

Michaela Buenemann

Curriculum Vitae

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Education

- Ph.D. University of Oklahoma, Norman, OK, 2007 (Geography)
B.A. Universität-Gesamthochschule Paderborn, Germany, 1999 (Geography, Spanish Literature, Media Sciences)

Professional Positions

- 2014-Present Associate Professor, Department of Geography, New Mexico State University, Las Cruces, NM
2020-Present Associate Professor through Letter of Academic Title, Department of Geography and Environmental Studies, University of New Mexico, Albuquerque, NM
2020-Present Co-Director, Spatial Applications Research Center (SpARC), New Mexico State University, Las Cruces, NM
2008-2014 Assistant Professor, Department of Geography, New Mexico State University, Las Cruces, NM
2007-2008 Adjunct Lecturer, University of Arizona, Tucson, AZ
2005-2007 Instructor, James Madison University, Harrisonburg, VA
2000-2005 Graduate Teaching Assistant, University of Oklahoma, Norman, OK
1997-1999 Undergraduate Research Assistant, Universität-Gesamthochschule Paderborn, Germany

Scholarly and Creative Activities

Publications

Peer-Reviewed Publications

^{DS} Doctoral Student, ^{MS} Master's Student, ^{US} Undergraduate Student

* Last author(s) = senior author(s)

1. Maynard, Jonathan J., Edward Yeboah, Stephen Owusu, **Michaela Buenemann**, Jason C. Neff, and Jeffrey E. Herrick. Under Review. Accuracy of regional-to-global soil maps for on-farm decision

making: Are soil maps “good enough”? *SOIL*.

2. **Buenemann, Michaela**, Marina E. Coetzee, Josephat Kutuahupira, Jonathan J. Maynard, and Jeffrey E. Herrick. 2022 – In Press. Errors and uncertainties in soil maps: the need for better on-site estimates and soil map predictions. *PLOS ONE*.
3. Magrane, Eric, **Michaela Buenemann**, and Jamie Aguirre. 2021. Bringing literature and literary geographies into geospatial research teams. *Literary Geographies* 7 (2): 146-151.
4. Hendy, Adam, Danielle Valério, Nelseon Ferreira Fé, Eduardo Hernandez-Acosta, Claudia Mendonça, Eloane Andrade, Igor Pedrosa, Edson Rodrigues Costa, José Tenaçol Andes Júnior, Flamarion Prado Assunção, Bárbara Aparecida Chaves, Vera Margarete Scarpassa, Marcelo Gordo, **Michaela Buenemann**, Marcus Vinícius Guimarães de Lacerda, Kathryn A. Hanley, and Nikos Vasilakis. 2021. Microclimate and the vertical stratification of potential bridge vectors of mosquito-borne viruses captured by nets and ovitraps in a central Amazonian forest bordering Manaus, Brazil. *Scientific Reports* 11: 21129 (13 pages). DOI: <https://doi.org/10.1038/s41598-021-00514-0>.
5. Langbein, Laura, Jiaqi Liand, and **Michaela Buenemann**. 2021. Comparing the effects of changes in performance incentives and implementation activities on policy outcomes: evidence from air pollution emissions in China. *Journal of Comparative Policy Analysis: Research and Practice* 23 (3): 328-349. DOI: 10.1080/13876988.2020.1726708.
6. Young, Katherine I., **Michaela Buenemann**, Nikos Vasilakis, David Perrera, and Kathryn A. Hanley. 2021. Shifts in mosquito diversity and abundance along a gradient from oil palm plantations to conterminous forests in Borneo. *Ecosphere* 12 (4): e03463 (18 pages). DOI: 10.1002/ecs2.3463.
7. Hendy, Adam, Eduardo Hernandez-Acosta, Danielle Valério, Claudia Mendonça, Edson Rodrigues Costa, José Tenaçol Andes Júnior, Flamarion Prado Assunção, Vera Margarete Scarpassa, Marcelo Gordo, Nelson Ferreira Fé, **Michaela Buenemann**, Marcus Vinícius Guimarães de Lacerda, Kathryn A. Hanley, and Nikos Vasilakis. 2020. The vertical stratification of potential bridge vectors of mosquito-borne viruses in a central Amazonian forest bordering Manaus, Brazil. *Scientific Reports* (2020) 10: 18254 (13 pages). DOI: <https://doi.org/10.1038/s41598-020-75178-3>.
8. Young, Katherine I., Joseph T. Medwid, Sasha R. Azar, Robert M. Huff, Hannah Drumm, Lark L. Coffey, R. Jason Pitts, **Michaela Buenemann**, Nikos Vasilakis, David Perrera, and Kathryn A. Hanley. 2020. Identification of mosquito bloodmeals collected in diverse habitats in Malaysian Borneo using COI barcoding. *Tropical Medicine and Infectious Disease* 5 (2): 51. DOI: doi:10.3390/tropicalmed5020051.
9. Hendy, Adam, Eduardo Hernandez-Acosta, Barbara Chavez, Nelson Fé, Danielle Valério, Claudia Mendonça, Marcus Lacerda, **Michaela Buenemann***, Nikos Vasilakis*, and Kathryn A. Hanley*. 2020. Into the woods: changes in mosquito community composition and presence of key vectors at increasing distances from the urban edge in urban forest parks in Manaus, Brazil. *Acta Tropica* 206: 105441. DOI: <https://doi.org/10.1016/j.actatropica.2020.105441>
10. Kulkarni, Aditi, Wanqin Yu, Jinjin Jiang, Concepcion Sanchez, Ajit Karna, Kalli Martinez, Kathryn Hanley, **Michaela Buenemann**, Immo Hansen, Rui-de Xue, Paul Ettestad, Sandra Melman, Dagne Duguma, Mustapha Deboun, and Jiannong Xu *. 2019. *Wolbachia pipientis* occurs in *Aedes aegypti* populations in New Mexico and Florida, USA. *Ecology and Evolution* 9 1(10): 6148-6157. DOI: 10.1002/ece3.5198.
11. Diallo, D., C. T. Diagne, **M. Buenemann**, Y.Ba, I. Dia, O. Faye, A. A. Sall, O. Faye, D. Watts, S. Weaver, K. Hanley, and M. Diallo. 2019. Biodiversity patterns of mosquitoes (Diptera: Culicidae) in southeastern Senegal, epidemiological implication in arbovirus and malaria transmission. *Journal of Medical Entomology* 56 (2):453-463. DOI: 10.1093/jme/tjy204.
12. Kandel, Yashoda, Julia Vulcan, Stacy D. Rodriguez, Emily Moore, Hae-Na Chung, Soumi Mitra, Joel J. Cordova, Kalli J. L. Martinez, Alex S. Moon, Aditi Kulkarni, Paul Ettestad, Sandra Melman, Jiannong Xu, **Michaela Buenemann**, Kathryn A. Hanley, and Immo A. Hansen*. 2019. Widespread insecticide

- resistance in *Aedes aegypti* L. from New Mexico, U.S.A. *PLoS ONE* 14 (2): e0212693 (16 pages). DOI: <https://doi.org/10.1371/journal.pone.0212693>.
13. Richman, R., D. Diallo, M. Diallo, A. A. Sall, O. Faye, C. T. Diagne, I. Dia, S. C. Weaver, K. A. Hanley, and **M. Buenemann***. 2018. Ecological niche modeling of *Aedes* mosquito vectors of chikungunya virus in southeastern Senegal. *Parasites and Vectors* 11: 255 (17 pages). DOI: <https://doi.org/10.1186/s13071-018-2832-6>.
 14. McCord, S. E.^{MS}, **M. Buenemann**, J. W. Karl, D. M. Browning, and B. Hadley. 2017. Integrating remotely-sensed imagery and existing multiscale field data to derive rangeland indicators: application of Bayesian additive regression trees. *Rangeland Ecology and Management* 70 (5): 644-655. DOI: <https://doi.org/10.1016/j.rama.2017.02.004>.
 15. Herrick, J., J. Karl, S. McCord, **M. Buenemann**, C. Riginos, E. Courtright, J. Van Zee, A. C. Ganguli, J. Angerer, J. R. Brown, D. W. Kimiti, R. Saltzman, A. Beh, and B. Bestelmeyer. 2017. Two new mobile apps for rangeland inventory and monitoring by landowners and land managers. *Rangelands* 39 (2): 46-55. DOI: [10.1016/j.rala.2016.12.003](https://doi.org/10.1016/j.rala.2016.12.003).
 16. Diallo, D., A. A. Sall, C. T. Diagne, O. Faye, O. Faye, Y., Ba, K. A. Hanley, **M. Buenemann, M.**, and S. Weaver. 2014. Zika virus emergence in mosquitoes in southeastern Senegal, 2011. *Public Library of Science Neglected Tropical Diseases* 9 (10): 1-8. DOI: <http://dx.doi.org/10.1371/journal.pone.0109442>.
 17. Myint, S.W., J. Franklin, **M. Buenemann**, W.K. Kim, and C.P. Giri. 2014. Examining change detection approaches for tropical mangrove monitoring. *Photogrammetric Engineering and Remote Sensing* 80 (10): 983-993. DOI: [0.14358/PERS.80.10.983](https://doi.org/10.1016/j.pers.2014.08.003).
 18. Diallo, D., A. A. Sall, C. T. Diagne, O. Faye, K. A. Hanley, **M. Buenemann**, Y. Ba, O. Faye, S. C. Weaver, and W. Diallo. 2014. Patterns of a sylvatic yellow fever virus amplification in southeastern Senegal. *American Journal of Tropical Medicine and Hygiene* 90 (6): 1003-1013. DOI [10/4269/ajtmh.13-0404](https://doi.org/10.4269/ajtmh.13-0404).
 19. Diallo, D., C. T. Diagne, K.A. Hanley, A.A. Sall, **M. Buenemann**, Y. Ba, I. Dia, S.C. Weaver, and M. Diallo. 2012. Larval ecology of mosquitoes in sylvatic arbovirus foci in southeastern Senegal. *Parasites & Vectors* 5: 286. DOI [10.1186/1756-3305-5-286](https://doi.org/10.1186/1756-3305-5-286).
 20. Diallo, D., A.A. Sall, **M. Buenemann**, R. Chen, O. Faye, C. T. Diagne, O. Faye, Y. Ba, I. Diagne, D. Watts, S.C. Weaver, K.A. Hanley, and M. Diallo. 2012. Landscape ecology of sylvatic chikungunya virus and mosquito vectors in southeastern Senegal. *Public Library of Science Neglected Tropical Diseases* 6 (6): 1-14. DOI [10.1371/journal.pntd.0001649](https://doi.org/10.1371/journal.pntd.0001649).
 21. Clifford, M.J.^{MS}, N.S. Cobb, and **M. Buenemann**. 2011. Long-term tree cover dynamics in a pinyon-juniper woodland: climate-change-type drought resets successional clock. *Ecosystems* 14 (6): 949-962. DOI [10.1007/s10021-011-9458-2](https://doi.org/10.1007/s10021-011-9458-2).
 22. Whalley, W.B., A. Saunders, R.A. Lewis, **M. Buenemann**, and P.C. Sutton. 2011. Curriculum development: producing geographers for the 21st century. *Journal of Geography in Higher Education* 35 (3): 379-393. DOI [10.1080/03098265.2011.589827](https://doi.org/10.1080/03098265.2011.589827).
 23. **Buenemann, M.**, C. Martius, J.W. Jones, S.M. Herrmann, D. Klein, M. Mulligan, M. Reed, M. Winslow, R.A. Washington-Allen, R. Lal, and D. Ojima. 2011. Integrative geospatial approaches for the comprehensive monitoring and assessment of land management sustainability: rationale, potentials, and characteristics. *Land Degradation and Development* 22 (2): 226-239. DOI [10.1002/ldr.1074](https://doi.org/10.1002/ldr.1074).
 24. Reed, M.S., **M. Buenemann**, J. Athlopheng, M. Akhtar-Schuster, F. Bachmann, G. Bastin, H. Bigas, R. Chanda, A.J. Dougill, W. Essahli, A.C. Evely, L. Fleskens, N. Geeson, J.H. Glass, R. Hessel, J. Holden, A. Ioris, B. Kruger, H.P. Liniger, W. Mphinyane, D. Nainggolan, J. Perkins, C.M. Raymond, C.J. Ritsema, G. Schwilch, R. Sebege, M. Seely, L.C. Stringer, R. Thomas, S. Twomlow, S. Verzaandvoort. 2011. Cross-scale monitoring and assessment of land degradation and sustainable land management: a methodological framework for knowledge management. *Land Degradation and Development* 22

(2): 261-271. DOI 10.1002/ldr.1087.

