

# Ruopu Li

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Google Scholar@ <https://scholar.google.com/citations?user=arMExhwAAAAJ&hl=en&oi=ao>

## EDUCATION

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- 2007-2012**     **Ph.D.** in Natural Resource Sciences, University of Nebraska-Lincoln, Lincoln, NE  
Specialty: GIS; Advisers: late Profs. James W. Merchant & Xun-Hong Chen
- 2004-2007**     **M.E.** in Environmental Science, Tianjin University, Tianjin, China
- 2000-2004**     **B.S.** in Environmental Science, Nankai University, Tianjin, China

## WORK EXPERIENCE

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- Jul 2021-Present**     *Graduate Program Director and EGIS Lab Director*, Geography and Environmental Resources, School of Earth Systems and Sustainability, Southern Illinois University Carbondale (SIUC), Carbondale, IL
- Jul 2020- Present**     *Associate Professor*, Geography and Environmental Resources, School of Earth Systems and Sustainability, SIUC, Carbondale, IL
- Aug 2015-Jun 2020**     *Assistant Professor*, Department of Geography and Environmental Resources, SIUC, Carbondale, IL
- Nov 2013-Aug 2015**     *Integrated Water Management Analyst*, Nebraska Department of Natural Resources (NeDNR), Lincoln, NE
- Jun 2012-present**     *Adjunct Assistant Professor*, School of Natural Resources (SNR), University of Nebraska-Lincoln (UNL), Lincoln, NE
- Feb 2012-Nov 2013**     *Integrated Water Management Specialist*, NeDNR, Lincoln, NE
- May 2011-Dec 2011**     *Graduate Research Assistant*, the National Drought Mitigation Center, UNL, Lincoln, NE
- Jan-May 2011**     *Graduate Teaching Assistant*, SNR, UNL, Lincoln, NE
- Aug 2007- Dec 2010**     *Graduate Research Assistant*, SNR, UNL, Lincoln, NE

## TEACHING/RESEARCH INTERESTS

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- Interests**     Geospatial analysis & remote sensing, Water resource planning & management, Smart Society and Communities, Energy geography, Nature-Human Interactions, Land use modeling, Social media analytics, Multispectral UAVs (drones)
- Software**     ArcGIS, MODFLOW, Python, R, C, QGIS, MATLAB, SPSS, ENVI, eCognition, Metashape, Pix4D, Nvivo

## PUBLICATIONS (+ student advisee, \* corresponding author)

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### In Review

1. Bista, A.<sup>+</sup>, R. Li<sup>\*</sup>, S.Y. Samadi, B. Flyr, J. Schoof. Understanding the Spatiotemporal Variation of Groundwater Level Dynamics Using Data Mining Approaches. *JAWRA Journal of American Water Resources Association*.

### Book

1. Li, R. and A. Monti (Eds.). 2018. Land Allocation for Biomass Crops: Challenges and Opportunities with Changing Land Use, *Springer*. ISBN: 978-3-319-74535-0.

### Book Chapter and Other Publications

1. Crowe, J., R. Li. 2021. Achieving Energy Justice: When Historic Environmental Contamination Intertwines with Renewable Energy Development. Toxic News. Accessed on at <https://toxicnews.org/2021/04/30/achieving-energy-justice-when-historic-environmental-contamination-intertwines-with-renewable-energy-development/>
2. Li, R., K. Chen, D. Wu. 2021. Challenges and Opportunities to Cope with Smart Divide in Rural America. In *Smart Spaces and Places* (L. Bian, ed), Routledge, ISBN: 978-0-367-70354-7
3. Li, R. 2016. Assessing Groundwater Pollution Risks in Response to Climate Change and Variability. Chapter 2, pp. 31-50. In *Emerging Issues in Groundwater Resources* (A. Fares, ed.), *Springer*. ISBN: 978-3-319-32006-9.
4. Li, R., K. Holtsclaw, M. Brown, B. Polk. 2017. Shawnee National Forest Equestrian and Hiking Trail Map (West Side). Published by *the Friends of Shawnee National Forest* (1,000 copies).

