 2006, Tribhuvan University, Nepal

B.Sc. Agriculture, 2004, Tribhuvan University, Nepal

2. PROFESSIONAL EXPERIENCE

Associate Professor (July 2022 – Present), New Mexico State University, Agricultural Science Center, Clovis, NM (Affiliated department: Plant and Environmental Sciences)

Assistant Professor (Oct. 2015 – June 2022), New Mexico State University, Agricultural Science Center, Clovis, NM (Affiliated department: Plant and Environmental Sciences)

Visiting Scholar (Jan. 2017- Dec. 2021), Northwest University, Xi'an, China

Postdoctoral Scholar (Jan. 2014 – Sept. 2015), Oregon State University, Columbia Basin Agricultural Research Center, Pendleton, OR

Research Associate Sr. (June 2013 – Dec. 2013), University of Wyoming, Department of Ecosystem Science and Management, Laramie, WY

Graduate Assistant (Aug. 2009 – May 2013), University of Wyoming, Department of Ecosystem Science and Management, Laramie, WY

Visiting Scientist (May – July 2008), Wageningen University and Research Centre/ Louis Bolk Institute, the Netherlands

Lecturer of Soil Science (June 2006 – July 2009), Tribhuvan University, Institute of Agriculture and Animal Sciences, Nepal

Senior Research Assistant (May 2006 – July 2009), Ecological Services Centre, Nepal.

Graduate Assistant (2004 – 2006), Tribhuvan University, Institute of Agriculture and Animal Sciences, Nepal

3. LEADERSHIP

Chair of the Scientific Committee, 2022, Third NAPA Biennial International Scientific Conference, May 27-29, 2022, Atlanta, Georgia

Chair of Ad-hoc Committee, 2021, Establishment of National Center on Carbon Sequestration and Soil Health in Arid and Semiarid Regions, New Mexico State University, College of Agricultural, Consumer and Environmental Sciences

Presiding Leader, 2021 (Vice-Leader, 2020), Soil Carbon and Greenhouse Gas Emissions, American Society of Agronomy

Presiding Leader, 2019 (Vice-Leader, 2018), Global Climate Change Community, American Society of Agronomy

Chair, 2018-2019, Scholarship management committee, Association of Nepalese Agricultural Professionals in Americas

Secretary and Treasurer, 2017-2019, Western Society of Crop Science

Scientific Committee Member, 2016-2020, First through fifth International Conference on Mountains in the Changing World (<https://conference.kias.org.np/>)

Vice President, Center for Agricultural Research and Development Nepal, 2013-2020

Invited Presentations and Lectures

1. Conservation cropping systems for semi-arid regions: impacts on soil health, carbon sequestration, and agricultural sustainability. Fresno State University, September 2022.
2. Strategies for soil health and carbon management in semi-arid environments. Symposium on Continuing the Legacy of Cynthia Cambardella: Soil Health as the Cornerstone of Organic Agriculture, Salt Lake City, UT, November 2021.
3. Enhancing soil health for economic and environmental sustainability of cropping systems in the Pacific Northwest, Pullman, WA, September 2021.
4. Soil health management systems for semiarid regions. Public Speaking Seminar and Workshop for Agriculture Graduates, USA-Nepal Community Outreach Network, Virtual Platform, August 2020.
5. Improving soil health and resilience in the Southern Ogallala Aquifer region: Examples from Eastern New Mexico. Department of Crop and Soil Science, Texas Tech University, Lubbock, TX, March 2019.
6. Conservation technologies for sustainable crop production: Implications for agriculture in Nepal. NeSA 10th International Conference on Role of Diaspora for Sustainable Homeland, Las Cruces, NM, March 2018.
7. Approaches to improve soil health and sustainability in the Southern Ogallala Aquifer region. Grazing Land Research Laboratory, El Reno, OK, January 2017.
8. Improving agricultural sustainability in the drylands of US High Plains. Northwest University, Xian, China, December 2017.
9. Soil organic matter management in dryland soils. Nepalese Society of Soil Science talk series, Khumaltar, Nepal, January 2017.
10. Monitoring and modeling crop yield in a dryland winter wheat-summer fallow system using the DAYCENT model, Workshop on Water and Energy Innovation for Food Security and Environmental Sustainability, Beijing, China, June 2016.

11. Sustainable Practices in Small-holder Agriculture: Case Studies from Mountains and Plains of Nepal, NeSA 8th International Conference on Role of Diaspora for Sustainable Homeland, Las Cruces, NM, March 2016.
12. Soil and nutrient management strategies for sustainable dryland and irrigated cropping systems. Montana State University, Bozeman, MT, February 2015.
13. Sustainable forage production in the semiarid West, Eastern Oregon University, La Grande, OR, April 2015
14. Management systems influence soil organic matter and microbial community structure in Great Plains of the USA, Agriculture and Forestry University, Rampur, Nepal, December 2013.
15. Crop rotation and management approach influence soil organic carbon, microbial communities, and greenhouse gas emissions. Columbia Basin Agriculture Research Centre, Pendleton, OR, September 2013.

4. HONORS AND AWARDS

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| 2022 | Outstanding Service Award, Association of Nepalese Agricultural Professionals of Americas |
| 2021 | Outstanding Associate Editor, Agronomy Journal |
| 2021 | Interdisciplinary Team Award, Vice-President of Research, Colorado State University (Ogallala CAP Project) |
| 2020 | Emerging Scientist Award, Western Society of Crop Science |
| 2020 | Certificate of Top Article of 2019, Journal of Integrative Agriculture |
| 2017 | Certificate of Appreciation for Outstanding Contribution in Soil Science, Nepalese Society of Soil Science, Kathmandu, Nepal |
| 2013 | Student Travel Fellowship and Poster Awards (1st place), NSF-EPSCoR Workshop in Bioinformatics to Foster Collaborative Research |
| 2012 | Student Poster Award (2nd place) in the Western Society of Soil Science,
Student Poster Award (3rd place) in the Great Plains Soil Fertility Conference,
Department of Ecosystem Science and Management Travel Award |
| 2011 | Gerald “Jerry” E. Schuman Graduate Fellowship in Soil Science,
UW Excellence Award and Eldon and Josephine Johnston Family Graduate
Fellowship for Research, and Department of Ecosystem Science and Management
Travel Award |
| 2010 | Robert L. Lang Graduate Fellowship and Graduate Student International Travel
Award |
| 2009 | Travel Award, University Grant Commission of Nepal for conference participation,
Fourth World Congress on Conservation Agriculture, New Delhi, India |

2005- Research Fellowship, Soil Management – Collaborative Research Support Program
2006 (SM-CRSP), Cornell University, USA

5. PROFESSIONAL SOCIETIES

2020 - Present Soil and Water Conservation Society
2018 - Present American Geophysical Union
2016 – Present Nepalese Agricultural Professionals in the Americas
2011– 2018 Member of the American Association for the Advancement of Science
2011 – Present Member of honor society “Phi Kappa Phi”
2010 - Present Member of Soil Science Society of America
2010 – Present Member of the American Society of Agronomy
2010 – Present Member of “Gamma Sigma Delta” the Honor Society of Agriculture
2010 – 2012 Member of Soil and Water Conservation Society
2007 – 2015 Member of Society of Agricultural Scientists-Nepal

6. RESEARCH

Manuscripts under Review/Revision (*graduate student/postdoc, **corresponding author)

1. Bista, D., S. Sapkota, R. Acharya, P. Acharya, and **R. Ghimire**. Energy and carbon economics of cover cropping in a semi-arid irrigated agriculture. *Journal of Cleaner Production*
2. Paye, W.S., **R. Ghimire**, P. Acharya, L.M. Lauriault. Plant biomass and nutrient inputs regulates soil organic carbon and nitrogen responses in semi-arid landscape transitioning to dryland farming. *Agriculture Ecosystems and Environment*.
3. Jaishi, A., B.R. Khanal, B.S. Acharya, S. Bhatta, R.P. Dhakal and **R. Ghimire**. 2022. Urine-enriched biochar improves soil health and plant nutrient uptake in an Inceptisol. *Soil Systems*.
4. Gyawali A.J., H.L. Neely, J. Foster, C. Neely, K. Lewis, G. Bodine, J. Pintar, **R. Ghimire**, P. Bekewe, A.P. Smith. Assessing the assessment: How well does SMAF work in South-Central Texas? *Geoderma Regional*.
5. **Ghimire, R.** **, V.R. Thapa, V. Acosta-Martinez, M. Schipanski, S.J. Fonte, M.K. Shukla, S.V. Angadi, M.M. Mikha, L.C. Slaughter, O. Adebayo, T.N. Strohm, and P. Bista. 2023 Soil health assessment and management framework for water-limited environments: overview of studies from the Great Plains, USA. *Soil Systems*.
6. Wang, J., N. Zhang, F. Zhao, **R. Ghimire****, C. Ren. 2022. Mulching practices decreased the abundance of microbial functional genes involved in P cycling in a maize field. *Applied Soil Ecology*

7. Nilahyane, A., D.S. Ashilenje, E. Amombo, A. Hirich, **R. Ghimire**, K.P. Devkota, L. Kouisni. 2023. Mechanisms of blue panicum grass and alfalfa mixtures override soil salinity and enhance microbial activities in extremely saline soils. *Field Crops Research*.
8. Thapa, V.R., **R. Ghimire**, K.P. Adhikari, and S. Lamichhane. Soil organic carbon sequestration in arid and semi-arid regions by conservation systems: a review. *Journal of Arid Environments*
9. Gautam, S., U. Mishra, C. Scown, and **R. Ghimire**. Increased drought and extreme events over continental United States under high emission scenario. *Environmental Research Letters*
10. Bista, P., V.R. Thapa, S.J. DelGrosso, M. Hartman, and **R. Ghimire**. Simulating greenhouse gas emissions under cover crops in semi-arid region. *Agriculture, Ecosystems, and Environment*.

Peer-reviewed Journal Papers (*graduate student/postdoc, ** corresponding author)

2023

1. Nilahyane, A., B.S. Acharya, **R. Ghimire****, M. Schipanski, C. West, and A. Obour. 2023. Overcoming sustainability challenges in Ogallala Aquifer region. *International Journal of Agricultural Sustainability* (Accepted with revision).
2. Paye, W.S., Thapa, V.R.*, **R. Ghimire****. 2023. Limited effects of occasional tillage on dry aggregate size distribution and soil carbon and nitrogen fractions in semi-arid drylands. *International Soil and Water Conservation Research* (Accepted with revision).
3. Acharya, P.*, **R. Ghimire****, M.A. Marsalis, E.A. Lehnhoff. 2023. Cover crops forage potential and subsequent forage sorghum yield and quality in water-limited environments. *Agronomy Journal* (Accepted).
4. Sapkota, S.*, **R. Ghimire****, S. Angadi, D. VanLeeuwen, P. Singh*, O.J. Idowu. 2023. Soil health responses to circular grass buffer strips in center-pivot irrigated agriculture. *Soil Science Society of America Journal*. <https://doi.org/10.1002/saj2.20495>.
5. Omer, M., O.J. Idowu*, N. Pietrasiak, D. VanLeeuwen; A.L. Ulery; A.J. Dominguez; **R. Ghimire**, and M. Marsalis. 2023. Agricultural practices influence biological soil quality indicators in an irrigated semiarid agro-ecosystem. *Pedobiologia*. <https://doi.org/10.1016/j.pedobi.2022.150862>.
6. Thapa, V.R.*, **R. Ghimire****, W.S. Paye, D. VanLeeuwen. 2023. Soil organic carbon and nitrogen responses to occasional tillage in a continuous no-tillage system. *Soil and Tillage Research*. <https://doi.org/10.1016/j.still.2022.105619>.

2022

7. **Ghimire, R.****, D. Clay, S. Thapa, and B. Hurd. 2022. More carbon per drop to enhance soil carbon sequestration in water-limited environments. *Carbon Management*. <http://dx.doi.org/10.1080/17583004.2022.2117082>.
8. Acharya, P.*, **R. Ghimire****, Paye, W.S.*, A. Ganguli and S.J. DelGrosso. 2022. Net greenhouse gas balance with cover crops in semi-arid irrigated cropping systems. *Scientific Reports*, 12, 12386. <https://doi.org/10.1038/s41598-022-16719-w>.