25. McCarville, D.^{MS}, **M. Buenemann**, M. Bleiweiss, and J. Barsi. Atmospheric correction of Landsat thermal infrared data: a calculator based on North American Regional Reanalysis (NARR) data. In *Proceedings of the American Society for Photogrammetry and Remote*
26. **Buenemann, M.** and J. Wright. 2010. Southwest transformation: eras of growth and land-use land-cover change in Las Cruces, New Mexico. *The Southwestern Geographer* 14: 57-87.

Other Publications

1. **Buenemann, M.**. 2014. Navigating the landscape of academic geography. *The Southwestern Geographer* 17: 6-8.
2. **Buenemann, M.** 2013. *Teaching geographic information science and technology in higher education*, D. J. Unwin, K. E. Foote, N. J. Tate, and D. DiBiase. Book review. *Photogrammetric Engineering & Remote Sensing* 79 (6): 509-510.
3. **Buenemann, M.** 2012. *Why 'where' matters: understanding and profiting from GPS, GIS, and Remote Sensing*, R. Ryerson and S. Aronoff. Book review. *Photogrammetric Engineering & Remote Sensing* 78 (7): 666-667.
4. **Buenemann, M.** 2011. Application of geospatial technologies for monitoring and assessing sustainable land management. In *Understanding desertification and land degradation trends. Proceedings of the UNCCD First Scientific Conference, 22-24 September 2009, Buenos Aires, Argentina*, eds. M. Winslow, S. Sommer, H. Bigas, C. Martius, J. Vogt, M. Akhtar-Schuster and R. Thomas, 39-42. Luxembourg: Office for Official Publications of the European Countries. DOI 10.2788/62563.
5. **Buenemann, M.** 2010. Spatial resolution. In *Encyclopedia of geography*, ed. B. Warf. London: SAGE Publications Ltd., pp. 2659-2663.
6. **Buenemann, M.** 2009. *Aridland springs in North America: Ecology and conservation*, eds. L. E. Stevens and V. J. Meretsky. Book review. *Geographical Review* 99 (2): 279-281.
7. **Buenemann, M.** 2007. Quantifying the spatio-temporal dynamics of woody plant encroachment: an integrative remote sensing, GIS, and spatial modeling approach. Ph.D. Dissertation, Department of Geography, The University of Oklahoma, Norman, OK, 468 pp.

Presentations

Presentations as First Author and Presenter

^{DS} Doctoral Student, ^{MS} Master's Student, ^{US} Undergraduate Student

^{PaP} Paper Presentation, ^{PoP} Poster Presentation, ^{IIP} Illustrated Paper Presentation

^{IP} Invited presentation

1. **Buenemann, M.**, Jamie Aguirre-Pirtle, Nick Wright, and Eric Magrane. 2022. Mapping acequias of northern New Mexico. Spring 2022 NMGIC (New Mexico Geographic Information Council) Conference, Albuquerque, NM, 22 April 2022.^{IP} ^{PaP}
2. **Buenemann, M.**. Use of remote sensing, GIS, and spatial modeling for investigating the landscape epidemiology of vector-borne diseases. Spring 2021 NMGIC (New Mexico Geographic Information Council) Virtual Seminar, 16 April 2021.^{IP} ^{PaP}
3. **Buenemann, M.**, N. Wright, E. Magrane, and J. Aguirre^{MS}. Three decades of land cover change in acequia communities of northern New Mexico. Annual Meeting of the American Association of Geographers, Virtual, 7 April 2021.^{PoP}
4. **Buenemann, M.** Hands-on teaching and learning in spectroscopy and remote sensing. Annual Meeting of the American Association of Geographers, Denver, CO, 7 April 2020.^{PoP}

5. **Buenemann, M.** Cutting-edge technologies to enable geospatial and other research at NMSU and beyond. Department of Geography, New Mexico State University, Las Cruces, NM, 25 October 2019.^{PaP, IP}
6. **Buenemann, M.** Teaching "Spectroscopy and Remote Sensing": challenges and opportunities. Annual Meeting of the Southwest Division of the American Association of Geographers, Fort Worth, TX, 10 October 2019.^{PaP}
7. **Buenemann, M.** High spatial resolution land cover mapping of a complex urban-rural desert landscape. Annual Meeting of the American Association of Geographers, Washington, DC, 3 April 2019.^{PaP}
8. **Buenemann, M.** Habitat suitability of Zika and dengue mosquitoes in cities of southern New Mexico. Annual Meeting of the Southwest Division of the American Association of Geographers, New Orleans, LA, 4 October 2018.^{PaP}
9. **Buenemann, M.** The art, science, and technology behind gerrymandering vs. fair redistricting. Sigma Xi Science Café, Museum of Nature and Science, Las Cruces, NM, 30 August 2018.^{IP, PaP}
10. **Buenemann, M.** Spatial distribution of Zika and dengue mosquitoes in urban environments of southern New Mexico. Annual Meeting of the American Association of Geographers, New Orleans, LA, 10 April 2018.^{PaP}
11. **Buenemann, M.** GIS&T, LandPKS, and public engagement. Annual Meeting of the Rocky Mountain Region of the American Society for Photogrammetry and Remote Sensing, Denver, CO, 5 November 2017.^{PaP}
12. **Buenemann, M., J. Herrick, M. Coetzee, and J. Kutuahupira:** Soil maps and data: current issues and potential solutions. Annual Meeting of the Southwest Division of the American Association of Geographers, Huntsville, TX, 27 October 2017.^{PaP}
13. **Buenemann, M., J. Herrick, M. Coetzee, and J. Kutuahupira:** Variability in soil map predictions: the need for better on-site estimates and improved downscaling of soil properties. Annual Meeting of the American Association of Geographers, Boston, MA, 7 April 2017.^{PaP}
14. **Buenemann, M., C. van der Waal, and J. Herrick:** Woody plant cover mapping in drylands using remotely sensed and crowdsourced field data. Annual Meeting of the American Association of Geographers, San Francisco, CA, 29 March 2016.^{PaP}
15. **Buenemann, M.:** Scale matters in land system science. Department of Geology and Geography, West Virginia University, Morgantown, WV, 4 December 2015.^{PaP, IP}
16. **Buenemann, M.:** Geospatial technologies: mapping a difference in the earth sciences. Department of Geological Sciences, New Mexico State University, Las Cruces, NM, 18 November 2015.^{PaP, IP}
17. **Buenemann, M.:** Land system science: principles, applications, and issues of scale. Department of Geography and Environment. Department of Geography and University of Denver, Denver, CO, 29 October 2015.^{PaP, IP}
18. **Buenemann, M.:** Land system science: principles, applications, and issues of scale. Department of Geography and Environmental Studies, University of New Mexico, Albuquerque, NM, 1 May 2015.^{PaP, IP}
19. **Buenemann, M, H. Throop, and D. Eldridge.:** Soil carbon pools and their spatial variability along environmental gradients in New South Wales, Australia. Annual Meeting of the American Association of Geographers, Chicago, IL, 24 April 2015.^{PaP}
20. **Buenemann, M.:** Scale issues in land system studies. Annual Meeting of the American Association of Geographers, Tampa, FL, 8-12 April 2014.^{PaP}
21. **Buenemann, M.:** Sensitivity of land change intensity observations to spatial scale. Global Land Project Open Science Meeting, Berlin, Germany, 19-21 March 2014.^{PaP}
22. **Buenemann, M.** Scale issues in land system studies. Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK, 22 November 2013.^{PaP, IP}

23. **Buenemann, M.:** Spatio-temporal dynamics of exurbanization in the Southwest Sun Belt. Annual Meeting of the American Association of Geographers, Los Angeles, CA, 9-13 April 2013.^{PaP}
24. **Buenemann, M.:** Intensities and patterns of land transformations: the case of the northern Chihuahuan Desert. Annual Meeting of the Southwest Division of the American Association of Geographers, Las Cruces, NM, 26 October 2012.^{Pop}
25. **Buenemann, M.** and K. Hestir: Urban encroachment in southern New Mexico: another threat to the Chihuahuan Desert. International Drylands Symposium: Learning from Legacies, Sustaining the Future, Las Cruces, NM, 12 July 2012.^{PaP}
26. **Buenemann, M.:** Assessing woody plant encroachment using multiple endmember spectral mixture analysis and fuzzy logic-based change detection. Wildland Shrub Symposium, Las Cruces, NM, 21 May 2012.^{PaP}
27. **Buenemann, M.:** Effects of spatial resolution on rates and patterns of land change. Annual Meeting of the American Association of Geographers, New York, NY, 28 February 2012.^{PaP}
28. **Buenemann, M.** and K. Hestir^{MS}: Land transitions in the Chihuahuan Desert: a quarter-century of change. Annual Meeting of the Southwest Division of the American Association of Geographers, Austin, TX, 11 November 2011.^{PaP}
29. **Buenemann, M.:** Integrative geospatial approaches for assessing land change. Department of Animal and Range Sciences, Las Cruces, NM, 15 September 2011.^{PaP, IP}
30. **Buenemann, M.:** Characterizing land change and ecosystem service hotspots in the Desert Southwest: results from southwestern New Mexico. Annual Meeting of the American Association of Geographers, Seattle, WA, 16 April 2011.^{PaP}
31. **Buenemann, M.,** J. Wright, and K. Hestir^{MS}: Growtopia in the sun belt: rates and patterns of land change around Las Cruces, New Mexico, 1984-2009. Annual Meeting of the American Association of Geographers, Washington, DC, 16 April 2010.^{PaP}
32. **Buenemann, M.** Geographic information science and technology for monitoring and assessing sustainable land management. United Nations Convention to Combat Desertification, Ninth Session of the Conference of the Parties, Scientific Conference. Buenos Aires, Argentina, 23 September 2009.^{PaP}
33. **Buenemann, M.,** J. Wright, and K. Hestir^{MS}. Growtopia in the sun belt: 50 years of land cover change in southwestern New Mexico. NMSU University Research Council Fair, Las Cruces, NM, 21 September 2009.^{Pop}
34. **Buenemann, M.,** J. Wright, and K. Hestir^{MS}. Growtopia in the sun belt: 50 years of land cover change in southwestern New Mexico. Long-Term Ecological Research All Scientists Meeting. Estes Park, CO, 9 September 2009.^{Pop}
35. **Buenemann, M.** Land change modeling and Jornada Basin long-term ecological research. Jornada Symposium. Las Cruces, NM, 16 July 2009.^{PaP}
36. **Buenemann, M.:** Impacts of a global change-type drought: tree mortality in the pinyon-juniper woodlands of the Middle Rio Grande River Basin, NM. Annual Meeting of the American Association of Geographers, Las Vegas, NV, 25 March 2009.^{PaP}
37. **Buenemann, M.:** Mapping vegetation in drylands: A sub-pixel remote sensing approach. Annual Meeting of the Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing, Albuquerque, NM, 14 March 2009.^{PaP}
38. **Buenemann, M.** Solutions from out of space: vegetation assessments using remote sensing. School of Forestry, Northern Arizona University, Flagstaff, AZ, 5 November 2008.^{PaP, IP}
39. **Buenemann, M.:** Battle on the range: A geographer's view of the brush problem. Annual Meeting of the Southwest Division of the American Association of Geographers, San Marcos, TX, 23 October 2008.^{PaP}
40. **Buenemann, M.:** Accuracy assessment of subpixel land cover fraction estimates derived from

medium spatial resolution satellite imagery: An approach for dryland ecosystems. Annual Meeting of the American Association of Geographers Annual Meeting, Boston, MA, 15 April 2008.^{PaP}