### Referred Articles

1. Talafha, S, D. Wu, B. Rekabdar, R. Li, G. Wang. 2021. Classification and Feature Extraction for Hydraulic Structures Data Using Advanced CNN Architectures. International Conference on Transdisciplinary AI (TransAI) 2021 (accepted).
2. Madany, P., C. Xia, L. Bhattacharjee, N. Khan, R. Li, J. Liu. 2021. Antibacterial activity of  $\gamma\text{Fe}_2\text{O}_3/\text{TiO}_2$  nanoparticles on toxic cyanobacteria from a lake in Southern Illinois. *Water Environment Research* (in press).
3. Bhadra, S.<sup>+</sup>, R. Li<sup>\*</sup>, D. Wu, G. Wang, B. Rekabdar. 2021. Assessing the Roles of Anthropogenic Drainage Structures on Hydrologic Connectivity Using High-resolution Digital Elevation Models. *Transactions in GIS*. <https://doi.org/10.1111/tgis.12832>.
4. Li, R.<sup>\*</sup>, M.M. Rahaman, L. Zhao, Z. Tang. 2021. Assessing Social Media Communication of Local Governments in Fast-growing U.S. Cities. *The Professional Geographers*. <https://doi.org/10.1080/00330124.2021.1933547>.

5. Alam, S., M. Gebremichael, R. Li, J. Dozier, D. Lettenmaier. 2020. Can Managed Aquifer Recharge Mitigate the Groundwater Overdraft in California's Central Valley? *Water Resources Research* 56(8), e2020WR027244.
6. Li, R.\*, K. Chen, D. Wu<sup>+</sup>. 2020. Challenges and Opportunities to Cope with Smart Divide in Rural America. *Annals of the American Association of Geographers* 110(2), 559-570.
7. Crowe, J., R. Li\*. 2020. Is the Just Transition Socially Accepted? Energy History, Place, and Support for Coal and Solar in Illinois, Texas, and Vermont. *Energy Research & Social Science* 59, 101309. (IF: 5.5)
8. Li, R.\*, D. Crowe, D. Leifer<sup>+</sup>, L. Zou, J. Schoof. 2019. Beyond Big Data: Social Media Challenges and Opportunities for Understanding Social Perception of Energy. *Energy Research & Social Science* 56, 101217.
9. Alam, S. <sup>+</sup>, M. Gebremichael, R. Li\*. 2019. Remote Sensing-Based Assessment of the Crop, Energy and Water Nexus in the Central Valley, California. *Remote Sensing* 11(14), 1701
10. Wu, D.<sup>+</sup>, R. Li\*, F. Zhang, J. Liu. 2019. A Review on Drones-based Harmful Algae Blooms Monitoring. *Environmental Monitoring and Assessment* 191:211. 10.1007/s10661-019-7365-8.
11. Alam, S. <sup>+</sup>, M. Gebremichael, R. Li, J. Dozier, D. Lettenmaier. 2019, Climate Change Impacts on Future Groundwater Storage in Central Valley, California. *Climatic Change* 157 (3-4), 387-406.
12. Wang, Q., H. Sun, R. Li, G. Wang. 2019. A Stochastic Geostatistical Algorithm for Image Classification: Feature-Space Indicator Simulation. *ISPRS Journal of Photogrammetry and Remote Sensing* 152, 145–165.
13. Yan, X. W. Dong, R. Li, L. Cui, G. Zhu. 2019. Assessment and Validation of Confined Aquifer Vulnerability based on VEBHAT Method: A Case Study in Heilongjiang Province of Northeastern China. *Hydrogeology Journal* 27(7), 2551–2561.
14. Yu, H., R. Li, G. Wang, Q Wang. 2019. Current Development of Landscape Geochemistry with Support of Geospatial Technologies: A Review. *Critical Reviews in Environmental Science and Technology* 49(9): 745-790.
15. Rahaman, M.M., B. Thakur, A. Kalra, R. Li, P. Maheshwari. 2019. Estimating High-Resolution Groundwater Storage from GRACE: A Random Forest Approach. *Environments* 6 (6), 63.
16. Yu, H., X. Liu, B. Kong, R. Li, G. Wang. 2019. Landscape Ecology Development Supported by Geospatial Technologies: A Review. *Ecological Informatics* 51, 185–192.
17. Zhang, Z., H. Hu, D. Yin, S. Kashem, R. Li, H. Cai, D. Perkins, S. Wang. 2019. A CyberGIS-enabled Multi-Criteria Spatial Decision Support System: A Case Study on Flood Emergency Management. *International Journal of Digital Earth* 12(11): 1364-1381.
18. Li, R., G. Ou, M. Pun, L. Larson. 2018. Evaluation of Groundwater Resources in Response to Agricultural Management Scenarios in the Central Valley, California. *Journal of Water Resources Planning and Management* 144(12), 10.1061/(ASCE)WR.1943-5452.0001014.