9. Paye, W.S.*, P. Acharya, **R. Ghimire****. 2022. Water productivity of forage sorghum in response to winter cover crops in semiarid irrigated conditions. *Field Crops Research*, <https://doi.org/10.1016/j.fcr.2022.108552>.
10. Zhang, S., J. Wang, U.M. Sainju, and **R. Ghimire**. 2022. Soil water storage, winter wheat yield, and water-use efficiency with cover crops and nitrogen fertilization. *Agronomy Journal*, <https://doi.org/10.1002/agj2.21028>.
11. *Acharya, P., **R. Ghimire****, V. Thapa, Y. Cho, and U.M. Sainju. 2022. Soil profile carbon, nitrogen, and crop yields affected by cover crops in semiarid regions. *Nutrient Cycling in Agroecosystems*, <https://doi.org/10.1007/s10705-022-10198-1>.
12. **Paye, W.S., **R. Ghimire†**, P. Acharya, A. Nilahyane, and A. Mesbah. 2022. Cover crop water use and corn silage production in semiarid irrigated conditions. *Agricultural Water Management*. 260:107275, <https://doi.org/10.1016/j.agwat.2021.107275>.
13. Thapa V.R.*, **R. Ghimire****, D. VanLeeuwen, V. Acosta-Martinez, and M.K. Shukla. 2022. Response of soil organic matter to cover cropping in water-limited environments. *Geoderma*, <https://doi.org/10.1016/j.geoderma.2021.115497>.
14. Sainju, U.M., S. Dangi, D. Liptzin, and **R. Ghimire**. 2022. Relationship between soil organic matter, soil properties, and dryland crop yields. *Agronomy Journal*. DOI: 10.1002/agj2.20938.

2021

15. Thapa, S., A. Bhandari, **R. Ghimire**, Q. Xue, F. Kidwaro, S. Ghatrehsamani, B. Maharjan, and M. Goodwin. 2021. Managing micronutrients for improving soil fertility, health, and soybean yield. *Sustainability*. 13: 11766. <https://doi.org/10.3390/su132111766>.
16. Joshi, D., **R. Ghimire**, T.P. Kharel, U. Mishra, and S. Clay. 2021. Conservation agriculture for food security and climate change resilience in Nepal. *Agronomy Journal*. <https://doi.org/10.1002/agj2.20830>
17. Sainju, U., D. Liptzin, S. Dangi, and **R. Ghimire**. 2021. Soil health indicators and wheat yield in response to long-term cropping sequence and nitrogen fertilization. *Applied Soil Ecology*. <https://doi.org/10.1016/j.apsoil.2021.104182>
18. Obour, A., L. Simon, M. Schipanski, J. Holman, P. Carr, S. Fonte, **R. Ghimire**, N. Thandi, and H. Blanco-Canqui. 2021. Cover crops to improve soil and crop productivity in the US Semi-arid Great Plains. *Agronomy Journal*. <https://doi.org/10.1002/agj2.20855>.
19. Wang, J., Zhang, S., U.M. Sainju, **R. Ghimire**, I. Muhammad, F. Zhao. 2021. A meta-analysis on cover crop impact on soil water storage, succeeding crop yield, and water-use efficiency. *Agricultural Water Management*. 256: 107085, <https://doi.org/10.1016/j.agwat.2021.107085>
20. **Ghimire, R.****, M.N. Parajulee, P. Acharya*, D. Dhakal, A. Hakeem, and K. Lewis. 2021. Soil acidification in a continuous cotton production system. *Agricultural and Environmental Letters*, <https://doi.org/10.1002/ael2.20048>.
21. Thapa, V.R.*, **R. Ghimire****, and M. Marsalis. 2021. Cover crops for resilience of a limited-irrigation winter wheat-sorghum-fallow rotation: soil carbon, nitrogen and sorghum yield responses. *Agronomy*, <https://doi.org/10.3390/agronomy11040762>.

22. Wang, J., Fu, X., **R. Ghimire**, U.M. Sainju, Y. Jia, and F. Zhao. 2021. Responses of soil carbon, nitrogen, enzyme, and bacteria to long-term fertilization. *Applied Soil Ecology*. <https://doi.org/10.1016/j.apsoil.2021.103992>.
23. Sainju, U., **R. Ghimire**, and S. Dangi. 2021. Soil carbon dioxide and methane emissions and carbon balance with crop rotation and nitrogen fertilization. *The Science of Total Environment*. <https://doi.org/10.1016/j.scitotenv.2021.145902>.
24. Paye, W., S. Begna, **R. Ghimire****, S.V. Angadi, P. Singh*, M.R. Umesh, and M. Darapuneni. 2021. Winter canola yield and nitrogen use efficiency in a semiarid irrigated condition. *Agronomy Journal*. <https://doi.org/10.1002/agj2.20611>
25. *Thapa, V.R., **R. Ghimire****, V. Acosta-Martinez, M. Marsalis, and M. Schipanski. 2021. Cover crop biomass and species composition affect soil microbial community structure and enzyme activities in semiarid cropping systems. *Applied Soil Ecology*. <https://doi.org/10.1016/j.apsoil.2020.103735>.

2020

26. **Ghimire, R.****, and B.R. Khanal. 2020. Soil organic matter dynamics in semiarid agroecosystems transitioning to dryland. *PeerJ* 8:e10199 <https://doi.org/10.7717/peerj.10199>.
27. *Salehin, S.M., **R. Ghimire****, S. Angadi, and A.O. Mesbah. 2020. Soil organic matter, greenhouse gas emissions, and sorghum yield in semi-arid drylands. *Agrosystems, Geosciences and Environment*. 2020, 3:e20107. <https://doi.org/10.1002/agg2.20107>.
28. *Salehin, S.M., **R. Ghimire****, S.V. Angadi, O.J. Idowu. 2020. Grass buffer strips improve soil health and mitigate greenhouse gas emissions in center-pivot irrigated cropping systems. *Sustainability*. 12, 6014. DOI: 10.3390/su12156014.
29. *Omer, M., O.J. Idowu, A. Ulery, D. VanLeeuwen, S. Guldan, M. Marsalis, **R. Ghimire**. 2020. Impacts of selected long-term management practices on arid soil quality. *Journal of Soil and Water Conservation*. 75: 143-152.
30. Nilahyane, A.*, **R. Ghimire****, V.R. Thapa*, and U. Sainju. 2020. Cover crop effects on soil carbon dioxide fluxes in a limited-irrigated cropping system. *Agrosystems, Geosciences, and Environment*. DOI: 10.1002/agg2.20012.
31. Sainju, U., **R. Ghimire**, U. Mishra, S. Jagadamma. 2020. Reducing nitrous oxide emissions and enhancing crop yield with crop rotation and nitrogen fertilization. *Nutrient Cycling in Agroecosystems*. 116: 381–395. DOI: 10.1007/s10705-020-10046-0.

2019

32. Acharya, R.N., **R. Ghimire**, A. GC*, and D. Blayney. 2019. Effect of cover crop on-farm profitability and risk in the Southern High Plains. *Sustainability* 11(24), 7119. DOI: 10.3390/su11247119.
33. Bista, P., **R. Ghimire**, S. Machado, and L. Pritchett. 2019. Biochar effects on soil properties and wheat biomass vary with fertility management. *Agronomy*. 10.3390/agronomy9100623.

34. **Ghimire, R.****, P. Bista, and S. Machado. 2019. Long-term management effects and temperature sensitivity of soil organic carbon in grassland and agricultural soils. *Nature Scientific Reports*, (2019) 9:12151.
35. *Thapa, V.R., **R. Ghimire****, B. Duval, and M. Marsalis. 2019. Conservation systems for positive net ecosystem carbon balance in semiarid drylands. *Agrosystems, Geosciences, and Environment*. *Agrosystems, Geosciences & Environment*. 2:190022.
36. *Acharya, P., **R. Ghimire****, and Y. Cho. Linking soil health to crop production: Dairy compost application rates affect soil properties and sorghum biomass. *Sustainability* 2019, 11, 3552; DOI: 10.3390/su11133552.
37. **Ghimire, R.****, V.R. Thapa*, A. Cano, and V. Acosta-Martinez. 2019. Soil organic carbon and microbial community responses to croplands and grasslands management. *Applied Soil Ecology*. 141: 30-37.
38. *Muhammad, I., U.M. Sainju, A. Khan, F. Zhao, **R. Ghimire**, X. Fu, and J. Wang. 2019. Regulation of soil CO₂ and N₂O emissions by cover crops: a meta-analysis. *Soil and Tillage Research*. 192: 103-122.
39. Mesbah, A.O., A. Nilahyane, B. Ghimire*, L. Beck, **R. Ghimire****. 2019. Efficacy of cover crops on weed suppression, wheat yield, and water conservation in winter wheat-sorghum-fallow. *Crop Science*. 59: 1745-1752. DOI: 10.2135/cropsci2018.12.0753.
40. **Ghimire, R.****, B. Ghimire*, A.O. Mesbah, U. Sainju, and O.J. Idowu. 2019. Soil health response of cover crops in winter wheat-fallow system. *Agronomy Journal*. 111: 2108-2115. DOI: 10.2134/agronj2018.08.0492.
41. Sainju, U., **R. Ghimire**, and G. Pradhan. 2019. Dryland agroecosystem nitrogen balance with tillage, cropping sequence, and nitrogen fertilization. *Journal of Plant Nutrition and Soil Science*. 182: 374-384. <https://doi.org/10.1002/jpln.201800630>.

2018

42. *Thapa, V.R., **R. Ghimire****, M. Mikha, J. Idowu, and M. Marsalis. 2018. Land use systems effects on soil health in drylands. *Agricultural and Environmental Letters*. *Agricultural and Environmental Letters* 3:180022. DOI:10.2134/ael2018.05.002.
43. **Ghimire, R.****, J.B. Norton, and U. Norton. 2018. Soil organic matter dynamics under irrigated perennial forage-annual crop rotation systems. *Grass and Forage Science*. 73: 907-917. <https://onlinelibrary.wiley.com/doi/10.1111/gfs.12378>.
44. Wang, J., **R. Ghimire**, X. Fu, U.M. Sainju, and W. Liu. 2018. Straw mulching increases precipitation storage rather than water use efficiency and dryland winter wheat yield. *Agricultural Water Management*. 206: 95-101. <https://doi.org/10.1016/j.agwat.2018.05.004>.
45. Cano, A., A. Nunez, V. Acosta-Martinez, M. Schipanski, **R. Ghimire**, C. Rice, C. West. 2018. Current knowledge and future research directions of soil health and water conservation in the Ogallala Aquifer region. *Geoderma*. 238: 109-118. <https://doi.org/10.1016/j.geoderma.2018.04.027>.

46. **Ghimire, R.****, B. Ghimire*, A.O. Mesbah, M. O'Neill, J. Idowu, S. Angadi, and M.K. Shukla. 2018. Current status, opportunities, and challenges of cover cropping for sustainable dryland farming in the Southern Great Plains. *Journal of Crop Improvement*. 32: 579-598. DOI: 10.1080/15427528.2018.1471432.
47. Duval, B., **R. Ghimire**, M.D. Hartman, and M.A. Marsalis. 2018. Water and nitrogen management effects on semiarid sorghum production and soil trace gas flux under future climate. *PlosOne* 13(4): e0195782.
48. Rijal, J.P., R. Regmi, **R. Ghimire**, K. Puri, S Gyawly, and S. Poudel. 2018. Farmers' knowledge of pesticide safety and pest management: A case study of Vegetable Growers in Chitwan, Nepal. *Agriculture*, 8(1), 16. <http://www.mdpi.com/2077-0472/8/1/16>
49. **Ghimire, R.****, S. Machado, and P. Bista. 2018. Decline in soil organic carbon and nitrogen limits yield in wheat-fallow systems. *Plant and Soil*. 422: 423-435 DOI: 10.1007/s11104-017-3470-z.