41. **Buenemann, M.:** Geospatial modeling of subtle land cover changes: overview and outlook. Arizona-Nevada Academy of Science Annual Meeting, Phoenix, AZ, 29 March 2008.^{PaP}
42. **Buenemann, M.** Battle on the range: spatio-temporal dynamics of woody plant encroachment in the Fish Creek Watershed, OK. Department of Biological Sciences, Northern Arizona University, Flagstaff, AZ, 14 February 2008.^{PaP, IP}
43. **Buenemann, M.** Battle on the range: spatio-temporal dynamics of woody plant encroachment in the Fish Creek Watershed, OK. Northern Arizona University Student Chapter of the American Society for Photogrammetry and Remote Sensing, Flagstaff, AZ, 7 February 2008.^{PaP, IP}
44. **Buenemann, M.:** Quantifying the spatio-temporal dynamics of woody plant encroachment: an integrative remote sensing, GIS, and spatial modeling approach. Research Insights in Semiarid Ecosystems (RISE) Annual Symposium, Tucson, AZ, 6 October 2007.^{PoP}
45. **Buenemann, M.:** Characterizing the phenology of drylands: challenges and potentials of current and future remote sensing approaches. Phenology Research and Observations of Southwest Ecosystems (PROSE) Annual Symposium, Tucson, AZ, 5 October 2007.^{PaP}
46. **Buenemann, M.:** Vulnerability of drylands to creeping environmental phenomena: An assessment using three spatial models. Annual Meeting of the American Association of Geographers, San Francisco, CA, 20 April 2007.^{PaP}
47. **Buenemann, M.:** Why we don't know more about woody plant encroachment: A lack of interdisciplinary collaboration and participation by geographers. Annual Meeting of the American Association of Geographers, Chicago, IL, 11 March 2006.^{PaP}
48. **Buenemann, M.:** Identifying sites for riparian ecosystem restoration: Challenges and potentials of hyperspectral and LIDAR imagery. Canaan Valley Institute, Blacks Run Restoration Project Implementation Meeting, Harrisonburg, VA, 24 January 2006.^{PaP}
49. **Buenemann, M.:** A coupled remote sensing, GIS, and spatial modeling approach for the assessment of woody plant encroachment. Shenandoah Valley GIS Users Conference, Harrisonburg, VA, 20 January 2006.^{PaP}
50. **Buenemann, M.:** Modeling the spatio-temporal dynamics of woody plant encroachment through an integrative remote sensing, GIS, and spatial modeling approach. Annual Meeting of the American Association of Geographers, Denver, CO, 6 April 2005.^{PaP}
51. **Buenemann, M.:** Characterization of woody plant encroachment using multiple endmember spectral mixture analysis of multi-temporal Landsat Thematic Mapper data. Annual Meeting of the Southwest Division of the American Association of Geographers, Nacogdoches, TX, 12 November 2004.^{PaP}

Presentations as Co-Author

^{DS} Doctoral Student, ^{MS} Master's Student, ^{US} Undergraduate Student

^{PaP} Paper Presentation, ^{PoP} Poster Presentation, ^{IIP} Illustrated Paper Presentation

1. Marmolejo, J., N. McMillan, and **M. Buenemann.** Remote sensing modeling of abandoned mine activity using convolutional neural networks and LiDAR imagery. Annual Meeting of the American Geophysical Union, New Orleans, LA, 13 December 2021.^{PaP}
2. Hendy, A., D. Valério, N. F. Fé, E. Hernandez-Acosta, C. Mendonça, E. Andrade, I. Pedrosa, E. R. Costa, J. T. Andes Júnior, F. P. Assunção, B. A. Chaves, V. M. Scarpassa, M. Gordo, **M. Buenemann**, M. B. G. Lacerda, K. A. Hanley, and N. Vasilakis, N. Upwardly mobile: microclimate and the vertical stratification of potential vectors of mosquito-borne viruses in a central Amazonian forest bordering Manaus, Brazil. Annual Meeting of the American Society for Tropical Medicine and Hygiene, National Harbor, MD, November 2021.^{PoP}

3. Hernandez-Acosta, E., A. Hendy, B. A. Chaves, E. Andrade, M. Buenemann, M. V. G. Lacerda, N. Vasilakis, and K. A. Hanley. Some like it hot: how urban microclimate across a tropical city impacts *Aedes* mosquitoes' life history. 70th Annual Meeting of the American Society for Tropical Medicine and Hygiene, National Harbor, MD. November 2021.^{PaP}
4. Magrane, E., J. Aguirre^{MS}, and **M. Buenemann**. Reading and viewing acequia culture. Annual Meeting of the Southwest Division of the American Association of Geographers, Virtual, 19 November 2020.^{PaP}
5. Han, X, J. Liang, and **M. Buenemann**. Intensified oversight, organizational gaming, and policy performance: evidence from the results-based environmental governance in China. Annual Meeting of the Association for Public Policy Analysis & Management (APPAM). Virtual, 13 November 2020.
6. Marmolejo, J., N. McMillan, and **M. Buenemann**. Remote sensing modeling of abandoned mines using support vector machine classifiers on multispectral satellite images in southern New Mexico. Annual Meeting of the Geological Society of America, Portland, OR, 13 October 2021.^{PaP}
7. Hendy, A., E. Hernandez-Acosta, D. Valerio, C. Mendonça, E. Rodrigues Costa, V. M. Scarpassa, M. Gordo, N. Ferreira, **M. Buenemann**, M. Lacerda, K. H. Hanley, and N. Vasilakis. 2019. The vertical stratification of potential bridge vectors of mosquito-borne viruses in a central Amazonian forest bordering Manaus, Brazil. Annual Department of Pathology Research Day, University of Texas Medical Branch, Galveston, Texas, 8 October 2020.^{PpP}
8. Tian, M.^{US}, J. Aguirre^{US}, **M. Buenemann**, and E. Magrane. ¡Que vivan las acequias! - definitions and a meta-analysis. Annual Meeting of the American Association of Geographers, Virtual, 8 April 2020.^{Pop}
9. Castro, J.^{MS}, **M. Buenemann**, C. Brungard, and N. Pietrasiak. Evaluating Hyperspectral Field and Lab Data to Distinguish and Predict Biological Soil Crust Communities. Annual Meeting of the American Association of Geographers, Denver, CO, 7 April 2020.^{Pop}
10. Steele, C., **M. Buenemann**, S. Spiegel, and E. H. Elias. Using remote sensing to map ecological states in arid rangelands. Annual Meeting of the Ecological Society of America, Salt Lake City, UT, 5 August 2020.^{PaP}
11. Lee, S.^{DS}, D. Yan, **M. Buenemann**, W. K. Smith, S. C. Reed, and S. Ferrenberg. Using hyperspectral measurements to predict physiological traits in desert shrubs. Annual Meeting of the Ecological Society of America, Salt Lake City, UT, 2-7 August 2020.^{Pop}
12. Sabie, R., S. Bawazir, **M. Buenemann**, and A. Fernald. Multi-spatial resolution comparison of evapotranspiration. NMSU University Research and Creativity Week, Las Cruces, NM, 14-15 November 2019.^{Pop}
13. Herrick, J. E., T. Amede, B. Bestelmeyer, **M. Buenemann**, A. Buni, L. Desta, C. Ellis, J. Glover, J. Goodwin, D. Hoover, J. W. Karl, J. J. Maynard., S. McCord, B. Moebius-Clune, V. L. Morrone, J. C. Neff, G. Peacock, S. W. Salley, C. A. Seybold, K. D. Shepherd, T. Schul, S. S. Snapp, Z. P. Stewart, E. Thomas, K. Prentice, G. Toevs, B. Unnasch, and S. Wills. 2019. LandPKS: Mobile app for participatory soil health research, innovation and monitoring. ASA, CSSA and SSSA International Annual Meetings, San Antonio, TX, 11 November 2019.^{PaP}
14. Sabie, R., S. Bawazir, **M. Buenemann**, and A. Fernald. Multi-spatial resolution comparison of evapotranspiration. 64th Annual New Mexico Water Conference, Common Water, Sacred Water: Tribal Perspectives on Water Issues in New Mexico, Pueblo of Pojaque, Santa Fe, NM, 7-8 November 2019.^{Pop}
15. Young, K. I.^{DS}, **M. Buenemann**, N. Vasilakis, D. Perera, and K. A. Hanley. Conversion of forest to oil palm plantation in Borneo reduces mosquito diversity and abundance and favors a vector of arboviruses. International Meeting for Arboviruses and their Vectors, Glasgow, United Kingdom, 5 September 2019.^{Pop}
16. Hernandez-Acosta, Eduardo^{DS}, Adam Hendy, Barbara Chavez, Eolane Andrade, Izabele de Souza-Guimarães, Nelson Ferreira, **M. Buenemann**, M. Lacerda, N. Vasilakis, and K. A. Hanley. Impacts of