19. Li, R.\* J. Chen<sup>+</sup>. 2018. Planning the Next-Generation Biofuel Crops Based on Soil-Water Constraints. *Biomass and Bioenergy* 115, 19–26.
20. Rijal, S., G. Wang, P.B. Woodford, H.R. Howard, J.M.S. Hutchinson, S. Hutchinson, J. Schoof, T. Oyana, R. Li, L.O. Park. 2018. Detection of Gullies in Fort Riley Military Installation Using LiDAR Derived High Resolution DEM. *Journal of Terramechanics* 77, 15–22.
21. Li, R.\* and K. Holtsclaw<sup>+</sup>. 2017. Geocoding Locations of Historic Reclamation Research Sites Using Google Earth. *Journal of the American Society of Mining and Reclamation* 6(2), 84–92.
22. Xiang, J.<sup>+</sup>, R. Li\*<sup>+</sup>, G. Wang, Q. Wang, G. Qie, L. Xu, M. Zhang, and M. Tang. 2017. Modeling Urban PM<sub>2.5</sub> Concentration by Combining Regression Modeling and Spectral Unmixing Analysis in a Region of Eastern China. *Water, Air, & Soil Pollution* 228, 250.
23. Wang, T., T.E. Franz, R. Li, J. You, M. Shulski, C. Ray. 2017. Analysis of Effects of Climate and Soil on Regional Soil Moisture Spatial Variability Using EOFs in a Semiarid Region. *Water Resources Research* 53 (4), 4022–4035.
24. Pun, M. D. Mutiibwa, R. Li. 2017. Land Use Classification: A Surface Energy Balance and Vegetation Index Application to Map and Monitor Irrigated Lands. *Remote Sensing* 9(12), 1256.
25. Kang, J., L. Zhao, R. Li, H. Mo, and Y. Li. 2017. Groundwater Vulnerability Assessment based on Modified DRASTIC Model: A Case Study in Changli County, China. *GeoCarto International* 32(7), 749–758.
26. Wang, T., Q. Liu, T.E. Franz, R. Li, T. Lang and C.A. Fiebrich, 2017. Spatial Patterns of Soil Moisture from Two Regional Monitoring Networks in the United States. *Journal of Hydrology* 552, 578–585.
27. Rijal, S., G. Wang, P. Woodford, H. Howard, J. Schoof, T. Oyana, L. Park, R. Li. 2017. Comparison of Military and Non-military Land Condition Using an Image Derived Soil Erosion Cover Factor. *Journal of Soil and Water Conservation* 72(5), 425–437.
28. Li, R.\*<sup>+</sup>, M. Pun, J. Bradley, G. Ou, J. Schneider, B. Flyr, and S. Chinta. 2016. Evaluating Hydrologically Connected Surface Water and Groundwater Using a Groundwater Model. *JAWRA Journal of the American Water Resources Association* 52(3), 799–805.
29. Ou, G., R. Li\*<sup>+</sup>, M. Pun, C. Osborn, J. Bradley, J. Schneider, and X. Chen. 2016. A MODFLOW Package to Linearize Stream Depletion Analysis. *Journal of Hydrology* 532, 9–15.
30. Li, R.\*<sup>+</sup>, M. Pun, and D. Mutiibwa. 2016. Classification of Irrigated and Non-Irrigated Cropland Using Object-based Image Analysis: A Case Study in South-Central Nebraska. *Proceeding of 2016 Fifth International Conference on Agro-Geoinformatics* doi: 10.1109/Agro-Geoinformatics.2016.7577619.
31. Tang, Z., Y. Li, Y. Gu, W. Jiang, Y. Xue, T. LaGrange, A. Bishop, J. Drahota, R. Li. 2016. Assessing Nebraska Playa Wetland Inundation Status during 1985-2015 Using the Landsat Data and Google Earth Engine. *Environmental Monitoring and Assessment* 188, 654.