2017

50. *Ghimire, B., **R. Ghimire****, D. VanLeeuwen and A.O. Mesbah. 2017. Cover crop residue inputs and quality effects on soil organic matter mineralization. *Sustainability*, 9, 2316. <http://www.mdpi.com/2071-1050/9/12/2316>.
51. Bista, P., U. Norton, **R. Ghimire**, and J.B. Norton. 2017. Greenhouse gas fluxes, soil mineral N, and global warming potential in semi-arid winter wheat (*Triticum aestivum* L.)-fallow during drought. *Journal of Arid Environments*. 147: 103-113. DOI: 10.1016/j.jaridenv.2017.09.002
52. Sainju, U.M., B.L. Allen, A.W. Lenssen, and **R. Ghimire**. 2017. Root biomass, root/shoot ratio, and soil water content under perennial grasses with different nitrogen rates. *Field Crops Research*. 210: 183-191. DOI: 10.1016/j.fcr.2017.05.029.
53. Rawal, N., **R. Ghimire**, D.R. Chalise. 2017. Crop yield and soil fertility status of long-term rice-rice-wheat cropping systems. *International Journal of Applied Science and Biotechnology*. 5: 42-50. DOI: 10.3126/ijasbt.v5i1.17001.
54. **Ghimire, R.****, S. Machado, and P. Bista. 2017. Soil pH, soil organic carbon, nitrogen, and crop yield in wheat-fallow systems. *Agronomy Journal*. 109: 706–717. Doi: 10.2134/agronj2016.08.0462.
55. **Ghimire, R.****, U. Norton, P. Bista, A. Obour, and J.B. Norton. 2017. Soil organic matter, greenhouse gases, and net global warming potential of irrigated cropping systems. *Nutrient Cycling in Agroecosystems*. 107: 49-62. DOI: 10.1007/s10705-016-9811-0.
56. **Ghimire, R.****, S. Lamichhane, B.S. Acharya, P. Bista, and U.M. Sainju. 2017. Tillage, crop residue, and nutrient management effects on soil organic carbon in rice-based cropping systems. *Journal of Integrative Agriculture*. 16: 1-15. DOI: 10.1016/S2095-3119(16)61337-0. Awarded with '**Top Article of 2019 Award**'.

2016

57. Bista, P., S. Machado, S. **R. Ghimire**, S.J. Del-Grosso, and M. Reyes-Fox. 2016. Simulating soil organic carbon in a wheat-fallow system using the DAYCENT model. *Agronomy Journal*. 108: 2554-2565. Doi: 10.2134/agronj2016.04.0202.

58. **Ghimire, R.**** and P. Bista. 2016. Crop diversification improves pH of acidic soils. *Journal of Crop Improvement*. 30: 657-667. DOI: 10.1080/15427528.2016.1219894.
59. **Ghimire, R.**** 2016. Approaches in Cropping Systems Research and Challenges. *Advances in Plant and Agricultural Research*. 3(2): 00088. DOI: 10.15406/apar.2016.02.00088.

2015

60. **Ghimire, R.****, S. Machado, and K. Rhinhart. 2015. Long-term crop residue and nitrogen management effects on soil profile carbon and nitrogen in wheat-fallow systems. *Agronomy Journal* 107: 2230-2240. DOI: 10.2134/agronj14.0601.
61. Bista, P., U. Norton, **R. Ghimire**, and J.B. Norton. 2015. Greenhouse gas fluxes and soil carbon and nitrogen following single summer tillage. *International Journal of Plant and Soil Science* 6: 183-193. DOI: 10.9734/IJPSS/2015/16234.

2014

62. **Ghimire, R.**, J.B. Norton, P.D. Stahl, and U. Norton, 2014. Soil microbial substrate properties and microbial community responses under irrigated organic and reduced-tillage crop and forage production systems. *PLoS ONE* 9(8): e103901. DOI: 10.1371/journal.pone.0103901.
63. Paudel, B., B.S. Acharya, **R. Ghimire****, K.R. Dahal, and P.Bista. 2014. Adapting agriculture to climate change and variability in Chitwan, Nepal: long-term trends and farmers' perceptions. *Agricultural Research* 3: 165-174. DOI: 10.1007/s40003-014-0103-0.
64. **Ghimire, R.** J.B. Norton, and E. Pendall. 2014. Alfalfa-grass biomass, soil organic carbon, and total nitrogen under different management approaches in an irrigated agroecosystem. *Plant and Soil* 374: 173-184. DOI 10.1007/s11104-013-1854-2.

2013

65. **Ghimire, R.**, J.B. Norton, U. Norton, J.P. Ritten, P.D. Stahl, and J.M. Krall. 2013. Long-term farming systems research in the central High Plains. *Renewable Agriculture and Food Systems* 28: 183–193. DOI 10.1017/S1742170512000208.

2012

66. **Ghimire, R.**, K.R. Adhikari, Z. Chen, S.C. Shah, and K.R. Dahal. 2012. Soil organic carbon sequestration as affected by tillage and crop residue management in the rice-wheat system. *Paddy and Water Environment* 10: 95-102. DOI: 10.1007/s10333-011-0268-0.
67. Khatiwada, B.P., **R. Ghimire**, R. Adhikari, and S. Osti. 2012. Increasing crop water productivity through local crops and technologies: a case from the Chepang ethnic community of Nepal. *Hydro Nepal: Journal of Water, Energy, and Environment Special Issue: conference papers*. pp 50-54.

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68. Bista, P., **R. Ghimire****, S.C. Shah, and K.R. Pande. 2010. Assessment of soil fertility management practices and their constraints in different geographic locations of Nepal. *Forum Geografic* 9: 41-48.

69. **Ghimire, R.****, R.K. Basnet, P. Bista, and B. RanaBhat. 2009. Soil quality cards for participatory soil quality assessment in organic and smallholder agriculture. *Forum Geografic* 8: 72-76.
70. **Ghimire, R.****, S.C. Shah, K.R. Dahal, J.M. Duxbury, and J.G. Lauren. 2008. Tillage and residue management effects on soil organic carbon sequestration in the rice-wheat cropping system of Nepal. *Journal of the Institute of Agriculture and Animal Science* 29: 21-26.
71. **Ghimire, R.****, 2008. Increasing resilience of community on climate change through the application of sloping agriculture land technology and eco-friendly agriculture in Jugedi Khola watershed, Nepal. *Forum Geografic* 7: 208 – 215.
72. Tiwari, S., R. B. Thapa, and **R. Ghimire**. 2008. Farmers' field school in potato: an effective tool for integrated crop management. *Journal of Plant Protection* 1: 115-121.
73. **Ghimire, R.****, K.R. Dahal, J.G. Lauren, J.M. Duxbury, and S.C. Shah. 2007. Tillage and crop residue management effects on soil organic carbon content in light and heavy soils of Chitwan, *Journal of Institute of Agriculture and Animal Science* 28: 27-32.
74. **Ghimire, R.****, S.C. Shah, K.R. Dahal, A.K. Shrestha, C. Adhikari, J. G. Lauren, and J.M. Duxbury. 2007. Equation for predicting soil organic carbon using loss on ignition for Chitwan soils. *Institute of Agriculture and Animal Science Research Advances* 1: 229-232.

Book Chapters

1. **Ghimire, R.**, P. Bista, and S. Machado. 2022. Crop yield limitation by soil organic matter decline: a case study from the US Pacific Northwest. In: Saljnikov E., Mueller L., Lavrishchev A., Eulenstein F. (eds) *Advances in Understanding Soil Degradation. Innovations in Landscape Research*. Springer, Cham. pp. 609-621. https://doi.org/10.1007/978-3-030-85682-3_27.
2. Sainju, U., **R. Ghimire**, and J. Wang. 2021. Soil organic carbon, crop yield, and quality responses of cover cropping: a review. *Advances in Soil Science Special Issue: Soil Organic Carbon and Feeding the Future – Crop Yield and Nutritional Quality*. CRC Press, Boca Raton
3. **Ghimire R.**, V.R. Thapa, P. Acharya, J. Wang, and U.M. Sainju. 2021. Soil indicators and management strategies for environmental sustainability. In: Rakshit, A., Singh, S.K., Abhilash, P.C., Biswas, A. (Eds.). *Soil Science: Fundamentals to Recent Advances*. ISBN 978-981-16-0917-6
4. **Ghimire, R.**, U. Sainju, and R. Acharya. 2020. Soil health for food security and agroecosystem resilience. In: D.P. Rasali, P.B. Bhandari, U. Karki, M.N. Parajulee, R.N. Acharya, and R. Adhikari (eds.), *Principles and Practices of Food Security: Sustainable, Sufficient, and Safe Food for Healthy Living in Nepal*. Association of Nepales Agricultural Professions of Americas. pp 230-244.
5. Umesh, M.R., S.V. Angadi, P. Gowda, **R. Ghimire**, and S. Begna. 2019. Climate-resilient minor crops for food security. *Agronomic Crops*, pp. 19-32 (100% NMSU work, contributed a section on climate resilience)

6. Sainju, U., **R. Ghimire**, G. Pradhan. 2019. Nitrogen Fertilization I: Impact on Crop, Soil, and Environment. In: E.C. Rigobelo and A.P. Serra (eds.), Nitrogen Fixation. Intech Open. London, UK. pp 69-92.
7. Sainju, U., **R. Ghimire**, G. Pradhan. 2019. Nitrogen Fertilization II: Management Practices to Sustain Crop Production and Soil and Environmental Quality. In: E.C. Rigobelo and A.P. Serra (eds.), Nitrogen Fixation. Intech Open. London, UK. pp 35-56.
8. Awale, R., **R. Ghimire**, S. Machado, and P. Bista. 2017. Soil health. In: C. Cruger and G. Yorgey (eds.), Advances in Sustainable Dryland Farming in the Inland Pacific Northwest. pp 47-98.
9. Bista, P., S. Machado, **R. Ghimire**, G. Yorgey, D. Wysocki. 2017. Conservation systems. In: C. Cruger and G. Yorgey (eds.), Advances in Sustainable Dryland Farming in the Inland Pacific Northwest. pp 99-124.
10. Angadi, S., S. Begna, M.R. Umesh, and **R. Ghimire**. 2016. Strategies to improve the resiliency of semiarid cropping systems under future climate. In: B.M. Chittapur, A.S. Halepyati, M.R. Umesh, and B.K. Desai (eds.), Climate-Smart Agriculture: Status and Strategies. University of Agricultural Sciences, Raichur, India. pp. 116-120.

Editor Reviewed Research Papers and Conference Abstracts/Proceedings

1. GC, A., **R. Ghimire**, D. Blayney, and R.N. Acharya. 2018. Feasibility of using cover crops to enhance soil organic matter and crop yield in New Mexico. Proceedings of the 2018 Southern Agricultural Economics Association Annual Meeting, February 2-6, 2018, Jacksonville, FL.
2. Angadi, S., Begna S., Umesh, M., and **R. Ghimire**. 2015. Strategies to improve the resiliency of semiarid cropping systems under future climate. Climate-Smart Agriculture: Lessons Learnt, Technological Advances Made, and Research Priorities in SAT. ICAR Winter School, Raichur, India.
3. Norton, J.B. and **R. Ghimire**. 2014. Soil microbiology, organic matter, and economics four years after conversion from continuous irrigated corn to crop and forage rotations under typical, reduced tillage, and organic management. Proceedings of the Great Plains Soil Fertility Conference, March 4-5, 2014, Denver, CO.
4. **Ghimire, R.** and J.B. Norton. 2013. Nitrogen dynamics in conventional, reduced tillage, and organic irrigated systems: Results of a four-year experiment in Wyoming. Proceedings of the Western Nutrient Management Conference, March 7-8, 2013, Reno, NV.
5. **Ghimire, R.**, J.B. Norton, and P.D. Stahl. 2012. Alternative soil fertility strategies affect the seasonal dynamics of soil microbial communities in the crop-livestock system. Proceedings of the Great Plains Soil Fertility Conference, March 6-7, 2012. Denver, CO.
6. **Ghimire, R.** J.B. Norton, U. Norton, and N.L. Ward. 2011. More than one way to raise a crop. Reflections Magazine. University of Wyoming, Laramie, WY.
7. **Ghimire, R.**, B. Rana Bhat, and R.R. Adhikari. 2011. Empowerment of Tharu community on organic production through farmers' field school. Proceeding of the 17th International Federation of Organic Agriculture Movement World Congress, September 29 –October 1, 2011, Namyangju Republic of Korea.