- microclimate on mosquito communities across levels of urbanization in Manaus, Brazil. International Meeting for Arboviruses and their Vectors, Glasgow, United Kingdom, 6 September 2019.^{PaP}
17. Hendy, A., E. Hernandez-Acosta, B. Chavez, N. Fé, D. Valério, C. Reis, M. Lacerda, **M. Buenemann***, N. Vasilakis*, and K. A. Hanley. 2019. Into the woods: changes in mosquito community composition and presence of key vectors at increasing distances from the urban edge in urban forest parks in Manaus, Brazil. International Meeting for Arboviruses and their Vectors, Glasgow, United Kingdom, 5 September 2019.^{PaP}
 18. Young, K. I.^{DS}, D. Perera, N. Vasilakis, **M. Buenemann**, and K. A. Hanley. Insertion of oil palm into forest in Borneo narrows mosquito diversity and favors a key vector of sylvatic dengue virus. Annual Meeting of the American Society of Tropical Medicine and Hygiene, New Orleans, LA, 31 October 2018.^{PoP}
 19. Hendy, A., E. Hernandez-Acosta, B. A. Chaves, N. F. Fé, D. Valério, C. Reis, M. Lacerda, M. Buenemann, N. Vasilakis, and K. A. Hanley. Effects of distance from edge and NDVI on mosquito vector communities in three urban forest parks in Manaus, Brazil. Virus by the River: Arbovirus Emergence and Re-emergence in the Tropics, Manaus, Brazil. June 2019.^{PaP}
 20. Young, K. I.^{DS}, D. Perera, **M. Buenemann**, N. Vasilakis, and K. A. Hanley. Into the woods: insertion of oil palm plantations in Borneo narrows mosquito diversity but favors a key vector of sylvatic dengue virus. Annual Meeting of the Ecological Society of America, New Orleans, LA, 7 August 2018.^{PaP}
 21. Ramsey, P.^{UG}, **M. Buenemann**, and J. Wright. Spatial distribution of conservation easements in the United States: drivers and implications. Annual Meeting of the American Association of Geographers, New Orleans, LA, 13 April 2018.^{PoP}
 22. Young, K. I.^{DS}, D. Perera, N. Vasilakis, **M. Buenemann**, and K. A. Hanley. Transition of forest to oil palm plantation in Borneo narrows mosquito diversity and favors a key vector of dengue, Zika, and chikungunya virus. Population Biology of Vector-borne Diseases Symposium, Center for the Ecology of Infectious Diseases (CEID), Athens, GA, 24 February 2018.^{PoP}
 23. Aney, G.^{MS} and **M. Buenemann**. Spatio-temporal dynamics of tree mortality and survival in northern New Mexico during the global change-type drought of 2002/2003. Annual Meeting of the Southwest Division of the American Association of Geographers, Huntsville, TX, 27 October 2017.^{PoP}
 24. Young, K. I.^{DS}, D. Perera, N. Vasilakis, **M. Buenemann**, and K. A. Hanley. Into the woods: impact of insertion of oil palm plantations on the diversity, abundance, and distribution of mosquito vectors of sylvatic dengue virus. Annual Meeting of the Ecological Society of America, Portland, OR, 11 August 2017.^{PoP}
 25. Sabie, R. and **M. Buenemann**. Monitoring and assessing surface coal mining in drylands using medium spatial resolution satellite imagery. 2nd Annual Conference on Environmental Conditions of the Animas and San Juan Watersheds with Emphasis on Gold King Mine and Other Mine Waste Issues, Farmington, NM, 20 June 2017.^{PoP}
 26. Liang, J., L. Langbein, and **M. Buenemann**. Establishing a link between output and outcome in policy implementation: opportunistic behavior, performance management, and anticorruption. Public Management Research Conference, Washington, DC, 10 June 2017.^{PaP}
 27. Lopez-Brody, N.^{MS} and **M. Buenemann**. Modeling the impact of woody plants on desert bighorn sheep habitat in the San Andres Mountains, New Mexico, U.S.A. Annual Meeting of the American Association of Geographers, Boston, MA, 8 April 2017.^{PaP}
 28. Mundis, S.^{MS}, Lopez-Brody, N.^{MS}, **M. Buenemann**, and K. Hanley. Spatial distribution of mosquitoes that vector Zika, dengue, and West Nile Virus in New Mexico. Annual Meeting of the American Association of Geographers, Boston, MA, 6 April; 2017.^{PaP}
 29. Lopez-Brody, N.^{MS} and **M. Buenemann**. Modeling the impact of woody plants on desert bighorn sheep habitat in the San Andres Mountains, New Mexico, U.S.A. Annual Meeting of the Southwest Division of the American Association of Geographers, Denton, TX, 21 October 2016.^{PaP}

30. Mundis, S.^{MS}, **M. Buenemann**, K. Hanley, and N. Lopez-Brody^{MS}. Spatial distribution of mosquitoes that vector Zika, dengue, and West Nile virus in New Mexico. Annual Meeting of the Southwest Division of the American Association of Geographers, Denton, TX, 21 October 2016.^{PaP}
31. Dialesandro, J.^{MS} and **M. Buenemann**: Seasonal variations in the relationships between land surface temperature and land cover along an urban-rural gradient. Annual Meeting of the American Association of Geographers, San Francisco, CA, 30 March 2016.^{PaP}
32. Lopez-Brody, N.^{MS}, **M. Buenemann**, and M. Weisenberger: Spatio-temporal dynamics of woody plants and bighorn sheep in the San Andres Mountains, New Mexico, U.S.A., Annual Meeting of the American Association of Geographers, San Francisco, CA, 30 March 2016.^{PaP}
33. Baker, H.^{MS}, **M. Buenemann**, C. van der Waal, and J. Herrick: Relationships between bush cover and soil erosion: an assessment using remote sensing, geographic information system, and crowdsourcing technologies. Annual Meeting of the American Association of Geographers, San Francisco, CA, 29 March 2016.^{PaP}
34. Taraschi, Z.^{US}, J. Dialesandro^{MS}, and **M. Buenemann**: Hot pecans: quantifying the urban heat island effect in the Mesilla Valley, 2014. Annual Meeting of the Southwest Division of the American Association of Geographers, San Antonio, TX, 6 November 2015.^{PaP}
35. Lopez-Brody, N.^{MS} and **M. Buenemann**: Spatio-temporal dynamics of woody plants and desert bighorn sheep in the San Andres Mountains, New Mexico, USA. Annual Meeting of the Southwest Division of the American Association of Geographers, San Antonio, TX, 5 November 2015.^{PaP}
36. Baker, H.^{MS} and **M. Buenemann**: Relationships between bush cover and soil erosion: an assessment using remote sensing, geographic information system, and crowdsourcing technologies. Annual Meeting of the Southwest Division of the American Association of Geographers, San Antonio, TX, 5 November 2015.^{PaP}
37. Sabie, R. P. and **M. Buenemann**: Monitoring surface coal mines in drylands using remote sensing. Annual Spring Meeting of the Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing, Las Cruces, NM, 11 April 2015.^{PaP}
38. Sabie, R. P.^{MS} and **M. Buenemann**: Remote sensing for monitoring surface coal mine reclamation in drylands. Annual Meeting of the Southwest Division of the American Association of Geographers, Albuquerque, NM, 24 October 2014.^{PaP}
39. Throop, H., D. Eldridge, and **M. Buenemann**: Aridity and plant functional type influence soil carbon pools across an Australian aridity gradient.. Annual Meeting of the Ecological Society of America, Sacramento, CA, 10-15 August 2014.^{PaP}
40. Van Arnam, S.^{US} and **M. Buenemann**: Rates and patterns of forest fragmentation in ski resorts: a case study of Eldora Mountain Resort, Colorado, U.S.A.. Annual Meeting of the American Association of Geographers, Tampa, FL, 8-12 April 2014.^{PaP}
41. Colodner, A. G.^{DS}, A. F. Cibils, Dawn VanLeeuwen, **M. Buenemann**, and Timothy: Use of MODIS-derived vegetation green-up parameters to predict reproductive performance of sheep on rangeland. 67th Annual Meeting of the Society for Range Management, Orlando, FL, 11 February 2014.^{PaP}
42. Prileson, V. K.^{MS}, A. F. Cibils, **M. Buenemann**, C. M. Steele, E. J. Schollegardes, D. K. James, R. L. Dunlap, S. H. Cox, W. Taylor, and S. Lopez: Environmental characterization of rangeland pastures in piñon-juniper grassland mosaics in central New Mexico, U.S.A. Annual Meeting of the Society for Range Management, Oklahoma City, OK, 2-8 February 2013.^{PaP}
43. Prileson, V.J.^{MS}, A. F. Cibils, R. H. Peinetti, **M. Buenemann**, C. M. Steele, M. A. Brizuela, M. S. Cid, E. J. Schollegardes, R. L. Dunlap, S. H. Cox, and W. Taylor: Factors affecting seasonal resource selection patterns of young cows grazing piñon-juniper grassland mosaics. Annual Meeting of the Society for Range Management, Oklahoma City, OK, 2-8 February 2013.^{PaP}
44. Colodner, A. G.^{DS}, A. F. Cibils, **M. Buenemann**, and S. H. Cox: Can growing season dynamics

- characterized with weekly MODIS satellite images predict sheep reproductive performance on New Mexico rangelands? Winter Meeting of the New Mexico Section of the Society for Range Management, Las Cruces, NM, 10 January 2013.^{PaP}
45. Prileson, V. K.^{MS}, A. F. Cibils, **M. Buenemann**, C. M. Steele, E. J. Scholleggerdes, D. K. James, R. L. Dunlap, S. H. Cox, W. Taylor, and S. Lopez: Environmental characterization of rangeland pastures in piñon-juniper grassland mosaics in central New Mexico, U.S.A. Annual Meeting of the Southwest Division of the American Association of Geographers, Las Cruces, NM, 26 October 2012.^{PoP}
 46. Richman, R.^{MS}, **M. Buenemann**, and K. Hanley: Spatial analysis of the transmission of sylvatic dengue and chikungunya. Annual Meeting of the Rio Grande Branch of the American Society for Microbiology, Las Cruces, NM, 25 February 2012.^{PoP}
 47. McCarville, D.^{MS}, **M. Buenemann**, M. Bleiweiss, and J. Barsi. Atmospheric correction of Landsat thermal infrared data: a calculator based on North American Regional Reanalysis (NARR) data. Annual Conference of the American Society for Photogrammetry and Remote Sensing, Milwaukee, WI, 3 May 2011.^{PaP}
 48. Hestir, K.^{MS}, and **M. Buenemann**: Remote sensing assessment of land cover change in the Mesilla Valley, New Mexico, 1985-2009. Annual Conference of the American Society for Photogrammetry and Remote Sensing, Milwaukee, WI, 3 May 2011.^{PoP}
 49. Garton, E.^{US}, **M. Buenemann**, and J. Rogan: Applying ecological niche theory to model the spread of the invasive Hemlock wooly adelgid in Massachusetts using Weights of Evidence. Annual Meeting of the American Association of Geographers, Seattle, WA, 13 April 2011.^{PpP}
 50. Pacheco, A.^{US}, **M. Buenemann**, J. Rogan, T. Wright, and A. Klimaszewski-Patterson: Fragmentation of private and public forestland in Massachusetts, USA (1990 and 2009). Annual Meeting of the American Association of Geographers, Seattle, WA, 13 April 2011.^{IIP}
 51. McCarville, D.^{MS}, **M. Buenemann**, M. Bleiweiss, and J. Barsi. Atmospheric correction of Landsat thermal infrared data: a calculator based on North American Regional Reanalysis (NARR) data. Annual Spring Meeting of the Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing, Las Cruces, NM, 2 April 2011.^{PaP}
 52. Pacheco, A.^{US}, **M. Buenemann**, J. Rogan, T. Wright, and A. Klimaszewski-Patterson: Fragmentation of private and public forestland in Massachusetts, USA (1990 and 2009). Annual Spring Meeting of the Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing, Las Cruces, NM, 2 April 2011.^{IIP}
 53. Hestir, K.^{MS}, and **M. Buenemann**: Land cover classification in the Mesilla Valley: an evaluation of remote sensing approaches. Annual Spring Meeting of the Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing, Las Cruces, NM, 2 April 2011.^{IIP}
 54. McCarville, D.^{MS}, **M. Buenemann**, M. Bleiweiss, and J. Barsi. Atmospheric correction of Landsat thermal infrared data: a calculator based on North American Regional Reanalysis (NARR) data. New Mexico State University Graduate Research & Arts Symposium, Las Cruces, NM, 1 March 2011.^{PaP}
 55. Pacheco, A.^{US}, **M. Buenemann**, J. Rogan, T. Wright, and A. Klimaszewski-Patterson: Fragmentation of private and public forestland in Massachusetts, USA (1990 and 2009). New Mexico State University Graduate Research & Arts Symposium, Las Cruces, NM, 1 March 2011.^{PoP}
 56. Hestir, K.^{MS}, and **M. Buenemann**: Land cover classification in the Mesilla Valley: an evaluation of remote sensing approaches. New Mexico State University Graduate Research & Arts Symposium, Las Cruces, NM, 1 March 2011.^{PoP}
 57. Hestir, K.^{MS}, and **M. Buenemann**: Land change in the Mesilla Valley, 1985-2009. Jornada Symposium, Las Cruces, NM, 10 July 2010.^{PaP}