32. Li, R.\*, J. Merchant and X. Chen. 2014. A Geospatial Approach for Assessing Groundwater Vulnerability to Nitrate Contamination in Agricultural Settings. *Water, Air, & Soil Pollution* 225(12), 2214.
33. Miller, A. <sup>†</sup> and R. Li\*. 2014. A Geospatial Approach for Prioritizing Wind Farm Development in Northeast Nebraska, USA. *ISPRS International Journal of Geo-Information* 3(3), 968–979.
34. Tang, Z., R. Li, X. Li, W. Jiang, and A. Hirsh. 2014. Capturing LiDAR-Derived Hydrologic Spatial Parameters to Evaluate Playa Wetlands. *JAWRA Journal of the American Water Resources Association* 50 (1): 234–245.
35. Feng, S., Q. Hu, W. Huang, C. Ho, R. Li, and Z. Tang. 2014. Projected Climate Regimes Shift under Future Global Warming from Multi-model, Multi-scenarios CMIP5 simulations. *Global and Planetary Change* 112, 41–52.
36. Li, R., Z. Tang and X. Li. 2013. Drainage Structure Dataset and its Effects on LiDAR-derived Surface Flow Modeling. *ISPRS International Journal of Geo-Information* 2(4), 1136-1152.
37. Li, R., N. di Virgilio, Q. Guan, S Feng, and G.M. Richter, 2013. Reviewing Models of Land Availability and Dynamics for Biofuel Crops in the United States and European Union. *Biofuels, Bioproducts and Biorefining* 7(6), 666–684.
38. Li, R.\* and J. Merchant. 2013. Modeling Vulnerability of Groundwater to Pollution under Future Scenarios of Climate Change and Biofuels-related Land Use Change: A Case Study in North Dakota, USA. *Science of the Total Environment* 447, 32–45.
39. Li, R., Q. Guan, and J. Merchant. 2012. A Geospatial Modeling Framework for Assessing Biofuels-related Land-use and Land-cover Change. *Agriculture, Ecosystems & Environment* 161, 17–26.
40. Tang, Z., X. Li, N. Zhao, R. Li, and E. F. Harvey. 2012. Developing a Restorable Wetland Index for Rainwater Basin Wetlands in South-Central Nebraska: A Multi-criteria Spatial Analysis. *Wetlands* 32(5), 975–984.
41. Li, R., S. Liu, Q. Guan, and Y. Peng. 2011. Post-disaster Assessment of Northeastern Coastal Region for the 2011 Sendai Earthquake and Tsunami. *Proceeding of 2011 International Symposium on Water Resource and Environmental Protection (ISWREP)* vol.3, pp.2429–2432.
42. Tang, Z., S.D. Brody, R. Li, C. Quinn, and N. Zhao, 2011, Examining Locally-Driven Climate Change Policy Efforts In Three Pacific States, *Ocean & Coastal Management* 54: 415–426.
43. Li, R., L. Zhao, H. Tonya, and Z. Tang. 2010. Monitoring Watershed Drought Conditions through the Landsat Imagery Interpretation. *Disaster Advances* 3(4): 40–46.
44. Ojekunle, O. Z., L. Zhao, R. Li, X. Tan, W. Lv, and H. Bangura, 2009. Ameliorating Water Crises through Sustainable Wastewater Reuse in Hengshui, China, *Journal of American Water Works Association* 10 (101): 71–81.
45. Li, R., L. Zhao, X. Tan, W. Lv, and O.Z. Ojekunle, 2007. Sustainable Wastewater Reuse to Face Water Crisis — A Case Study in Taocheng District of Hengshui, China. *Proceedings of the World Environmental and Water Resources Congress 2007*, pp. 1–10.

46. Li, R., L. Zhao, T. Li, T. Dong, Z. Yang. 2006. Discussion on the Allocation of the Ecological Water Use Based on the Ecological Water Demand, *Ecological Economy* 10: 50–53 (in Chinese).

## RESEARCH GRANTS

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### Grants Received or Completed

**PI**, \$278,812, EAGER: SAI: Bridging the Smart Divide in Rural America by Understanding the Interplay of ICTs and Social Infrastructures. 09/01/2021-8/31/2023, Co-PI: J. Crowe, K. Chen, awarded by *National Science Foundation* (Strengthening American Infrastructure program).