8. **Ghimire, R.** and P. Bista. 2009. Conservation agriculture rally-rounds adaptation to climate change. NGO group bulletin on climate change: Scaling up community-based adaptation in Nepal. Local Initiative for Biodiversity Research and Development. Issue 3, December 2009, Pokhara, Nepal.
9. **Ghimire, R.** 2008. Global climate change, greenhouse effects, and soil organic carbon sequestration. NGO group bulletin on climate change research and development. Local Initiative for Biodiversity Research and Development. August 2008.
10. **Ghimire, R.**, S.C. Shah, K.R. Dahal, J.G. Lauren, and C. Adhikari, 2008. Graham's Colorimetry as an estimate of soil organic carbon in Chitwan valley soils, Nepal. Proceedings of the Third Convention of Society of Agricultural Scientists – Nepal, August 27-29, 2008, Kathmandu, Nepal.
11. Rana Bhat, B. and **R. Ghimire**. 2008. Promotion of organic vegetable production through farmers' field school in Chitwan, Nepal. Cultivating the Future Based on Science. 1. 1. Organic Crop Production. Proceedings of the Second Scientific Conference of the International Society of Organic Agriculture Research, June 18-20, 2008 in Modena, Italy.

Published Meeting Abstracts and Conference Presentations (*graduate student)

1. Kelly, C., E. Slessarev, M. Schipanski, S. Fonte, **R. Ghimire**, P. Brown, K. Jagadish, J. Pett-Ridge. 2022. Perennial grass conversion as rapid a rapid carbon sink: Long-term dryland system responses. AGU22 Fall meeting, Chicago, IL.
2. Bista, P., M. Hartman, S.J. DelGrosso, V.R. Thapa, and **R. Ghimire**. 2022. Simulating cover crop impacts on long-term net greenhouse gas balance in semi-arid region. AGU22 Fall meeting, Chicago, IL.
3. **Ghimire, R.**, P. Acharya*, V.R. Thapa, and W.S. Paye. 2022. Soil health and carbon management in water-limited environments: insights from western United States and beyond. AGU22 Fall meeting, Chicago, IL.
4. Bista P., O. Adebayo, S.V. Angadi, and **R. Ghimire**. 2022. Soil moisture dynamics in limited irrigated sorghum with cover cropping and compost application. 67th New Mexico Water Conference. Las Cruces, MM and Online.
5. Joshi, D.R., **R. Ghimire**, T.P. Kharel, U. Mishra, S.A. Clay, and D.E. Clay. 2022. Conservation agriculture for food security and climate resilience. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
6. *Singh, P., S.V. Angadi, D. DuBois, **R. Ghimire**, and O.J. Idowu. 2022. Circular grass buffer strips (CBS) system: a synergetic merger of native perennial grasses and annual crop in center pivot irrigated agriculture systems. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD (**Second place in SSSA society-wide student oral/poster competition, and first in Soil and Water Management and Conservation Division**).
7. *Sapkota, S., **R. Ghimire**, and S.V. Angadi, P. Singh, D. VanLeeuwen, and O.J. Idowu. 2022. Response of soil organic matter and nutrients to circular grass buffer integration in center-pivot irrigated cropping systems. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.

8. *Acharya, P., **R. Ghimire**, E. Lehnhoff, and M.A. Marsalis. 2022. Cover crop forage potential and subsequent forage sorghum yield and nutritive value. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
9. *Singh, P., S.V. Angadi, **R. Ghimire**, D. DuBois, and O.J. Idowu. 2022. Soils of center pivot production systems better protected under innovative circular grass buffer strips. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
10. *Sapkota, S., **R. Ghimire**, and S.V. Angadi. 2022. Grass buffer effects on soil carbon and nitrogen components in center-pivot irrigated cropping systems. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
11. *Adebayo, O, **R. Ghimire**, H. Badrari, P. Bista, V.R. Thapa, and S.V. Angadi. 2022. Soil health and water dynamics with cover crops and compost application in a semiarid limited-irrigation cropping systems. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
12. *Acharya, P., **R. Ghimire**, and W.S. Paye. 2022. Soil health changes in cover crop-integrated forage production systems under irrigated semiarid conditions. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
13. *Badrari, H., **R. Ghimire**, O. Adebayo* and A.O. Mesbah. 2022. Weed suppression potential of cover crops in semiarid-regions. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
14. *Fademi, I., M.N. Omer, **R. Ghimire**, and O.J. Idowu. 2022. Winter cover crops and soil amendment effects on selected soil measurements in an arid agroecosystem. ASA-CSSA-SSSA International Annual Meeting, Baltimore, MD.
15. *Acharya P., **R. Ghimire**, M.A. Marsalis, E.A. Lehnhoff. 2022. Cover crops for improving forage sorghum yield and nutritive value in water-limited environments. Western Society of Crop Science Meeting, June 21-22, 2022, Fort Collins, CO (**First place in student oral competition**).
16. **Ghimire, R.**, W. Paye, V.R. Thapa*. 2022. How much disturbance is too much? Soil health response of tillage systems in semi-arid drylands. Third NAPA Biennial International Scientific Conference, May 27-29, 2022, Atlanta, GA.
17. Omer, M.N., O.J. Idowu, **R. Ghimire**, S. Sapkota*, and N. Pietrasiak. 2021. Variability of soil quality measurements across a field under alfalfa production. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
18. Paye, W.S., **R. Ghimire**, S.V. Angadi, and M.A. Marsalis. 2021. Soil organic matter components and forage quality of perennial wheat and native grass pasture in semi-arid drylands. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
19. *Thapa V.R., **R. Ghimire**, and W.S. Paye. 2021. Soil organic carbon and nitrogen responses to strategic tillage management in semiarid drylands. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
20. *Sapkota, S., **R. Ghimire**, S. Angadi, and O.J. Idowu. 2021. Soil carbon and nitrogen components under grass buffer strips and adjacent corn strips in a semi-arid irrigated corn production system. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.

21. *Singh, P., S.V. Angadi, D. DuBois, O.J. Idowu, **R. Ghimire**, and S. Begna. 2021. Simple design of circular grass buffer strips enhances water productivity of center pivot production systems. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
22. *Acharya P. and **R. Ghimire**. 2021. Selected soil health indicators at cover crop termination in an irrigated forage corn-sorghum rotation. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
23. *Singh, P., S.V. Angadi, D. DuBois, O.J. Idowu, **R. Ghimire**, and S. Begna. 2021. Physiological response of irrigated corn with and without circular buffer strips of native perennial grasses. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
24. *Singh, P., S.V. Angadi, D. DuBois, O.J. Idowu, **R. Ghimire**, and S. Begna. 2021. Native perennial grasses as circular buffer strips enhances productivity of irrigated center pivot production systems. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
25. Khadka-Mishra, S. and **R. Ghimire**. 2021. The benefits of carbon-farming and the status of carbon market. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
26. *Acharya, P., **R. Ghimire**, W.S. Paye. 2021. Greenhouse gas emissions and global warming potential of cover crop mixtures in irrigated forage production systems. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
27. Sainju, U., **R. Ghimire**, and U. Mishra. 2021. Crop rotation with reduced nitrogen fertilization rate decreases nitrous oxide emissions and sustains dryland crop yield and nitrogen-use efficiency. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
28. Paye, W., **R. Ghimire**, P. Acharya*, A. Nilahyane, A.O. Mesbah, and M. Marsalis. 2021. Cover crop water use and corn silage production in semiarid irrigated conditions. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
29. *Thapa, V.R., **R. Ghimire**, D. VanLeeuwen, V. Acosta-Martinez, and M.K. Shukla. 2021. Cover crop effects on soil organic matter components and soil aggregate size distribution in a semiarid cropping system. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
30. Sainju, U.M., **R. Ghimire**, and S. Dangi. 2021. Crop rotation and nitrogen fertilization rate impact on soil carbon dioxide and methane emissions and carbon balance. ASA-CSSA-SSSA International Annual Meeting, Salt Lake City, UT.
31. ***Acharya**, P., R. Ghimire, Y. Cho, V. R. Thapa, and U. M. Sainju. 2021. Effects of cover crops on crop yield and soil profile carbon and nitrogen stock in a limited irrigation condition. Western Society of Crop Science (**First place in student poster competition**).
32. Paye, W., **R. Ghimire**, P. Acharya, and M.A. Marsalis. 2021. Cover crop mixtures as alternative forage in the southern high plains silage corn production. Western Society of Crop Science. June 22-23, 2021.
33. *Singh, P., S.V. Angadi, R. Lascano, S. Begna, D. Dubois, **R. Ghimire**, and O.J. Idowu. 2021. Native perennial grasses as circular buffer strips improve green water use proportion in a center pivot irrigation system. Western Society of Crop Science (**First place in student oral competition**).

34. **Ghimire R.** and S.M. Salehin. 2021. Soil organic carbon and nitrogen dynamics under dryland sorghum in New Mexico. Western Nutrient Management Conference Proceedings (Virtual), March 4-5, 2021.
35. **Ghimire, R.** 2020. Linking soil health to food security: implications for subsistence to sustainable agriculture. 5th International Conference on Mountains in Changing World (Virtual), Kathmandu, Nepal.
36. *Salehin S.M., **R. Ghimire**, S. Angadi, O.J. Idowu. 2020. Circular grass buffer strips to improve soil health and mitigate greenhouse gas emissions in center-pivot irrigated cropping systems. ASA-CSSA-SSSA Annual Meeting (Virtual), Phoenix, AZ (**Third place in student oral competition**).
37. Joshi-Gyawali, A., P. Smith, H.L. Neely, **R. Ghimire**, J. Pintar, C.B. Neely, K.L. Lewis, and J. Foster. 2020. Assessing soil health in the south-central United States. ASA-CSSA-SSSA Annual Meeting (Virtual), Phoenix, AZ.
38. *Acharya, P., **R. Ghimire**, and W. Paye. 2020. Greenhouse gas emission in irrigated cover crop-forage rotation. ASA-CSSA-SSSA Annual Meeting (Virtual), Phoenix, AZ.
39. *Thapa, V.R., **R. Ghimire**, V. Acosta-Martinez, M. Marsalis, and M. Schipanski. 2020. Cover crop effects on soil microbial community structure and enzyme activities in semiarid cropping systems. ASA-CSSA-SSSA Annual Meeting (Virtual), Phoenix, AZ.
40. **Ghimire, R.**, S.M. Salehin, S. Angadi, S. Begna, and O.J. Idowu. 2020. Circular grass buffer strips for restoring soil health in the Great Plains agriculture. Soil and Water Conservation Society (Virtual), Ames, IA.
41. **Ghimire, R.**, P. Acharya*, W. Paye, and M. Marsalis. 2020. Cover crop effects on soil water dynamics under irrigated forage corn and sorghum. Western Society of Crop Science (Virtual), Fort Collins, CO.
42. **Ghimire, R.**, V.R. Thapa*, V. Acosta-Martinez, and M. Schipanski. 2019. Soil health and agroecosystem carbon dynamics in the southern Ogallala Aquifer region. American Geophysical Union. San Francisco, CA.
43. *Salehin, S.M., **R. Ghimire**, A. Nilahyane, S. Angadi, and O.J. Idowu. 2019. Soil N dynamics and N₂O emissions in dryland sorghum field with compost and fertilizer nitrogen application. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX (**Second place in student poster competition**).
44. Begna, S., S. Angadi, **R. Ghimire**, A.O. Mesbah, and M. Darapuneni. 2019. Nitrogen Application Timing and Winter Canola Seasonal Biomass Production and Seed Yield. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX.
45. Nilahyane, A., **R. Ghimire**, P. Acharya*, A.O. Mesbah, and M. Marsalis. 2019. Effect of cover crops on soil water conservation and crop yield. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX.
46. *Acharya, P., **R. Ghimire**, and Y. Cho. 2019. Cover crop and compost effects on soil organic matter dynamics: examples from the southern Great Plains region. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX.