External Grants, Fellowships, and Scholarships

- 2022-2026 Natural Resources Conservation Service, #NR228C30XXXXC004 (PI: Michaela Buenemann). New Mexico Water Access Mapper (NM-WAM). \$252,482.30. 7/1/2022-6/30/2026.
- 2020-2025 National Institutes of Health, 1U01AI151807-01 (PI: Nikos Vasilakis, UTMB). Coordinating Research on Emerging Arboviral Threats Encompassing the Neotropics (CREATE-NEO). Co-I. \$6,657,430. 6/1/2020-5/31/2025.
- 2020-2024 Natural Resources Conservation Service, #NR208C30XXXXC004 (PI: Michaela Buenemann). Monitoring and assessment of mesquite-encroached rangelands. \$200,000.00. 6/17/2020-9/30/2023.
- 2020 New Mexico Association of Conservation Districts (PI: Michaela Buenemann). Acquisition and georeferencing of historical aerial photography of north-central New Mexico. \$51,525. 5/1/2020-9/30/2020.
- 2019-2023 Natural Resources Conservation Service, #NR198C30XXXXC006 (PI: Michaela Buenemann). Integrative geospatial mapping of New Mexico's acequias. \$175,000.00. 8/1/2019-7/31/2023.
- 2019-2020 New Mexico Association of Conservation Districts, #GR0006099 (PI: Donovan Bailey). Assessment of genetic variation associated with differential response to fire among populations of cheatgrass (*Bromus tectorum*). Co-PI. \$70,651.36. 4/1/2019-3/31/2021.
- 2018-2019 National Science Foundation, Major Research Instrumentation, #1828250 (PI: Michaela Buenemann). MRI: Acquisition of an ASD FieldSpec 4 Hi-Res Spectroradiometer at NMSU. \$118,400. 8/1/2018-12/31/2019.
- 2017-2022 Bureau of Land Management, #L17AS000113 (PI: Rani Alexander). BLM New Mexico, resource management planning support for Organ Mountains Desert Peaks and Prehistoric Trackways National Monuments. Co-PI. \$500,000. 8/1/2017-6/30/2022.
- 2016-2020 National Institutes of Health, Grant #1U01AI115577-01 (PI: Nikos Vasilakis). Mechanisms and public health impact of sylvatic dengue virus emergence in Borneo. Senior / Key Personnel. \$3,166,711. 6/15/2016-5/31/2020.
- 2013-2019 United States Agency for International Development (PI: Jeff Herrick). Land-Potential Knowledge System (LandPKS). Collaborator. \$5,000,000. 1/1/2013-12/31/2017.
- 2017-2018 New Mexico Department of Health, Contract #16/665/0300.19657 (PI: Kathryn Hanley). Characterization and control of *Aedes* mosquito vectors in New Mexico SNM DOH. Co-PI. \$180,000. 3/15/2017-12/31/2018.
- 2016 New Mexico Department of Health, Contract # 16/665/0300.19657 (PI: Kathryn Hanley). Mapping the distribution of *Aedes aegypti* mosquitoes in New Mexico. Collaborator. \$90,000. 5/15/2016-12/31/2016.
- 2012-2018 National Science Foundation, Grant DEB-0618210 (PI: Debra Peters): LTER: Long-Term Research at the Jornada Basin (LTER-VI). Collaborator. \$5,880,000.
- 2009-2012 National Science Foundation, Grant DEB-0618210 (PI: Debra Peters; 11/1/2006-10/31/2013): Jornada Basin LTER V: landscape linkages in arid and semiarid ecosystems. Collaborator. \$5,718,307.
- 2008-2012 National Institutes of Health, Grant NIH-R01 1R01AI069145-01A2 (PI: Scott Weaver; 9/22/2008-9/21/2012). Mechanisms of sylvatic dengue emergence. Collaborator. \$1,892,850.

- 2008-2009 National Geospatial Intelligence Agency, Grant HM157608C0006 (PIs: John Wright and Robert Czerniak): Center of excellence for geospatial science. Collaborator. \$1,000,000.
- 2005 Francis E. "Gene" Lortz Memorial Scholarship, Central Region of the American Society for Photogrammetry and Remote Sensing.
- 2000 Oklahoma NASA Space Grant Scholarship.

Internal Grants, Fellowships, and Scholarships

- 2013 College of Arts & Sciences, New Mexico State University, Course Release Award.
- 2011-2012 College of Arts & Sciences, New Mexico State University, MiniGrant: Magnitude and patterns of tree die-off in pinyon-juniper woodlands of the U.S. Southwest: impacts of a global change-type drought. Principal Investigator. \$2,607.
- 2004 GSS Conference and Creative Exhibition Grant, Graduate Student Senate, University of Oklahoma.
- 2004 Robberson Research Grant, Graduate College, University of Oklahoma.
- 2001-2005 Alumni Graduate Fellowship, University of Oklahoma.
- 2000-2005 Graduate Teaching Assistantship, Department of Geography, University of Oklahoma.
- 2000 Ralph and Margaret Olson Geography Scholarship, Department of Geography, University of Oklahoma.
- 1997-1999 Undergraduate Research Assistantship, Department of Geography, Universität-Gesamthochschule Paderborn, Germany.

Pre-Ph.D. Research Experience

- 2004-2005 Project Coordinator, Department of Geography, University of Oklahoma. Project: Design and development of a web-enabled 3D-GIS model of historical sites in Luxor, Egypt.
- 2002 Research Assistant, Department of Geography, University of Oklahoma. Project: Drought Perceptions of West Africans.
- 2000 Research Assistant, Department of Geography, University of Oklahoma. Project: Ground validation of satellite imagery in Oklahoma.
- 1999 Research Intern, German Remote Sensing Data Center, Oberpfaffenhofen, Germany. Projects: Desertification management in Ethiopia (Rift Valley), GIS Aral Sea, Visualization of Remote Sensing Data with 3D-Animations: Virtual Flight across Eastern Westphalia.
- 1997 Intern. AAA Travel Agency, Westerkappeln, Germany.
- 1996-2007 Field work in various settings in Germany, Austria, Norway, Egypt, Nicaragua, Costa Rica, and the United States. Field work included activities such as geomorphological mapping, land evaluation, collection of ground reference data for remote sensing studies, vegetation and soil sampling; and interviews.

Teaching and Advising

Courses Taught

2008-Present, Department of Geography, New Mexico State University

(Typical credit hour load per academic year is 18-20 hours, or 5 courses of which 3-5 have a separate lab section).

Geography of the Natural Environment w/ Lab (GEOG 111G)

Map Use w/ Lab (GEOG 281)

Cartography and GIS w/ Lab, Face-to-Face (GEOG 381/571)

Cartography and GIS w/ Lab, Asynchronously Online (GEOG 381/571)

Field Explorations in Geography, Two-Week Summer Field Trip (GEOG 483/583)

Field Explorations in Geography, Mini-Semester Course (GEOG 483/583)

Field Explorations in Geography, Regular Semester Course (GEOG 483/583)

Southwest Environments (GEOG 455/555)

Introduction to Remote Sensing w/ Lab, Face-To-Face (GEOG 373/571)

Introduction to Remote Sensing w/ Lab, Mixed Synchronously & Asynchronously Online (GEOG 373/571)

Introduction to Remote Sensing w/ Lab, Hybrid (GEOG 373/571)

Advanced Remote Sensing w/ Lab, Face-To-Face (GEOG 473/582)

Advanced Remote Sensing w/ Lab, Mixed Synchronously & Asynchronously Online (GEOG 473/582)

Advanced Remote Sensing w/ Lab, Hybrid (GEOG 473/582)

Geographic Thought and Research Design (GEOG 501)

Geospatial Techniques for Natural Resource Assessment (GEOG 586)

Spectroscopy and Remote Sensing (GEOG 491/598)

Geographic Theory and Application (GEOG 601)

2007-2008, Department of Geography and Regional Development, University of Arizona

Earth's Environment: Introduction to Physical Geography w/ Lab (NATS 101)

Our Diverse Biosphere (GEOG 220)

Field Study in Environmental Geography (GEOG 303)

Environmental and Resource Geography (GEOG 461)

2005-2007, Department of Integrated Science and Technology, James Madison University

Introduction to Physical Geography w/ Lab (GEOG 210)

Introduction to Remote Sensing w/ Lab (GEOG 285)

Advanced Remote Sensing w/ Lab (GEOG 385)

U.S. National Parks (GEOG 450)

The World's Drylands: Land Degradation and Sustainable Development (GEOG 450)

Field Studies (GEOG 315)

Special Studies in Geography (GEOG 490)

International Renewable Energy Perspectives and Applications (ISAT 480, GSCI 104)

International Field Experience in Nicaragua and Costa Rica (various ISAT/GEOG).

2000-2005, Department of Geography, University of Oklahoma

Physical Geography, Lecture & Lab (GEOG 1114)

Graduate Student Committees

Committee Chair

*Anticipated graduation year

- 2026* Md Atikul Hoque, Ph.D., Geography, NMSU. Mapping of *Prosopis glandulosa* (honey mesquite).
- 2026* Md Masudur Rahman, Ph.D., Geography, NMSU. New Mexico Water Access Mapper.
- 2026* Joe Youtz, Ph.D., Geography, NMSU. Pinyon woodlands as thermal refugia for wildlife. Co-advisor with Jennifer Frey.
- 2024* Amber Ransom, M.A.G, Geography, NMSU. Remote sensing and spectroscopy of *Prosopis glandulosa* (honey mesquite).
- 2024* Nicholas Aboagye, M.A.G, Geography, NMSU. Rates, patterns, and drivers of land cover change in the greater Accra region, Ghana.
- 2023* Otis Akraasi, M.A.G, Geography, NMSU. Land cover change and COVID-19 in the Darién Province, Panama.
- 2023* Torit Chakraborty, M.A.G., Geography, NMSU. Deterministic and probabilistic modeling of acequias.
- 2022* Jamie Pirtle, M.A.G., Geography, NMSU. Land cover and ecosystem service changes in acequia communities of northern New Mexico, 1935-2018.
- 2023* Victoria Blumenberg, Ph.D., Water Science and Management, NMSU. Stable isotope analysis to determine the usefulness of surface water as a proxy for precipitation in a semi-arid, mountainous environment.
- 2021 Nathan Lopez-Brody, M.A.G., Geography, NMSU. Species distribution modeling of desert bighorn sheep in the San Andres Mountains, New Mexico, USA: the role of pinyon-juniper cover and other environmental variables.
- 2020 Gertrud "Skye" Aney, M.A.G., Geography, NMSU. Landscape-scale modeling of drought- and insect-related tree mortality.
- 2019 Roberta Paz, M.A.G., Geography, NMSU. Comparison of terrestrial LiDAR and conventional surveys.
- 2017 Stephanie Mundis, M.A.G., Geography, M.S. Biology, NMSU. Monitoring and modeling the distribution of the mosquito vector *Aedes aegypti* in southern New Mexico and west Texas. Co-advised with Kathryn Hanley, NMSU Biology.
- 2017 Holly Baker, M.A.G., Geography, NMSU. Modeling the effects of woody plant removal on soil erosion using mobile crowdsourcing and geospatial data and methods.
- 2016 Robert Sabie, M.A.G., Geography, NMSU. Assessing the effectiveness of remediation surrounding the Black Mesa / Kayenta mines in northern Arizona using remote sensing.
- 2015 Sarah McCord, M.A.G., Geography, NMSU. Integrating remotely sensed imagery and existing multi-scale field data to derive rangeland indicators: an application of Bayesian additive regression trees.
- 2014 Amalia Slaughter, M.A.G., Geography, NMSU. The utility of multispectral imagery from an

- unmanned aircraft system for determining the spatial distribution of *Eragrostis lehmanniana* (Lehmann lovegrass) in rangelands.
- 2014 Josh Baldwin, M.A.G., Geography, NMSU. Landscape changes in the Greater Gila Ecosystem: a geospatial analysis.
- 2013 Rebecca Richman, M.A.G., Geography, and M.S., Biology, NMSU. Spatial and temporal analysis of the mosquito vectors of sylvatic dengue and chikungunya viruses. – Started job as support analyst at ESRI. Co-advised with Kathryn Hanley, NMSU Biology.
- 2011 Bradley Griggs, M.A.G., Geography, NMSU. Urbanization and microclimate in the Middle Rio Grande Conservancy District, New Mexico. – Started a job as a GIS / Remote Sensing Specialist at HydroBio.
- 2011 Kristen Hestir, M.A.G., Geography, NMSU. Land cover classification and change detection in drylands: an evaluation of remote sensing approaches. – Started a job as a GIS / Remote Sensing Scientist at Vista Sciences Corporation.
- 2011 Dennis McCarville, M.A.G., Geography, NMSU. Landsat thermal infrared imagery: new approaches for its atmospheric correction and use for rapid irrigation area assessment. – Entered the Ph.D. program in Civil Engineering at NMSU.