47. **Ghimire, R.**, B.R. Khanal, A. Ganguli. 2019. Soil organic carbon and nitrogen cycling in semiarid southern High Plains agroecosystems. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX.
48. Begna, S., S. Angadi, **R. Ghimire**, and A. Mesbah. 2019. Understanding silage corn vertical biomass distribution and quality relationships for developing a sustainable production system. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX.
49. *Maas, E., U. Mishra, S. Gautam, Y. Wang, **R. Ghimire**, and R. Lal. 2019. A model ensemble approach to predicting future sorghum cropping system effects at the field level. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX.
50. *Thapa, V.R., **R. Ghimire**, and V. Acosta-Martinez. 2019. Soil microbial properties as indicators of soil health in limited-irrigation crop rotation in semiarid eastern New Mexico, Sacramento, CA.
51. *Thapa, V.R., and **R. Ghimire**. 2019. Soil health in semiarid drylands of eastern New Mexico. SSSA International Annual Meeting, San Diego, CA.
52. *Allan, M., **R. Ghimire**, C. Brungard, S. Begna, S. Angadi. 2019. Spatial variability of selected soil health indicators in a forage corn production system. SSSA International Annual Meeting, San Diego, CA.
53. Sainju, U., and **R. Ghimire**. 2019. Dryland agroecosystem nitrogen balance with cropping sequence and nitrogen fertilization. SSSA International Annual Meeting, San Diego, CA.
54. *Thapa V.R., **R. Ghimire**, V. Acosta-Martinez, and M. Marsalis. 2018. Reducing Tillage and Increasing Crop Diversity for Improving Soil Health and Agricultural Sustainability: Examples from Eastern New Mexico. NM Sustainable Agriculture Conference, Los Lunas, NM (**First place in student poster competition**).
55. *Thapa V.R., **R. Ghimire**, V. Acosta-Martinez, and M. Marsalis. 2018. Conservation systems for improving soil health and resilience in the southern Ogallala region. Ogallala Water Project third annual meeting, Santa Fe, NM.
56. Begna, S., **R. Ghimire**, S. Angadi, M. Allan, C. Brungard, and A.O. Mesbah. 2018. Silage corn row spacing and cutting height effect on yield, quality, and wind dynamics in New Mexico. ASA-CSSA International Annual Meeting, Baltimore, MD.
57. Angadi S.V., S.H. Begna, S. Singh, K. Katuwal, J. Singh, P. Gowda, and **R. Ghimire**. 2018. Multiple Approaches to sustain Ogallala Aquifer in the Southern Great Plains of the United States of America. Agrosym-2018, Jahorina, Bosnia.
58. **Ghimire, R.**, V.R. Thapa, and A.O. Mesbah. 2018. Tillage and cover crop effects on soil organic matter dynamics under dryland corn-sorghum rotation. ASA-CSSA International Annual Meeting, Baltimore, MD.
59. *Acharya, P., **R. Ghimire**, and C. Young. 2018. Soil health indicators under diverse cover crops in a winter wheat-sorghum-fallow rotation. Soil Health Institute's Third Annual Meeting, Albuquerque, NM.
60. **Ghimire, R.**, A.O. Mesbah, R.N. Acharya, and M.A. Marsalis. 2018. Cover crops in limited irrigated cropping systems: Opportunities and challenges for sustaining the Ogallala Aquifer. Western Society of Crop Science Annual Meeting, Laramie, WY.

61. *Allan, M.J., **R. Ghimire**, C. Brungard, and S. Begna. 2018. Understanding soil spatial variability for sustainable forage corn production in Eastern New Mexico. Western Society of Crop Science Annual Meeting, Laramie, WY (**Second place in student oral competition**).
62. *Ghimire, B., **R. Ghimire**, and A.O. Mesbah. 2018. Early responses of cover crops on limited-irrigated winter wheat-sorghum fallow. Global Food Security through Agricultural Transformation. Oklahoma City, OK.
63. *Thapa, V.R. and **R. Ghimire**. 2018. Tillage and cover cropping effects on soil organic matter components and wet aggregate stability in the semi-arid drylands. Global Food Security through Agricultural Transformation. Oklahoma City, OK (**Honorable mention in student oral competition**).
64. Begna, S. H, **R. Ghimire**, S. Angadi, M. Allan, C. Brungard, and A. Mesbah. 2018. Strategies for soil and water conservation and sustainable forage corn production system in New Mexico: Cutting height, row spacing, forage quality, and cover crop considerations. Soil and Water Conservation Society of America Annual Meeting, Albuquerque, NM.
65. Angadi, S.V., **R. Ghimire**, S. H. Begna, P. Singh, O. J. Idowu, P.H. Gowda, G. W. Marek, and C. P. West. 2018. Circular buffer strips (CBS): An Innovative Way to Add Ecosystem Services to Irrigation Agriculture. Soil and Water Conservation Society of America Annual Meeting, Albuquerque, NM.
66. Angadi, S.V., **R. Ghimire**, S. H. Begna, P. Singh, O. J. Idowu, P.H. Gowda, G. W. Marek, and C. P. West. 2018. Circular buffer strips (CBS) of perennial native grasses for sustaining Ogallala Aquifer in the Southern Great Plains. (Poster presentation). College of Agriculture Consumer and Environmental Sciences, Open House, Las Cruces, NM.
67. Angadi. S.V., **R. Ghimire**, S. Begna, P. Gowda, P. Singh, G. Marek, and C. West. 2018. Glimpses of Benefits of Circular Buffer Strips (CBS) of Perennial Grasses to Sustain Ogallala Aquifer in the Southern Great Plains. Ogallala Aquifer Program Annual Meeting, Lubbock, TX.
68. *Thapa, V.R. and **R. Ghimire**. 2018. Land use effects on soil organic matter pools and soil structure. NeSA 10th International Conference on Role of Diaspora for Sustainable Homeland, Las Cruces, NM (**Second place in student oral competition**).
69. *Allan, M.J., **R. Ghimire**, C. Brungard, and S. Begna. 2017. Understanding soil spatial variability for sustainable corn production in Eastern New Mexico. NM Sustainable Agriculture conference, Los Lunas, NM.
70. *Ghimire, B., **R. Ghimire**, and A.O. Mesbah. 2017. Cover crops effect of soil moisture content, organic matter dynamics, and wheat yield in a limited-irrigated winter wheat-summer fallow system. NM Sustainable Agriculture conference, Los Lunas, NM (First place in poster competition).
71. *Thapa, V., **R. Ghimire**, A. Cano, V. Acosta-Martinez, O.J. Idowu, and M. Marsalis. 2017. Soil health under diverse land-use systems in the drylands of Eastern New Mexico. Ogallala Water Project Second Annual Meeting, Manhattan, KS.
72. Sainju, U.M., B.L. Allen, A.W. Lenssen, **R. Ghimire**. 2017. Bioenergy perennial grass species and nitrogen fertilization effect on root biomass, root/shoot ratio, and soil water. ASA, CSSA, SSSA International Annual Meetings, Tampa, FL.

73. Angadi, S., S. Begna, P.H. Gowda, O.J. Idowu, **R. Ghimire**, C.P. West. G.W. Marek, J. Stout. 2017. Circular buffer strips of perennial grasses: a preliminary assessment. ASA, CSSA, SSSA International Annual Meetings, Tampa, FL.
74. *Ghimire, B., **R. Ghimire**, A.O. Mesbah, D. VanLeeuwen. 2017. Potential soil carbon mineralization and mineralization kinetics under diverse cover crop residues. ASA, CSSA, SSSA International Annual Meetings, Tampa, FL.
75. *Ghimire, B., **R. Ghimire**, A.O. Mesbah. 2017. Soil biochemical responses of cover crops in a winter wheat-summer fallow system. ASA, CSSA, SSSA International Annual Meetings, Tampa, FL.
76. **Ghimire, R.**, B. Ghimire, V.B. Thapa, and A.O. Mesbah. 2017. Soil C and N cycling under reduced tillage and cover crops in the southern High Plains agroecosystems. ASA, CSSA, SSSA International Annual Meetings, Tampa, FL.
77. **Ghimire, R.**, T. Silvasy, S. Magar, N. Bhattarai, R. Regmi, and J.P. Rijal. 2017. A participatory approach in soil testing and nutrient management in smallholder farms of Nepal. ASA, CSSA, SSSA International Annual Meetings, Tampa, FL.
78. Silvasy, T., N. Bhattarai, R. Regmi, S. Magar, **R. Ghimire**, T.J.K. Radovich. 2017 Soil testing survey and soil fertility management practices of smallholder farmers in Chitwan, Nepal. American Society for Horticultural Science Annual Meeting, Honolulu, HI.
79. **Ghimire, R.** 2017. Conservation systems, global change, and agricultural sustainability in dryland and rain-fed agroecosystems. International Conference on Biodiversity, Climate Change Assessment, and Impacts in Livelihood. Kathmandu, Nepal.
80. **Ghimire, R.**, S. Angadi, S. Begna, M. Marsalis. 2016. Alternative strategies for improving the sustainability of dryland and limited-irrigated cropping systems in eastern New Mexico. Ogallala Water CAP, first annual meeting, Denver, CO.
81. Duval, B.D., **R. Ghimire**, M.D. Hartman, M. Marsalis. 2016. Biogeochemical responses of a semi-arid sorghum system to management intensity and simulated future climate. AGU fall meeting. San Francisco, CA.
82. **Ghimire, R.**, A.O. Mesbah, B. Ghimire. 2016. Nutrient dynamics under cover crops and the following winter wheat and sorghum. ASA, CSSA, SSSA International Annual Meetings, Phoenix, AZ.
83. Regmi, R., J. Rijal, **R. Ghimire**, K. Puri, S. Gyawaly, S. Poudel. 2016. Status of insect pest management in commercial vegetable farming in Chitwan, Nepal. International conference on "Mountains in Changing World," Kathmandu, Nepal.
84. Gyawaly, S., J.P. Rijal, R. Regmi, K.D. Puri, **R. Ghimire**, N. Bhattarai. 2016. IPM-based pest management practices in commercial vegetable productions in Nepal. XXV International Congress of Entomology. Orlando, FL.
85. Bista, P., S. Machado, **R. Ghimire**, L. Pritchett. 2016. Biochar and fertilizer effects on wheat growth and soil properties. Western Society of Crop Science Meeting, Albuquerque, NM.

86. *Ghimire, B., **R. Ghimire**, A.O. Mesbah, J. Szaloy. 2016. Potentially mineralizable carbon under cover crops: results of a field and laboratory incubation study. Western Society of Crop Science Meeting, Albuquerque, NM.
87. **Ghimire, R.**, J. Szaloy, B. Ghimire, and A.O. Mesbah. 2016. Cover crops in a winter wheat-sorghum-fallow system: first-year results of the soil properties and water use. Western Society of Crop Science Meeting, Albuquerque, NM.
88. **Ghimire, R.** 2016. Sustainable Practices in Small-holder Agriculture: Case Studies from Mountains and Plains of Nepal, NeSA 8th International Conference on Role of Diaspora for Sustainable Homeland, Las Cruces, NM.
89. **Ghimire, R.**, S. Machado, P. Bista, C. Burns, and M. Allen. 2015. Soil organic carbon dynamics in the Pendleton long-term experiment. ASA, CSSA, SSSA International Annual Meetings, Minneapolis, MN.
90. Bista, P., S. Machado, and **R. Ghimire**. 2015. Simulating long-term impact of crop management in soil organic carbon using DAYCENT Model. ASA, CSSA, SSSA International Annual Meetings, Minneapolis, MN.
91. **Ghimire, R.**, P. Bista, and S. Machado. 2015. Warming effects on soil carbon and nitrogen mineralization in dryland cropping systems in the Pacific Northwest. Transitioning Cereal Systems to Adapt to Climate Change. Minneapolis, MN.
92. Bista, P., S. Machado, and **R. Ghimire**. 2015. Soil organic carbon dynamics in a dryland wheat-fallow system: DAYCENT model simulations. Transitioning Cereal Systems to Adapt to Climate Change. Minneapolis, MN.
93. **Ghimire, R.**, S. Machado, and P Bista. 2015. Soil acidification from nitrogen fertilizer application in a dryland winter wheat-summer fallow system in the Pacific Northwest. Western Society of Crop Science Meeting, Logan, UT.
94. **Ghimire, R.**, S. Machado, and P Bista. 2015. Soil pH dynamics in a winter wheat-summer fallow system. PNW Oilseed and Direct Seed Conference, Kennewick, WA.
95. Bista, P., U. Norton, **R. Ghimire**, and J.B. Norton. 2014. Greenhouse gas emissions and soil inorganic n under dryland winter wheat-fallow management systems as affected by climatic variability in semi-arid Great Plains. ASA, CSSA, SSSA International Annual Meetings, Long Beach, CA.
96. **Ghimire, R.** and S. Machado. 2014. The long-term trend of soil organic carbon as influenced by crop residue and nitrogen management practices. ASA, CSSA, SSSA International Annual Meetings, Long Beach, CA.
97. **Ghimire, R.** and S. Machado. 2014. Long-term crop residue and nitrogen management influences soil profile carbon and nitrogen. Western Society of Crop Science meeting, Bozeman, MT.
98. **Ghimire, R.**, J.B. Norton, and N.L. Ward. 2013. Management approaches influence diversity of bacterial *nifH* genes in crop and forage production systems in Wyoming, NSF EPSCoR Workshop in Bioinformatics to Foster Collaborative Research, Little Rock, AR.

99. **Ghimire, R.** and J.B. Norton. 2012. Labile pool soil organic matter response to a transition to organic and reduced input management in irrigated crop and forage production. ASA, CSSA, SSSA International Annual Meetings, Cincinnati, OH.
100. Bista, P., U. Norton, **R. Ghimire**, and J.B. Norton. 2012. GHG emissions and soil C and N dynamics following the first plowing of long-term no-till fallow in dryland winter wheat. ASA, CSSA, SSSA International Annual Meeting, Cincinnati, OH.
101. **Ghimire, R.**, J.B. Norton, and U. Norton. 2012. Greenhouse gas emissions from irrigated crop and forage production in Wyoming. Western Society of Soil Science. University of California, Davis, CA.
102. Bista, P., U. Norton, **R. Ghimire**, and J.B. Norton. 2011. Greenhouse gas emission and crop productivity from the contrasting management approach in dryland winter wheat-fallow of the Northern High Plains. ASA, CSSA, SSSA International Annual Meeting, San Antonio, TX.
103. Bista, P., U. Norton, **R. Ghimire**, and J.B. Norton. 2011. Spring greenhouse gas emissions and residue biomass from contrasting management approach in dryland wheat-fallow of the Northern High Plains. Western Society of Soil Science and Western Society of Crop Science Joint Annual Meeting, Laramie, WY.
104. **Ghimire, R.** and J.B. Norton. 2011. Soil organic matter changes with the transition to organic and reduced input crop-range-livestock production: first and second-year results. ASA, CSSA, SSSA International Annual Meetings, San Antonio, TX.
105. **Ghimire, R.** and J.B. Norton. 2011. Management approaches affect soil organic matter and mineral nitrogen in dry land wheat-based rotations of Wyoming. Western Society of Soil Science and Western Society of Crop Science Joint Annual Meetings, Laramie, WY.
106. **Ghimire, R.** and J.B. Norton. 2010. Reduced-input and organic management approaches affect soil organic carbon and nitrogen in Wyoming crop production. Western Society of Soil Science and the Western Society of Crop Sciences, Las Vegas, NV.
107. **Ghimire, R.**, S.C. Shah, and K.R. Dahal. 2010. No-tillage and crop residue management for carbon sequestration in Rice-Wheat cropping systems of Nepal. International Conference on Soil Fertility and Soil Productivity, Berlin, Germany.
108. **Ghimire, R.**, S.C. Shah, and K.R. Dahal. 2009. Tillage and residue management effects on soil organic carbon sequestration in the rice-wheat cropping system of Nepal. Fourth World Congress on Conservation Agriculture, New Delhi, India.
109. **Ghimire, R.**, S.C. Shah, and K.R. Dahal. 2008. Tillage, crop residue, and nitrogen management effects on soil organic carbon sequestration by rice-wheat cropping system of Nepal. Fifth National Conference on Science and Technology, Kathmandu, Nepal.

Other Presentations (2016-2023, * indicate student presentation)

1. *Thapa, V.R., **R. Ghimire**, V. Acosta-Martinez, M. Marsalis, and M. Schipanski. Cover crop effects on soil health in semiarid cropping systems. Ogallala Water CAP Project Annual Meeting, Virtual, 2020.

2. *Salehin, S.M.U., **R. Ghimire**, A. Nilahyane, and A. Mesbah. Soil N management for agronomic and environmental sustainability in dryland sorghum production. ACES Open House, Las Cruces, NM, 2019.
3. *Thapa, V.R., **R. Ghimire**, V. Acosta-Martinez, O.J. Idowu, and M.A. Marsalis. Alternative management practices for improving soil health and resilience in semiarid agroecosystem of eastern New Mexico. ACES Open House, Las Cruces, NM, 2019.
4. **Ghimire, R.** Cropping Systems Agronomy: program highlights and on-going research. ACES Open House, Las Cruces, NM, 2018.
5. *Thapa, V., **R. Ghimire**, A.O. Mesbah. 2018. Land use systems effects on soil organic matter and nutrients in drylands of Eastern New Mexico. ACES Open House, NMSU.
6. *Allan, M.J., **R. Ghimire**, C. Brungard, and S. Begna. 2018. Evaluating spatiotemporal variability of soil properties for sustainable corn production in Eastern New Mexico. Graduate Student Fair, University Research Council, NMSU.
7. *Thapa, V., **R. Ghimire**, O.J. Idowu, and A.O. Mesbah. 2018. Soil fertility response to tillage systems and cover cropping in a dryland corn-sorghum rotation. Graduate Student Fair, University Research Council, NMSU.
8. *Thapa, V., and **R. Ghimire**. 2018. Land use systems effects on soil health in drylands of Eastern New Mexico. NeSA 10th International conference (**Second place in oral competition**).
9. *Ghimire B., **R. Ghimire**, A.O. Mesbah. 2017. Cover crops effects on soil moisture, weed density, and potentially mineralizable carbon in a winter wheat-summer fallow system. EPPWS Graduate Seminar, New Mexico State University, Las Cruces, NM.
10. *Ghimire B., **R. Ghimire**, A.O. Mesbah. Potentially mineralizable carbon under cover crops: field results and laboratory incubation study. University Research Council Fair, New Mexico State University, Las Cruces, NM, 2017 (**First place in student poster competition**).
11. **Ghimire, R.**, A.O. Mesbah. Cover crops for improving the sustainability of winter wheat – sorghum – fallow system. University Research Council Fair, New Mexico State University, Las Cruces, NM, 2016.
12. *Ghimire B., **R. Ghimire**, A.O. Mesbah. Potentially mineralizable carbon under cover crops: field results and laboratory incubation study. EPPWS Graduate Student Poster Competition, New Mexico State University, Las Cruces, NM, 2016.

7. EXTENSION/OUTREACH

Extension and Outreach Publications

1. **Ghimire, R.**, W.S. Paye, M.A. Marsalis, and R. Sallenave. 2023. Using cover crops in New Mexico: Impacts on soil moisture and subsequent crop yield. NMSU Extension Guide (In Press).
2. **Ghimire, R.**, R. Sallenave, and A. Smith Muise. 2022. Using cover crops in New Mexico: impacts and benefits of selecting the right crops. NMSU Extension Circular 704.

3. **Ghimire, R.**, V.R. Thapa, and M.A. Marsalis. 2020. Cover crops in semiarid southern High Plains. Ogallala Water Resource Guide Series.
4. Idowu J., **R. Ghimire**, R. Flynn and A. Ganguli. 2019. Executive Summary: soil health – importance, assessment, and management. NMSU Cooperative Extension Services. Circular 694A. https://aces.nmsu.edu/pubs/_circulars/CR694A/
5. Idowu J., **R. Ghimire**, R. Flynn and A. Ganguli. 2019. Soil health – importance, assessment, and management. NMSU Cooperative Extension Services. Circular 694B. https://aces.nmsu.edu/pubs/_circulars/CR694B
6. Walsh, O., M. Marsalis, **R. Ghimire**, S. Norberg, and S. Kesoju. 2019. Recap of the 2019 Western Society of Crop Science Meeting. CSA News, September 2019.
7. Acosta-Martinez, V., K.B. Bhandari, **R. Ghimire**, M. Schipanski, and A. Nunez. 2019. Soil Health. Ogallala Water Resource Guide Series. Retrieved from <http://ogallalawater.org/soil-health>.
8. **Ghimire, R.** 2018. In Kathy Wythe (Ed.). Mixing it up: In the Ogallala Aquifer region, one size (of farming) doesn't fit all. TxH2O Fall Newsletter 2018.
9. **Ghimire, R.** 2018. Sustainably feeding current and future generations. Scientia Global, <https://www.scientia.global/dr-rajan-ghimire-sustainably-feeding-current-and-future-generations/>.
10. Marsalis, M.A., T. Blaine, **R. Ghimire**. 2018. Ogallala Summit White Paper: New Mexico. Ogallala Summit, April 2018. <http://ogallalawater.org/ogallala-summit-april-2018-new-mexico-white-paper/>.
11. Cano, A., A. Nunez, V. Acosta-Martinez, M. Schipanski, **R. Ghimire**, and C. Rice. 2017. Linking soil health to water conservation in the Ogallala Aquifer region. Colorado Water, special issue – the Ogallala Water, November/December 2017.
12. **Ghimire, R.** and M.A. Marsalis. Farmers and Researchers Discussed Climate Risk and Drought Management Strategies at Regional Meeting. Plant & Environmental Sciences Departmental Newsletter, August 2017.
13. Idowu, J., S. Angadi, M.K. Darapuneni, and **R. Ghimire**. 2017. Reducing tillage in arid and semi-arid cropping systems. NMSU Cooperative Extension Services. Guide A-152. http://aces.nmsu.edu/pubs/_a/A152.pdf.
14. **Ghimire R.** and S. Machado. 2017. Soil acidification impacts crop yield in a wheat-fallow system. *Crop and Soil*. 50:14-16.
15. Norton, J., **R. Ghimire**, P. Stahl, J. Ritten, D. Peck, and U. Norton. 2014. Soil quality and the benefits of crop rotation, reduced tillage, and manure application in crop and forage systems. 2014 Field Days Bulletin, University of Wyoming, Laramie, WY.
16. Norton, U., P. Bista, **R. Ghimire**, and J.B. Norton. 2014. One-time summer tillage does not negate the long-term benefits of no-till. *Crop and Soils*, May-June 2014.

17. Norton, U., P. Bista, **R. Ghimire**, and J.B. Norton. 2014. One-time summer tillage of chemical fallow in a dryland winter wheat rotation does not negate long-term benefits accrued under no-till management Nutrient digest, Nutrient Management Newsletter for the Western US, Spring 2014.
18. Norton J.B. and **R. Ghimire**. 2013. Soil quality and the benefits of crop rotation, reduced tillage, and manure application. Nutrient digest, Nutrient Management Newsletter for the Western US, Fall 2013.
19. **Ghimire, R.**, U. Norton, J.B. Norton, and P. Bista. 2013. Greenhouse gas emissions from alternative management approaches of irrigated crop and forage production system. 2013 Field Days Bulletin, University of Wyoming, Laramie, WY.
20. Bista, P., U. Norton, **R. Ghimire**, J. Norton, and J. Meeks. 2013. Effect of Summer Tillage on Greenhouse Gas Emissions from Organic, Conventional, and No-Till Fallows in Dryland Winter Wheat Production. 2013 Field Days Bulletin, University of Wyoming, Laramie, WY.
21. Norton, J.B., **R. Ghimire**, U. Norton, J. Meeks, and S. Paisley. 2012. Sustainable agriculture systems. 2012 Field Days Bulletin, University of Wyoming, Laramie, WY.
22. Norton, J.B., **R. Ghimire**, E. Mukhwana, and D. Peck. 2012. Soil Quality under wheat-fallow, minimum-till, and no-till cropping systems. 2012 Field Days Bulletin, University of Wyoming, Laramie, WY.
23. Meeks, J., J.B. Norton, R. King, **R. Ghimire**, U. Norton, P. Bista, J. Ritten, D. Peck. 2012. The long-term project begins yielding results. Reflections Magazine. University of Wyoming, Laramie, WY.
24. Bista, P., U. Norton, **R. Ghimire**, and J.B. Norton. 2011. Greenhouse gas emissions from dryland winter wheat-fallow system under conventional, no-till, organic, and transition to organic management. 2011 Field days Bulletin, University of Wyoming, Laramie, WY.
25. **Ghimire, R.**, J.B. Norton, J. Meeks, and R. King. 2011. Soil organic matter and microbial dynamics of the SASP. 2011 Field Days Bulletin, University of Wyoming, Laramie, WY.
26. **Ghimire, R.**, J.B. Norton, P. Bista, and U. Norton. 2011. Trace gas emission from conventional, reduced-input, and organic approaches of the crop-range-livestock farming in Wyoming. 2011 Field Days Bulletin, University of Wyoming, Laramie, WY.
27. Gebault-King, R., J. Norton, J. Ritten, E. Arnould, M. Press, **R. Ghimire**, and J. Meeks. 2011. Soil Fertility Challenges in Northern High Plains Organic Farming Operations. 2011 Field Days Bulletin, University of Wyoming, Laramie, WY.