Committee Member

*Anticipated graduation year

- 2024* Rowan Converse, Ph.D., Geography, New Mexico Doctoral Program in Geography (NMDPG – UNM/NMSU). Best practices for automating annual migratory waterfowl surveys at federal wildlife refuges through UAS surveys and machine learning. Major advisor: Chris Lippitt.
- 2024* Sarigai Sarigai, Ph.D., Geography, New Mexico Doctoral Program in Geography (NMDPG – UNM/NMSU). Height estimation from a single remote sensing image. Major advisor: Liping Yang.
- 2024* Blair Mirka, Ph.D., Geography, New Mexico Doctoral Program in Geography (NMDPG – UNM/NMSU). Classification of aquatic macroinvertebrates using fine-scale SfM-based 3D models. Major advisor: Christopher Lippitt.
- 2024* Theodros “Teddy” Woldeyohannes, Ph.D., Geography, New Mexico Doctoral Program in Geography (NMDPG – UNM/NMSU). GIScience for public health issues on tribal lands resulting from exposure to environmental contaminants from mining and trash burning. Major advisor: Yan Lin.
- 2024* Adam Smith, Ph.D., Astronomy, NMSU. Precision predictions of the future relative position of exoplanets. Major advisor: Jason Jackiewicz.
- 2023* John Waller, M.S., Biology, NMSU. Microclimate predictors of roost site selection of *Myotis occultus* in New Mexico. Major advisor: Teri Orr.
- 2023* Paige Harman, M.S., Biology, NMSU. Impacts of anthropogenic factors on mosquito diversity and abundance in Panama. Major advisor: Kathryn Hanley.
- 2023* Trevor Roberts, M.S., Planet, Soil, and Environmental Science, NMSU. Analyzing thinning-lines in US southwestern shrubland with airborne LiDAR data. Major advisor: Niall Hanan.
- 2023* Julia Olson, M.S., Fish, Wildlife, and Conservation Ecology, NMSU. Effects of Mexican wolf recovery on elk behavior and foraging efficiency. Major advisor: James W. Cain.
- 2023* Caleb Burruss, M.S., Plant, Soil, and Environmental Science, NMSU. UAS-based mapping of

- biocrusts. Major advisor: Colby Brungard.
- 2023* Rebecca Penn, Ph.D., Psychology, NMSU. Applied visual search in SAR assignments and forensic/crime scene investigation.. Major advisor: Dominic Simon.
- 2022* Randy Coryell, Ph.D., Biology, NMSU. *Vibrio*-squid-environment interactions in the Philippine archipelago. Major advisor: Michele Nishiguchi.
- 2022* Eduardo Hernandez Acosta, Ph.D., Biology, NMSU. Impacts of variation in microclimate across an urban area on mosquito transmission of dengue and Zika viruses. Major advisor: Kathryn Hanley.
- 2022* Hunter Winsor, Ph.D., Plant, Soil, and Environmental Science, NMSU. Land resource units as soil systems. Major advisor: Colby Brungard.
- 2022* William Peebles, M.S., Plant and Environmental Science, NMSU. UAS, onions, high thrips, and Iris Yellow Spot Virus. Major advisor: Christopher S. Cramer.
- 2022* Ashley Evans, M.S., Fish, Wildlife, and Conservation Ecology, NMSU. Topic TBD. Major advisor: James W. Cain.
- 2022* Joanna Ennis, M.S., Fish, Wildlife, and Conservation Ecology, NMSU. Topic TBD. Major advisor: James W. Cain.
- 2022* Hailey Jacobson, M.S., Fish, Wildlife, and Conservation Ecology, NMSU. Occupancy analysis of the Organ Mountains Colorado chipmunk. Major advisor: Jennifer Frey.
- 2022* Caitlin Ruhl, M.S., Fish, Wildlife, and Conservation Ecology, NMSU. Improving desert bighorn population estimates by applying a hybrid double observer-sightability model to aerial surveys. Major advisor: James W. Cain.
- 2022* Ana G. Colodner, Ph.D., Range Science, NMSU. Modeling livestock productivity and grazing behavior using multitemporal vegetation analyses of short-term remotely sensed imagery in a semiarid rangeland. Major advisor: Andrés Cibils.
- 2022* José Marmolejo, M.S., Geology, NMSU. Remote sensing modeling and spectroscopic analysis of abandoned mines in southern New Mexico. Major advisor: Nancy McMillan.
- 2022 Allyson Ueki, M.S., Anthropology, NMSU. San Miguel de Carnué: Landscape of the First Settlement within the Cañon de Carnué Land Grant. Major advisor: Kelly Jenks.
- 2022 Taylor Hansen, M.S., Range Science, NMSU. Understanding the relationship between phenology, productivity, and monsoon precipitation in the Southwest. Major advisor: Lara Prihodko.
- 2022 Brianna Lind, Ph.D., Plant and Environmental Sciences, NMSU. A multiscale analysis of termite mounds in ecosystems. Major advisor: Niall Hanan.
- 2021 Melakeneh Gedefaw, Ph.D., Water Science and Management, NMSU. Evaluation of rangeland degradation in response to climate change using remote sensing to support New Mexico's food-energy-water systems. Major advisor: Hatim Geli.
- 2021 Rubin Ramrakar, M.S., Biology, NMSU. The application of Angiosperms-353 target enrichment data for the assessment of genetic variation among populations of cheatgrass (*Bromus tectorum*). Major advisor: Donovan Bailey.
- 2021 Dale Frost, M.S., Anthropology, NMSU. Water resources in Cottonwood Springs Pueblo. Major advisor: William Walker.
- 2020 Daniela Vitarelli, M.S., Geology, NMSU. Eruptive volume and explosion energy estimates from Kilbourne Hole maar, southcentral New Mexico. Major advisor: Emily Johnson.
- 2019 Samantha R. Bartnik, M.S., Geology, NMSU. Provenance and sediment dispersal trends from lower-upper Cretaceous nonmarine strata of the Cordilleran Foreland Basin in northern New

- Mexico. Major advisor: Brian A. Hampton.
- 2019 Katherine I Young, Ph.D., Biology, NMSU. Out of the woods: effect of oil palm insertion into forests on the diversity, abundance, and hot utilization of mosquitoes in Sarawak, Malaysian Borneo. Major advisor: Kathryn Hanley.
- 2019 Michelle M. Gavel, M.S., Geology, NMSU. Low-temperature thermochronological constraints on Neogene extension in the Rio Grande Rift and Basin and Range of southern New Mexico. Major advisor: Jeffrey Amato.
- 2019 Alexander Abair, M.S., Biology, NMSU. *History of Leucaena phylogenetics and a de novo transcriptomic approach to resolving diploid relationships*. Major advisor: C. Donovan Bailey.
- 2019 Nicholas J.F. Butterfield, M.S., Geology, NMSU. Geochemical and isotopic relationships between young comendites at Changbaishan Volcano, China. Major advisor: Frank C. Ramos.
- 2018 Joseph Medwid, M.S., Biology, NMSU. Mosquito-environment relationships in Sarawak. Major advisor: Kathryn Hanley.
- 2018 Colby Ryan Howland, M.S., Geology, NMSU. Influence of inherited crust on the Mazatzal Province intrusive rocks: evidence from zircon core ages and ND and HF geochemistry. Major advisor: Jeff Amato.
- 2017 Ian Perkins-Taylor, M.S., Fish, Wildlife, and Conservation Ecology, NMSU. Using occupancy and species distribution models to identify the distribution and key habitat features of the Oscura Mountains chipmunk and guide monitoring efforts. Major advisor: Jennifer Fry.
- 2017 Jacob Buettner, M.S., Geology, NMSU. Geochemical evaluations and ²²⁶RA geochronology of the 946, 1668, and 1903 CE trachytic and latitic pumice deposits from Changbasihan Volcano, China. Major advisor: Frank Ramos.
- 2016 Andrew Meyers, M.S., Fish, Wildlife, and Conservation Ecology, NMSU. Breeding season survival, resource selection, and seasonal use of Conservation Reserve Program and shinnery oak habitat by lesser prairie chickens in eastern New Mexico. Major advisor: Scott Carleton.
- 2015 Steve Walker, M.A.G., Geography, NMSU. Examining aquifer pollution sensitivity in the Central Paso de Norte Region using the DRASTIC model. Major advisor: Christopher P. Brown.
- 2014 Rosie Williams, M.S., Geology, NMSU. Sedimentation and magmatism of Proterozoic rocks in the Redrock area, Burro Mountains, southwest New Mexico: revealing a new Grenville locality in the U.S. Southwest. Major advisor: Jeffrey M. Amato.
- 2014 Ken Peterson, M.S., Water Science and Management, NMSU. Snowmelt runoff predictions for the Big Thompson headwaters under a changed climate. Major advisor: Al Rango.
- 2013 Vanessa J. Prileson, M.S., Range Science, NMSU. Resource selection patterns of cattle grazing a piñon-juniper-grassland mosaic in New Mexico, U.S.A. Major advisor: Andrés Cibils.
- 2012 Tara Nicole Jonell, M.S., Geology, NMSU. Stratigraphy, geochronology, and geochemistry of Eocene-Oligocene volcanic rocks of the Schoolhouse Mountain caldera, Burro Mountains, southwest New Mexico. Major advisor: Jeffrey M. Amato.
- 2012 John C. Gilbert, M.S., Geology, NMSU. Age and provenance of the Glance Conglomerate, Morita Formation, and equivalent strata from U-Pb geochronology, southeastern Arizona and southwestern New Mexico. Major advisor: Timothy F. Lawton.
- 2012 Sean Scott, M.S., Geology, NMSU. Spreading dynamics of an intermediate ridge: insights from uranium series disequilibria, Endeavor segment, Juan de Fuca Ridge. Major advisor: Frank C. Ramos.
- 2011 Jon Williams, M.A.G., Geography, NMSU. The geography of Buddhism as a proxy for spiritual

- awakening in the Four Corners states. Major advisor: John B. Wright.
- 2009 Sam Schmitt, M.P.A., Public Administration, NMSU. Colonias in southern New Mexico. Major advisor: Diane-Michele Prindeville.