Extension/Outreach Presentations and Videos

1. Ghimire, R. Soil health and carbon sequestration. NM Agriculture Sustainability workshop, June 27-29, 2022, Las Cruces, NM, #Participants: 83
2. Ghimire, R. et al. Cover crops in a corn rotation: impacts on soil health, water dynamics, and forage quality. 2022 Southwest Hay & Forage Conference, Jan. 26-28, 2022, Ruidoso, NM, #Participants: 125

3. Cover crops, alternative forages, and soil health. Joint TX & NM Extension Agent Dairy Training, Oct. 27-29, 2021, #Participants: 47
4. Cover crops and soil health. ASC Clovis Field Day, Aug. 3, 2021, #Participants: 83
5. Tillage management in dryland. ASC Clovis Field Day, Aug. 3, 2021, #Participants: 83
6. Perennial and pasture carbon sequestration. ASC Clovis Field Day, Aug. 3, 2021, #Participants: 83
7. Assessing diverse benefits of circular buffer strips. ASC Clovis Field Day, Aug. 3, 2021, #Participants: 83
8. Cover crops, soil health and water dynamics. NRCS Staff training, June 23-24, 2021, #Participants: 19.
9. Do cover crops use all the water? NRCS Cover Crops Training, March 23, 2021, #Participants: 37.
10. Soil Amendments, Soil Health Workshop, October 25-26, 2020, # Participants: 51.
11. Crop rotation and livestock integration for soil health management in New Mexico. Soil Health Workshop, October 25-26, 2020, # Participants: 51.
12. Soil Amendments, Soil Health Workshop, September 22-23, 2020, # Participants: 84.
13. Crop rotation for soil health management in New Mexico. Soil Health Workshop, September 22-23, 2020, # Participants: 91.
14. Soil health benefits of cover crops and forage systems (V. Acosta-Martinez, R. Ghimire, C. West), TAWC - Texas Alliance for Water Conservation Extension talk series, September 2, 2020. <https://www.youtube.com/watch?v=xClouyrp5Gdk&app=desktop>, # Participants in the discussion: 23.
15. Soil health management systems for semiarid agroecosystems. New Mexico Soil Health Champions Network, September 1, 2020, # Participants: 19.
16. Linking soil health to essential soil functions. Ogallala Water CAP Outreach Webinar Series, July 23, 2020, # Participants: 63.
17. Cover crops and soil water dynamics. NRCS staff training on soil health, Clovis, NM, Sept. 18, 2019, # Participants: 17.
18. Cropland and grassland soil health. New Mexico Coalition to Enhance Working Lands Summit, Albuquerque, NM, April 19, 2019, # Participants: 69.
19. Conservation systems for soil sustainability. 31st Annual High Plains No-Till Conference, Burlington, CO, February 7-8, 2019, # Participants: 97.
20. Dairy Compost for Soil Health. Agricultural Science Center Clovis Annual Field Day, August 8, 2019, # Participants: 123.
21. Soil health responses of cover crops in crop and forage production systems. Spring Field Day, Agricultural Science Center Clovis, April 11, 2019, # Participants: 43.
22. Cover Crops, No-till & Crop Rotation Management. The annual field day, Agricultural Science Center, Clovis, Aug. 9, 2018, # Participants: 118.

23. Cover crop and stubble management for soil health. Forage and cover crops field day, Agricultural Science Center, Clovis, April 11, 2018, # Participants: 45
24. Cover crops for soil health and weed management. Private Applicators Workshop, Tucumcari, Nov. 21, 2017, # Participants: 23.
25. Cover crops for soil health and resilience. The annual field day, Agricultural Science Center, Clovis, August 9th, 2017, # Participants: 123.
26. Conservation systems for agroecosystem resilience under dryland and limited irrigation management. Climate Outlook forum, Clovis, NM. April 2017, #Participants: 48.
27. Conservation systems for sustaining High Plains agriculture, 8th Annual Northeastern New Mexico Prairie Partners Meeting, Tucumcari, NM, December 2016. # Participants: 87.
28. Cover crops and soil organic matter dynamics. The annual field day, Agricultural Science Center, Clovis, Aug. 3, 2016, # Participants: 115.
29. Cover crops in winter wheat-sorghum-fallow system, Canola/cover crop field day, May 10th, 2016, # Participants: 71.
30. Soil organic matter and climate change. Climate Change Workshop for School Teachers, Pendleton, OR, October 2014.

Webinars and YouTube Video

1. Acosta-Martinez, V., R. Ghimire, C. West. Soil health benefits of cover crops and forage systems <https://www.youtube.com/watch?v=xCloryp5Gdk&app=desktop>,
2. Acosta-Martinez, V. and R. Ghimire. 2020. Linking soil health to essential soil functions. <https://us15.campaign-archive.com/?u=dac37206cccfb06679106049c&id=a5433ebe8e>
3. Silvasy, T., N. Bhattarai, R. Regmi, **R. Ghimire**, et al. 2017. Soil testing survey and soil fertility management in Nepal. <https://www.youtube.com/watch?v=l0ROyf7wLFQ>.
4. Allan, M., P. Bista, **R. Ghimire**, and S. Machado. 2015. Effects of cover crop on soil carbon, nitrogen, and soil moisture in a wheat-fallow system. https://www.youtube.com/watch?v=-TP_jvhV3Kc&index=2&list=PLUqxhcJ7EFQ4f5GhP_L27fGaSA0985WwH.
5. Burns, C., **R. Ghimire**, P. Bista, and S. Machado. 2015. Long-term management effects on labile C: a response to changing climate in the Pacific Northwest. https://www.youtube.com/watch?v=lh9XVIbS-EA&index=4&list=PLUqxhcJ7EFQ4f5GhP_L27fGaSA0985WwH
6. **Ghimire, R.** and S. Machado. 2015. Soil organic carbon dynamics in Pendleton tillage – long-term fertility experiment. Climate Change and Agriculture in the Pacific Northwest Webinar Series. <https://www.youtube.com/watch?v=1p1e4AUOZnE&feature=youtu.be>

8. TEACHING

Teaching Special Topic Courses other than Thesis/Dissertation

Semester	Course #	Course title	Credit hr (# students)
Spring 2022	SOIL 600	Doctoral Research (writing in agronomy and soils)	3 (2)
Spring 2021	SOIL 696-M02	Doctoral Proposal	1 (1)
Spring 2021	SOIL 698-M05	Special Topic (writing in agronomy/soils)	3 (1)
Spring 2020	SOIL 698-M01	Soil carbon and nutrient cycling II	2 (1)
Spring 2020	SOIL 598-M01	Special Research Programs (data analysis and manuscript writing)	2 (1)
Fall 2019	Soil 698-M03	Soil carbon and nutrient cycling	5 (3)
Spring 2019	SOIL 698-M01	Special Research Programs (literature review and synthesis)	2 (1)
Fall 2018	SOIL 600-M02	Doctoral Research (writing in agronomy and soils)	4 (1)
Fall 2018	SOIL 698-M01	Special Research Program (Ph.D. proposal)	5 (1)
Fall 2018	SOIL 598-M03	Special Research Programs (proposal writing)	2 (2)
Fall 2017	SOIL 598-M03	Special Research Programs (literature review and meta-analysis)	1 (1)
Spring 2017	SOIL 698-M01	Special Research Programs (literature review and synthesis)	2 (1)
Fall 2016	SOIL 598-M03	Special Research Programs (proposal writing)	1 (1)

Guest Lectures and Other In-class Teaching Activities

- Guest lecture on soil health and soil organic matter management on soil fertility class at University of Central Missouri, Warrensburg, MO, April 7, 2021 (virtual)
- Plant and Environmental Sciences Graduate Seminar, January 18, 2019
 - Conservation systems for soil health and sustainability
- Guest lecture on Soil Ecology and presentation at Graduate Workshop, Northwest University, Xi'an, China, Nov. 25-Dec 4, 2017
 - Strategies for improving agricultural sustainability in the US High Plains
 - Writing in agronomic science: a guide to becoming a successful early career scientist
- Summer School and Workshop, China Agriculture University, Beijing, China, June 1-7, 2016
 - DayCent model for simulating crop yield and soil processes
 - Measurement and modeling of winter wheat-summer fallow system using DayCent model
- Spring 2016, Guest Lecture on Soil Management and Fertility (Soil 312), New Mexico State University
 - Class size: 11 students
 - Collaborated with course leader in preparation of course material, designing selected homework assignments, and providing lectures in the class
- Plant and Environmental Sciences Graduate Seminar, January 19, 2016
 - Soil organic matter dynamics and sustainable crop production in the High Plains cropping systems

- Fall 2013, Soil Fertility and Fertilizers (Graduate/Undergraduate course, Soil 4160/5160), University of Wyoming (Course Instructor)
 - Class size: 20 students (9 graduate + 11 undergraduate)
 - Prepared course curriculum, designed homework assignments, soil test report for student homework, and midterm as well as final exam questions
 - Taught full course (3 credits)
 - Graded homework assignments, term papers, and exams
- Student responses on teaching evaluation (n = 15, agree or strongly agree)*
 - Designing syllabus/delivering course material (100%)
 - Prepared for class (100%)
 - Effective communication (94%)
 - Enthusiastic about teaching (85%)
 - Thorough knowledge of course material (82%)
 - Genuinely concerned for students (100%)
 - Available for assistance (100%)
- Fall 2012, Soil Microbiology (Graduate/Undergraduate course and laboratory, Soil 4140/5140), the University of Wyoming as a Graduate Teaching Assistant
 - Class size: 23 students (5 graduate + 18 undergraduate)
 - A planned laboratory exercise in consultation with the lead instructor (Urszula Norton) for 23 students and lab instruction to one group (12 students)
 - Prepared laboratory assays for bacterial and fungal biomass and community structure study and culture medium for a variety of organisms and helped students in the identification and characterization of organisms
 - Grading and evaluation of homework assignments, term papers, and exams
- Spring/summer 2009, Soil Microbiology (Graduate), Tribhuvan University, Nepal
 - Course instructor, class size: 2 students
 - Prepared course curriculum, designed homework assignments, midterm, and final exams
 - Taught full course (2 credit), evaluated/graded homework assignments, term papers, and exams
- 2008, Soils of Nepal (Undergraduate Soil Science Major), Tribhuvan University, Nepal.
 - Course instructor, class size: 15 students
 - Prepared course curriculum, designed homework assignments, midterm, and final exams
 - Taught full course (2 credit), evaluated/graded homework assignments, term papers, and exams
- 2006-2009, Soil Fertility, Fertilizer, and Integrated Nutrient Management (Undergraduate), Fall Semester, Tribhuvan University, Nepal
 - Course instructor, class size: 50 students (one theory and two laboratory sections).
 - Prepared course curriculum, designed homework assignments, and midterm and final exams
 - Plan, prepare and run laboratory demonstration exercises for both groups
 - Taught full course (3 credits each), graded homework assignments and exams

- 2006-2009, Fundamentals of Soil Science and Geology (Undergraduate), Spring Semester, Tribhuvan University, Nepal
 - Course instructor, class size: 50 students (one theory and two laboratory sections).
 - Prepared course curriculum, designed homework assignments, midterm, and final exams
 - Plan, prepare and run laboratory demonstration exercises for both groups
 - Taught course (3 credits each), evaluated homework assignments and exams

9. STUDENT ADVISING

Graduate Students/Postdocs

Name	Degree /training	Year	Responsibility
Barsha Sharma	MSc	Spring 2023 to fall 2024	Major Advisor
Swanee Swaroj	MSc	-	Member
Dotun Arjes	PhD	Spring 2023 – Fall 2026	Major Advisor
Adebayo Olufemi	PhD	Spring 2022 – Spring 2025	Major Advisor
Amrit D. Adhikari	MSc	Fall 2021 – Spring 2023	Co-Advisor*
Sundar Sapkota	PhD	Spring 2021 – Spring 2024	Major Advisor
Paramveer Singh	PhD	Summer 2019 – Fall 2022	Member
Dr. Wooiklee Paye	PostDoc	March 2020 – March 2023	Advisor
Pramod Acharya	PhD	Summer 2019 – Spring 2023	Major Advisor
Dr. Vesh R. Thapa	PostDOc	Fall 2021 – Summer 2022	Advisor
Vesh R. Thapa	PhD	Fall 2018 – Summer 2021	Major Advisor
Sk. Musfiq-US- Salehin	MSc	Fall 2018 – Spring 2020	Major Advisor
Dr. Abdelaziz Nilahyane	PostDOc	August 2018 – September 2019	Advisor
Pramod Acharya	MSc	Fall 2017-Spring 2019	Co-Advisor*
Mikayla J. Allan	MSc	Spring 2017-Fall 2018	Major Advisor
Vesh R. Thapa	MSc	Fall 2016 – Summer 2018	Major Advisor
Apar GC	MSc	Fall 2016 – Spring 2018	Member
Binod Ghimire	MSc	Spring 2016 – Fall 2017	Co-Advisor

**Graduate student at Eastern New Mexico University*

Undergraduate Students

- Carissa Burns, summer 2015 (undergraduate, REACCH summer intern)
- Mikayla Allan, summer 2015 (undergraduate, REACCH summer intern)
- Rebecca Graham, summer 2014 (undergraduate, REACCH summer intern)

- Kristie A. Bear, 2010-2013, McNair fellow, summer 2013
- Pradeep Neupane, 2010-2012, Undergraduate lab assistant

Visiting Scholars

- Babu Ram Khanal, Agriculture and Forestry University, Nepal, 2018/19
- Yaquiong Fan, China Agricultural University, 2017

Research Technicians

- Raquel La-Tot, Laboratory Technician (August 2019 – May 2020)
- Carole Tuttle, Research Assistant (January – June 2019).
- Dr. Ramesh Dhakal (December 2016 - November 2017)
- Jolene Sazloy, Research Associate (November 2015 – December 2017)

10. PROFESSIONAL SERVICES

- **Department of Plant and Environmental Sciences Committee**
 - Chair of the Awards Committee, 2022/2023
 - Member of the Awards Committee, 2019-2021
 - Search Committee – Assistant Professor of Alternative Crops and Industrial Hemp, 2019
 - Graduate Studies Committee, 2018-present
 - Undergraduate Student Recruitment and Retention Committee, 2016-2022
- **College-level Committee**
 - Search Committee – Agricultural Experiment Station Associate Director, 2022
- **State-level Committee**
 - Advisory Committee, New Mexico Western-Sustainable Agriculture Research and Education, 2020-2022
 - Organized NM Agriculture Sustainability Workshop, June 27-29, 2022
 - Ad-hock steering committee, Healthy Soils Program Planning and Implementation, New Mexico Department of Agriculture, 2019
- **Professional Committee**
 - Secretary/Treasurer, Western Society of Crop Science, 2021-2023
 - Presiding Leader, Soil Carbon and Greenhouse Gas Emissions Community, 2021
 - Member, SSSA committee on Global Soil Partnership Soil indicators for Sustainable Soil Management, 2020
 - Vice Leader, Soil Carbon and Greenhouse Gas Emissions Community, 2020
 - Presiding Leader, Global Climate Change Community, 2019
 - Vice Leader, Global Climate Change Community, 2018

- Secretary/Treasurer, Western Society of Crop Science, 2017-2019
- Soil and Water Conservation Scholarship Committee member 2017-2019
- Soil Science Applied Research Award Committee member 2017-2018

- **Journal Editor**
 - **Guest Editor:** Environmental Research Letters, [Focus on the Future of Water-Limited Agricultural Landscapes](#), 2022.
 - **Section Editor:** Sustainability <https://www.mdpi.com/journal/sustainability/editors>, 2020 -2022. Special issues edited
 - Agroecological Approaches to Soil Health and Water Management: https://www.mdpi.com/journal/sustainability/special_issues/Agroecological_Soil_Water
 - Sustainability in the Mountains Region, http://www.mdpi.com/journal/sustainability/special_issues/mountains_region, 2016-2017 (handled six papers in total, recommended publication of five papers)
 - **Associate Editor:** Agronomy Journal, <https://dl.sciencesocieties.org/about-society/committees/A302/members>, 2019-2024
 - **Review Editor:** Frontiers in Plant Science, <http://journal.frontiersin.org/journal/plant-science>, 2015-2018
 - **Contributing Editor:** American Journal of Agricultural and Biological Sciences, <http://thescipub.com/journals/ajabs>, 2012-2014

- **Proposal Review**
 - USDA-NIFA, Sustainable Agroecosystems and Management – 2022 (reviewed ... proposals)
 - USDA-NIFA Sustainable Agricultural Systems – 2021 (reviewed ten proposals)
 - NM Chile Pepper Institute Proposals – 2021 (reviewed ten proposals)
 - USDA-NIFA Foundational Program – 2020 (reviewed 12 proposals)
 - NMDA Healthy Soils Program – 2020 (reviewed ten proposals)
 - NIMSS Multistate Proposal – 2020 (reviewed one proposal)
 - USDA-NIFA Small Business Research Initiative – 2020 (reviewed nine proposals)
 - USDA-NIFA Organic Research and Extension Initiative program – 2019 (reviewed 12 proposals)
 - Western Sustainable Agriculture Research and Education - 2019 (reviewed ten proposals)

- USDA-NIFA Foundational Program – 2018 (reviewed 13 proposals)
- USDA-NIFA Organic Research and Extension Initiative program – 2017 (reviewed 11 proposals)

- **Journal Papers Reviewed (10-15 papers per year since 2015)**

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| ○ Agricultural Research | ○ Greenhouse Gases: Science and Management |
| ○ Agricultural Water Management | ○ Journal of Integrative Agriculture |
| ○ Agriculture, Ecosystem, and Environment | ○ Journal of the Institute of Agriculture and Animal Science |
| ○ Agronomy (MDPI) | ○ Journal of Mountain Science |
| ○ Agronomy Journal (>10) | ○ Land Degradation and Development |
| ○ Air, Water, and Soil Pollutions | ○ Mountain Science |
| ○ Agricultural Systems | ○ Nutrient Cycling in Agroecosystems (>5) |
| ○ American Journal of Agricultural and Biological Sciences | ○ PeerJ |
| ○ Archives of Agronomy and Soil Science | ○ PlosOne |
| ○ Arid Land Research and Management | ○ Science of the Total Environments |
| ○ European journal of soil biology | ○ Scientific Reports |
| ○ Field Crops Research | ○ Soil Science |
| ○ Frontiers in Environmental Science | ○ Soil Science Society of America (>5) |
| ○ Frontiers in Plant Science (>5) | ○ Soil Use and Management |
| ○ Frontiers in Ecology and Evolution | ○ Sustainability |
| ○ Grassland science | ○ The World Scientific Journals |
| ○ Global Change Biology | ○ Vedos Zone Journal |
| ○ Journal of Environmental Quality | |

- **Graduate Student Oral/Poster Presentations Judging**

- Climate Change Community posters, ASA, CSSA, and SSSA, International Annual Meetings, 2020 (Virtual platform)
- SASES Club Poster Contest. ASA, CSSA, and SSSA, International Annual Meetings, Tampa, FL, 2017
- Soil Carbon and Greenhouse Gas Emissions Community. ASA, CSSA, and SSSA, International Annual Meetings, Phoenix, AZ, 2016
- Western Society of Crop Science Annual Meeting, Albuquerque, NM, 2016
- Greenhouse Gas Emissions Community. ASA, CSSA, and SSSA, International Annual Meetings, Minneapolis, MN, 2015
- Soil Biology and Biochemistry division. ASA, CSSA, and SSSA, International Annual Meetings, Long Beach, CA, 2014

- **Meeting Organizer/Session Chair**

- Special Session Symposium - Carbon Farming for Climate Change Mitigation, ASA, CSSA, and CSA International Annual Meetings, Salt Lake City, UT, 2021.
- Soil Carbon and Greenhouse Gas Emissions Community Student Oral and Poster sessions and Professional Oral Session chair, ASA, CSSA, and CSA International Annual Meetings, Salt Lake City, UT, 2021.
- Special Session Symposium - Managing Limited Water Resources in a Changing Climate, ASA, CSSA, SSSA International Annual Meetings, San Antonio TX, 2019
- Symposium - Climate Smart Practices and Agricultural Resilience, ASA, CSSA, SSSA International Annual Meetings, San Antonio TX, 2019
- Global Climate Change General Session (oral session I and II), ASA, CSSA, SSSA International Annual Meetings, San Antonio TX, 2019
- Global Climate Change General Session (posters), ASA, CSSA, SSSA International Annual Meetings, San Antonio TX, 2019
- Symposium – Food-Water-Energy Nexus Approach for Climate Change Mitigation and Adaptation, ASA and CSSA International Annual Meetings, Baltimore, MD, 2018
- Global Climate Change: More Recent Observations and Adaptations Oral I (includes student competition), ASA and CSSA International Annual Meetings, Baltimore MD, 2018
- Soil Carbon and Greenhouse Gas Emissions Community. ASA, CSSA, and SSSA, International Annual Meetings, Tampa FL, 2017
- **Judge of Soil Judging competition:** Umatilla and Morrow county FFA, OR, 2014

11. NEWS AND MEDIA COVERAGE

- March 23, 2022, NMSU researcher receives funding from NIFA to support soil health project, NMSU Press Release
- Nov. 1, 2021, A New Mexico college is aiming to help the agriculture industry fight climate change in arid environments, ABQ New Journal
- May 23, 2020, Research to improve soil health takes root at NMSU, **Las Cruces Sun-News (also featured in the spring 2020 issue of ACES Impacts, pp 12-15).**
- May 2, 2020, NMSU study finds cover crops can improve soil health, **Las Cruces Sun-News.**
- Sept. 22, 2019, NMSU researcher launches a study on strategically timed tillage. **Las Cruces Sun-News.** This news was also highlighted in:
 - Great Falls Tribune
 - El Paso Herald-Post
- May 25, 2019, NMSU researchers test new water conservation practices (Featured Dr. Angadi's and my program). **Las Cruces Sun-News.** This news was also highlighted in:
 - Southwest Farm Press

- USDA NIFA [Update](#)
- Spring 2019, Wellspring of innovation, college researchers test new water conservation practices. **ACES Impacts**, pp 8-9.
- Fall 2018, Mixing it up: In the Ogallala Aquifer region, one size (of farming) doesn't fit all. **txH₂O** Fall Newsletter 2018.
- June 20, 2018, Sustainably feeding current and future generations. **Scientia** Global (a UK based science magazine), <https://www.scientia.global/dr-rajan-ghimire-sustainably-feeding-current-and-future-generations>.
- Aug, 22, 2016, NMSU's Clovis research seeks sustainable crops. [Las Cruces Sun-News](#).
- May 7, 2016, NMSU's Clovis Science Center reports on the benefits of canola, cover crops. [Las Cruces Sun-News](#).