Undergraduate Honors Thesis Advising

*Anticipated graduation year

- 2018 Paige Ramsey, B.S., Geography, NMSU. Spatial distribution of conservation easements in the United States: drivers and implications.
- 2015 Shelby Van Arnam, B.S., Geography, NMSU. Rates and patterns of forest fragmentation in ski resorts: a case study of Eldora Mountain Resort, Colorado, U.S.A.

Service

New Mexico State University

Department

- 2020-Present Co-Director, Spatial Applications Research Center (SpARC)
- 2019-Present Graduate Program Director
- 2021-Present Chapter Sponsor, Kappa Xi Chapter of Gamma Theta Upsilon (GTU), the International Geographical Honor Society
- 2011-2019 Webmaster
- 2011-Present Social Media Lead (Facebook, Instagram, LinkedIn, YouTube)
- 2009-Present Member, Awards Committee
- 2009-2018 NMSU Library Liaison
- 2010-2015 Faculty Advisor, Geography Graduate Student Organization
- 2009-2015 Member, Newsletter Committee
- 2008-Present Miscellaneous service (e.g., undergraduate advising)

College

- 2014-2020 Member, College of Arts and Sciences Research Affairs Committee.
- 2018-2019 Member, College of Arts and Sciences Exempt Staff Awards Committee.
- 2011-2014 Member, College of Arts and Sciences Scholarship Committee.

University

- 2022-Present Member, New Mexico State University (NMSU) Data Science Core Working Group
- 2022-Present Member, Unoccupied Aerial Systems (UAS) Research at New Mexico State University (NMSU) Working Group
- 2021-Present Faculty Senator, New Mexico State University (NMSU) Faculty Senate.
- 2009-Present Founder and Faculty Advisor, New Mexico State University Student Chapter of the American Society for Photogrammetry and Remote Sensing.

- 2019 Task Force Chair, General Education Certification of GEOG 111G
- 2018-2020 College of Arts & Sciences Faculty Member Representative, New Mexico State University (NMSU) University Research Council (URC).
- 2016-2017 Mentor (to Jiaqi Liang, Department of Government), Team Mentoring for Faculty Program, Teaching Academy.
- 2011 Team Leader, Teaching Academy, Publish and Flourish Course.

2007-2008, University of Arizona

University

- 2007-2008 Co-Founder and Faculty Advisor, University of Arizona Student Chapter of the American Society for Photogrammetry and Remote Sensing.

2005-2007, James Madison University

Department

- 2005-2006 Member, Environment, Information Systems, and Global Studies Teams.
- 2005-2006 Member, Geospatial Science Task Force.

College

- 2005-2006 Organizer and Contributor, Geographic Science Program Representation in College of Integrated Science and Technology Open House.

2000-2005, University of Oklahoma

Department

- 2003-2005 Member, Association of Geography Graduate Students.
- 2002-2003 Co-Founder and Vice President, Association of Geography Graduate Students.

College

- 2000-2005 Student Representative, College of Geosciences EduTech Advisory Committee.

University

- 2003-2005 Student Representative, Graduate Council.
- 2001-2003 Senator, Graduate Student Senate.

Peer Reviewing

(219 manuscripts, proposals, etc. reviewed since Fall 2008)

Annals of Epidemiology (1)

Annals of the American Association of Geographers (17)

BioMed Research International (1)

Ecosphere (1)

Ecosystems (1)

Freeman / Worth Publishers (1)
 Guilford Publications, Inc. (1)
GIScience and Remote Sensing (1)
Global Ecology and Biogeography (2)
IEEE Access (1)
Infectious Diseases of Poverty (1)
International Journal of Applied Geospatial Research (2)
International Journal of Geographical Information Science (2)
International Journal of Geo-Information (4)
International Journal of Health Geographics (1)
International Journal of Remote Sensing (18)
Journal of Applied Geography (2)
Journal of Applied Ecology (1)
Journal of Arid Environments (1)
Journal of Geography and Regional Planning (1)
Journal of Theoretical Biology (2)
Journal of Vector Ecology (3)
Land (10)
Land Degradation & Development (10)
Medical and Veterinary Entomology (1)
 National Science Foundation, Ad-Hoc (8), Panel (75)
 Oxford University Press (1)
Parasites & Vectors (2)
Photogrammetric Engineering & Remote Sensing (8)
PLOS ONE (2)
PLOS Neglected Tropical Diseases (3)
Remote Sensing (7)
Remote Sensing Letters (4)
Remote Sensing of Environment (12)
Science of the Total Environment (2)
 Springer (2)
Sustainability (7)

Leadership in Professional Organizations

2020-Present	Member, New Mexico Geospatial Advisory Committee, UAS Subcommittee.
2019-2021	Chair of Regional Councilors on the National Council of the American Association of Geographers (AAG).
2018-2021	Regional Councilor on the National Council of the American Association of Geographers (AAG).

- 2020-2021 Chair of the Program Excellence Awards Committee, American Association of Geographers (AAG).
- 2019-2020 Awards Committee Member, Remote Sensing Specialty Group of the American Association of Geographers (RSSG-AAG).
- 2015-2019 Chapter Director and Rocky Mountain Region Liaison, Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC).
- 2018-2019 Past President, Rocky Mountain Region of the American Society for Photogrammetry and Remote Sensing (ASPRS-RMR).
- 2016-2018 President, Rocky Mountain Region of the American Society for Photogrammetry and Remote Sensing (ASPRS-RMR).
- 2017 Past Chair, Southwest Division of the American Association of Geographers (SWAAG).
- 2014-2016 Chair, Southwest Division of the American Association of Geographers (SWAAG).
- 2015-2016 Vice President, Rocky Mountain Region of the American Society for Photogrammetry and Remote Sensing (ASPRS-RMR).
- 2015 Past-President, New Mexico Academy of Science (NMAS).
- 2014-2015 President, Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC).
- 2014 President, New Mexico Academy of Science (NMAS).
- 2014 Secretary, Southwest Division of the American Association of Geographers (SWAAG).
- 2011-2014 Regional Director At-Large, Rocky Mountain Region of the American Society for Photogrammetry and Remote Sensing (ASPRS-RMR).
- 2011-2014 Vice President, Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC).
- 2011-2014 Secretary/Treasurer, Remote Sensing Specialty Group of the American Association of Geographers (RSSG-AAG).
- 2013-2014 President-Elect, New Mexico Academy of Science (NMAS).
- 2013 Treasurer, Southwest Division of the American Association of Geographers (SWAAG).
- 2013 Vice President, New Mexico Academy of Science (NMAS).
- 2011-2012 Member of Nominating Committee, Southwest Division of the American Association of Geographers (SWAAG).
- 2010-2011 Awards Committee Chair, Remote Sensing Specialty Group of the American Association of Geographers (RSSG-AAG).
- 2008-2011 Chapter Director, Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC).
- 2008-2010 Awards Committee Member, Remote Sensing Specialty Group of the American Association of Geographers (RSSG-AAG).

Conference Organization

- 2018 Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC), Annual Spring Meeting, Las Cruces, NM, 7-8 April 2018. Co- Organizer.
- 2017 Rocky Mountain Region of the American Society for Photogrammetry and Remote Sensing (ASPRS-RMR), Annual Meeting, Denver, CO, 3-5 November 2017. Main Organizer.

- 2015 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 16 October 2015. Co-Organizer.
- 2015 Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC), Annual Spring Meeting, Las Cruces, NM, 11 April 2015. Main Organizer.
- 2014 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 17 October 2014. Co-Organizer.
- 2013 New Mexico Academy of Science (NMAS) and New Mexico Experimental Program to Stimulate Competitive Research (NM EPSCoR), Joint Annual Meeting, Albuquerque, NM, 4 November 2013. Co-Organizer.
- 2013 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 11 October 2012. Co-Organizer.
- 2013 Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC), Annual Spring Meeting, Las Cruces, NM, 6 April 2013. Main Organizer.
- 2012 Southwest Division of the American Association of Geographers (SWAAG), Annual Meeting, Las Cruces, NM, 25-27 October 2012. Main Organizer.
- 2012 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 12 October 2012. Co-Organizer.
- 2012 Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC), Annual Spring Meeting, Las Cruces, NM, 7 April 2012. Main Organizer.
- 2011 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 28 October 2011. Co-Organizer.
- 2011 Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC), Annual Spring Meeting, Las Cruces, NM, 2 April 2011. Main Organizer.
- 2010 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 1 October 2010. Co-Organizer.
- 2010 Rio Grande Chapter of the American Society for Photogrammetry and Remote Sensing (ASPRS-RGC), Annual Spring Meeting, Las Cruces, NM, 10 April 2010. Main Organizer.
- 2009 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 2 October 2009. Co-Organizer.
- 2008 Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 10 October 2008. Co-Organizer.

Other Service

- 2021 Panelist, National Science Foundation (NSF), Dynamics of Integrated Socio-Environmental Systems (DISES), Advisory Panel.
- 2019 Panel Session Organizer and Chair, Graduate Program Information Session, Annual Meeting of the Southwest Division of the American Association of Geographers, Fort Worth, TX, 11 October 2019.
- 2019 Panelist, National Science Foundation (NSF), Dynamics of Integrated Socio-Environmental Systems (CNH2), Advisory Panel.
- 2019 Panelist, A New PhD Program for New Mexico, Annual Meeting of the American Association of Geographers, Washington, DC, 3 April 2019.
- 2019 Panelist. Teaching and Advising about Careers in Geography. Annual Meeting of the

- American Association of Geographers, New Orleans, LA, 13 April 2018.
- 2018 Panelist. Teaching and Advising about Careers in Geography. Annual Meeting of the American Association of Geographers, New Orleans, LA, 13 April 2018.
- 2018, 2020 Reviewer, Oak Ridge Associated Universities (ORAU) Ralph E. Powe Junior Faculty Enhancement Award
- 2017-Present Editorial Board Member, *Annals of the American Association of Geographers*, Physical Geography and Environmental Sciences section
- 2016-2018 Panelist, National Science Foundation (NSF), Geography and Spatial Sciences Program (GSS), Advisory Panel.
- 2016-Present Member, American Association of Geographers (AAG) Program Excellence Award Committee.
- 2016-Present Member, American Society for Photogrammetry and Remote Sensing (ASPRS) Region Officers Council.
- 2014-Present Editorial Board Member, *The Southwestern Geographer*.
- 2017 Panel Session Organizer and Chair, GIS&T Careers, Annual Meeting of the Rocky Mountain Region of the American Society for Photogrammetry and Remote Sensing (ASPRS-RMR), Denver, CO, 5 November 2017.
- 2017 Master Scorekeeper, World Geography Bowl, Southwest Division of the American Association of Geographers, Annual Meeting, Huntsville, TX, 26 October 2017.
- 2016 Master Scorekeeper, World Geography Bowl, Southwest Division of the American Association of Geographers, Annual Meeting, Denton, TX, 20 October 2016.
- 2015-2016 Southwest Division Team Organizer, American Association of Geographers World Geography Bowl.
- 2015 Panel Session Organizer and Chair, Toward a sustainable future for geography: building on strengths and opportunities, Southwest Division of the American Association of Geographers, Annual Meeting, San Antonio, TX, 6 November 2015.
- 2015 Organizer, World Geography Bowl, Southwest Division of the American Association of Geographers, Annual Meeting, San Antonio, TX, 5 November 2015.
- 2015 Judge, Undergraduate Student Paper Competition, Southwest Division of the American Association of Geographers, Annual Meeting, San Antonio, TX, 5 November 2015.
- 2015 Judge, Student Poster Competition, Phenology Research and Observations of Southwest Ecosystems Symposium (PROSE), Annual Meeting, Tucson, AZ, 16 October 2015.
- 2015 Scorekeeper, World Geography Bowl, Annual Meeting of the American Association of Geographers, Chicago, IL, 24 April 2015.
- 2015 Panel Session Organizer and Chair, Supporting women in remote sensing and GIS, Annual Meeting of the American Association of Geographers, Chicago, IL, 24 April 2015.
- 2014 Panel Session Discussant, Collaboration and outreach, Annual Meeting of the Southwest Division of the American Association of Geographers, Albuquerque, NM, 24 October 2014.
- 2014 Judge, Remote Sensing Specialty Group Student Paper Competition, Annual Meeting of the American Association of Geographers, Tampa, FL, 8-12 April 2014.
- 2013 Panel Session Discussant, Career development in academic geography, Annual Meeting of the Southwest Division of the American Association of Geographers, Nacogdoches,

- TX, 25 October 2013.
- 2013 Organizer, Graduate and undergraduate student paper and poster competitions, Annual Meeting of the Southwest Division of the American Association of Geographers, Nacogdoches, TX, 25 October 2013.
- 2013 Judge, Remote Sensing Specialty Group Student Illustrated Paper Competition, Annual Meeting of the American Association of Geographers, Los Angeles, CA, 9-13 April 2013.
- 2012 Consultant, Geospatial Applied Research Experts House.
- 2012 Judge, New Mexico State University College of Arts & Sciences 3 Minute Thesis Competition, Las Cruces, NM, 3 March 2012.
- 2012 Judge, Remote Sensing Specialty Group Student Illustrated Paper Competition, Annual Meeting of the American Association of Geographers, New York, NY, 24-28 February 2012.
- 2011 Judge, Conference Student Paper Competition, Annual Meeting of the Southwest Division of the American Association of Geographers, Austin, TX, 10-12 November 2011.
- 2011 Designer and Instructor, Classes on “Metadata” and “Coordinate Systems and Projections”, New Mexico Education Designed to Generate Excellence in the Public Sector (NM EDGE), Roswell, NM, 20 June 2011.
- 2011 Judge, Remote Sensing Specialty Group Student Honors Paper Competition, Annual Meeting of the American Association of Geographers, Seattle, WA, 12-16 April 2011.
- 2010 Representative for Jornada LTER at the Maps and Locals (MALS) Workshop, Fairbanks, AK, 7-10 October 2010.
- 2010 Judge, Phenology Research and Observations of Southwest Ecosystems (PROSE) Annual Symposium, Student Poster Competition, Tucson, AZ, 1 October 2010.
- 2010 Session Chair, Urban Land Use and Planning, Annual Meeting of the American Association of Geographers, Washington, D.C., 16 April 2010.
- 2010 Judge, Remote Sensing Specialty Group Student Honors Paper Competition, Annual Meeting of the American Association of Geographers, Washington, D.C., 14-18 April 2010.
- 2010 Expert Consultant, 2020 Strategic Plan Workshop of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Patancheru, India, 23-25 February 2010.
- 2009-2011 Working Group Member, Committee on Science and Technology Conference, United Nations Convention to Combat Desertification (Includes Working Group Meeting in Bonn, Germany, 2-3 July 2009).
- 2009 Representative for Jornada LTER at the Harvard Forest Scenario Modeling Workshop, Petersham, MA, 1-3 April 2009.
- 2008 Session Chair, Land and Resources in the West, Annual Meeting of the Southwest Division of the American Association of Geographers, San Marcos, TX, 23 October 2008.
- 2008 Judge, Conference Student Paper Competition, Annual Meeting of the Southwest Division of the American Association of Geographers, San Marcos, TX, 23-25 October 2008.
- 2008 Session Chair, Validation and Assessment Issues in Remote Sensing, Annual Meeting of the American Association of Geographers, Boston, MA, 18 April 2008.
- 2008 Discussant, Remote Sensing Applications in Grassland Ecosystems, Annual Meeting of the American Association of Geographers, Boston, MA, 16 April 2008.

- 2004 Session Chair, Forest Dynamics, Annual Meeting of the Southwestern American Association of Geographers, Nacogdoches, TX, 12 November 2004.
- 2004 Presenter and Instructor, GIS Day at the University of Oklahoma.
- 2002 Instructor, Pre-Collegiate Enrichment Program, University of Oklahoma, Norman, OK.
- 2000 Presenter and Instructor, GIS Day at the University of Oklahoma.

Outreach

- 2022-Present Secretary, New Mexico and Doña Ana County Search and Rescue (DAC SAR).
- 2012-Present Member, Organ Mountain Technical Rescue Squad (OMTRS).
- 2011-Present Member, New Mexico and Doña Ana County Search and Rescue (DAC SAR).
- 2011-Present Instructor of one to two land navigation courses per year for various SAR teams [most notably Doña Ana County Search and Rescue (DAC SAR), Organ Mountain Technical Rescue Squad (OMTRS), and New Mexico Mounted Search and Rescue (NMMSAR)], with locations ranging from Las Cruces, NM to Hopewell Lake, NM; statewide trainings are included separately below
- 2019 Guest Presenter, New Mexico Climate Champions Workshop, Asombro Institute for Science Education, 23 July 2019.
- 2014-2019 Mapping Program Chair, Board Member, New Mexico Search and Rescue Council (NMSARC).
- 2018 Instructor, Creating a SAR Training Course, Implementing a SAR Training Course, Mapping Technologies Course, NMSARC Map Program Course, New Mexico Search and Rescue Council (NMSARC) Emergency Services Council Annual Preparedness Event (ESCAPE), Philmont Scout Ranch, NM, 27-29 April 2018.
- 2017 Instructor, Map and Compass Course; Urban Land Navigation with Map, Compass, and GPS Course; Compass and Map Exercise Course; GPS and Map Exercise Course; Wilderness Land Navigation with Map, Compass, and GPS Course, New Mexico Search and Rescue Council (NMSARC) Emergency Services Council Annual Preparedness Event (ESCAPE), Las Cruces, NM, 31 March – 2 April 2017.
- 2016 Instructor, Orienteering Clinic, NMSU Outdoor Recreation Program, Las Cruces, NM, 7 April 2016.
- 2013-2015 Secretary, New Mexico and Doña Ana County Search and Rescue (DAC SAR).
- 2015 Past-President, New Mexico Academy of Science (NMAAS).
- 2015 Instructor, Map and Compass Course, GIS for Search and Rescue Course, Land Navigation with Map, Compass, and GIS Course, New Mexico Search and Rescue Council (NMSARC) Emergency Services Council Annual Preparedness Event (ESCAPE), Ruidoso, NM, 17-19 May 2015.
- 2014 Instructor, Land Navigation Training, New Mexico Search and Rescue (NMSAR), San Acacia, NM, Mission #14-00-02, 8-9 November 2014.
- 2014 Co-Organizer / Co-Instructor (with ESRI and NAPSG), MapSAR Training, New Mexico Search and Rescue (NMSAR), Las Cruces, NM, 17-19 January 2014.
- 2014 President, New Mexico Academy of Science (NMAAS).

- 2013 President-Elect, New Mexico Academy of Science (NMAS).
- 2013 Instructor, Map and Compass Course, New Mexico Search and Rescue Council (NMSARC) Emergency Services Council Annual Preparedness Event (ESCAPE), Ruidoso, NM, 10 May 2013.
- 2012-2013 Vice President, New Mexico Academy of Science (NMAS).
- 2011 Invited Visitor, Summer Multicultural Access to Research Training (SMART) Program, University of Colorado, Boulder, CO, November 2011.
- 2011 Judge, NMSU Graduate Research & Arts Symposium (GRAS), Las Cruces, NM, 1 March 2011.
- 2010 Judge, NMSU Graduate Research & Arts Symposium (GRAS), Las Cruces, NM, 2 March 2010.
- 2010 Judge, New Mexico Mesa Winter Design Competition, 20 January 2010.

Honors and Awards

- 2008-Present Distinguished Member (2008-2009, 2015-2016), Sustaining Member (2010-2012, 2019-2020), Member (2012-2018), Teaching Academy, New Mexico State University.
- 2018 Participant, Online Course Improvement Program (OCIP), New Mexico State University. Received NMSU Quality Matters approval for GEOG 381/571 Cartography and GIS.
- 2016 Nominee, NMSU Provost's Award for Excellence in Academic Advising.
- 2014-2015 Participant, NMSU ADVANCE Advancing Leaders Program.
- 2013 Course Release Award, College of Arts & Sciences, New Mexico State University.
- 2011 Ford Bartlett Award, American Society for Photogrammetry and Remote Sensing.
- 2009 Best Poster Award, New Mexico State University Research Council Fair.
- 2005 University of Oklahoma Outstanding Graduate Teaching Assistant Award, University of Oklahoma.
- 2005 Francis E. "Gene" Lortz Memorial Scholarship, Central Region of the American Society for Photogrammetry and Remote Sensing.
- 2004 John M. Caldwell Award for Excellence in Graduate Student Teaching, Department of Geography, University of Oklahoma.
- 2004 First Place, Student Paper Competition, Annual Meeting of the Southwestern American Association of Geographers.
- 1999-2000 Exchange Student from the Universität-Gesamthochschule Paderborn, Germany at the University of Oklahoma.

Professional Affiliations

- 2019-Present American Geophysical Union (AGU)
- 2015-Present Quivira Coalition.

2013-Present National Council for Geographic Education (NCGE).
2012-Present New Mexico Academy of Science (NMAS).
2012-Present New Mexico Geographic Information Council (NMGIC).
2007-Present Ecological Society of America (ESA).
2007-Present Society for Range Management (SRM).
2004-Present Verband der Geographen an Deutschen Hochschulen (VGDH).
2004-Present American Society for Photogrammetry and Remote Sensing (ASPRS).
2001-Present Gamma Theta Upsilon (GTU), Geographical Honors Society.
2000-Present American Association of Geographers (AAG).

Computer Skills

Geographic Information Science and Technology: ENVI, ERDAS Imagine, ArcGIS, IDRISI, ArcGIS Online, ArcGIS Explorer Online, ArcGIS Explorer Desktop, Google Earth, FRAGSTATS, etc.

Statistics: JMP, Excel, SAS, SPSS

Programming/Scripting: Python, R

Web Design: Dreamweaver, Microsoft Expression, Weebly

Learning Management Systems: BlackBoard, Canvas, Desire2Learn, WebCT

Operating Systems: Microsoft Windows, Mac OS, UNIX/Linux

Language Skills

German: reading, writing, speaking fluent

English: reading, writing, speaking fluent

French: reading, writing, speaking functional

Spanish: reading, writing, speaking functional

Italian: reading, writing, speaking basic

Certifications

Physalia “Species Distribution and Ecological Niche Modeling in R” (2021)

Federal Aviation Administration (FAA) Remote Pilot Certificate (since 2019)

New Mexico State University Online Course Improvement Program (OCIP) (2018)

Analytical Spectral Devices, Inc. (ASD) Chemometrics (2018)

Search and Rescue-Related Certifications: FEMA ISC 100 (2011), FEMA ICS 200 (2011), FEMA 700 (2011), NMSAR Field Certification (2011), NMSAR Team Leader (2012), NMSAR Field Certification Evaluator (2014), Intro to SAR Management (2015), Lost Person Behavior (2016), NIMS Incident Command System Type-III SAR Planning Section Chief (2019), NMSAR Task Force Leader (2021), Wilderness First Aid (2022), Emergency Responder CPR / AED / First Aid (2022)