**PI**, \$5,000. Preparing for 2024 Total Solar Eclipse: A Social Sensing Approach for Understanding Human Mobility in Southern Illinois, 01/01/2021-12/31/2021, *SIU Foundation Board Research Award*.

**Co-PI**, \$24,991, HAB Early Mitigation by Magnetic Photocatalysts. 12/01/2020-11/30/2021, PI: J. Liu, awarded by *U.S. Environmental Protection Agency*.

**Co-PI**, \$142,253, Using Multispectral Platforms to Manage Soybean Cyst Nematode. 10/01/2020-9/30/2022, PI: J. Bond, awarded by *Illinois Soybean Association*.

**PI**, \$170,718, Enhancing High-resolution Terrain Data Model for Improving the Delineation of Multi-scale Hydrological Connectivity. 06/01/2020-11/30/2022, Co-PI: B. Rekabdar, G. Wang, awarded by *National Science Foundation* (Human-Environment and Geographical Sciences program).

**PI**, \$145,900, Characterization of Groundwater Recharge Dynamics in the Unsaturated Zone Using Hydrologic Models in the Central Platte River Basin. 06/01/2018-08/31/2020, Co-PI: G. Ou, awarded by *Central Platte Natural Resources District*.

**PI**, \$40,527, *Social Media Footprints of Public Perception on Energy Issues and Their Policy Implications*, 07/01/2017-06/30/2018, Co-PI: Justin Schoof, An Energy Boost Seed Grant awarded by *SIU Advanced Coal and Energy Research Center*.

**PI**, \$3,700, *Developing a Digital Trail Map for Public Access in Southern Illinois*, 04/28/2017-04/22/2018, awarded by *SIU Green Fund*.

**PI**, \$68,871, *Developing IT Applications to Assist in Communicating Hydrogeologic Information for Public Engagement*, 05/01/2016-06/30/2018, awarded by *Nebraska Department of Natural Resources*.

**PI**, \$2,569, *Designing a Trail Map of the West Side of the Shawnee National Forest*, 11/01/2016-05/30/2017, awarded by *Friends of the Shawnee National Forest*.

**PI**, \$9,856, *Geocoding Locations of Historic Reclamation Research Sites using Google Earth*, 02/22/2016-02/28/2018, awarded by *American Society of Mining Reclamation*.

**PI**, \$25,000, *Evaluation of Water Resources in Response to Management Scenarios in the Central Valley, California*, 05/01/2015-07/31/2015, awarded by *Natural Resources Defense Council*.

**Co-PI**, \$153,606, *Develop a Climate-Wetland Vulnerability Assessment Model to Evaluate Playa Wetland Response to Climate Variability*, 01/01/2015-12/31/2016, PI: Z. Tang, awarded by *U.S. Environmental Protection Agency*.

### Student Research Training Grants (Advising PI)

\$14,820. *A Socio-hydrological Framework for Assessing Groundwater Sustainability in an Irrigated Agricultural Landscape*, 09/01/2021-12/31/2023, Student PI: A. Naliaka. awarded by the *North Central Region Sustainable Agriculture Research and Education (NCR-SARE) Program*.

\$3,200, Undergraduate Research-Enriched Academic Challenge (REACH) award, 08/2021-04/2022. Student Recipient: C. Talbert, awarded by Office of the Vice Chancellor for Research, SIU.

\$3,450, Undergraduate REACH award, 08/2019-04/2020. Student Recipient: P. Luis, awarded by Office of the Vice Chancellor for Research, SIU.

\$9,982, *Characterization of Harmful Algal Blooms Using Small Unmanned Aircraft Systems and Watershed Analysis in Southern Illinois*, 03/01/2018-08/28/2019, Student PI: D. Wu, awarded by *Illinois Water Resources Center*.

### **TEACHING EXPERIENCE** (at the SIUC and UNL)

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Spring/Fall, 2015-2021 **Instructor**, GEOG 401/502 Geographic Information Systems, SIUC  
Fall, 2015-2020 **Instructor**, GEOG 420/520 Advanced GIS Studies, SIUC  
Spring, 2016-2021 **Instructor**, GEOG 417/517 GIS Programming (Python), SIUC  
Spring, 2016-2020 **Instructor**, GEOG 501 Geography & Env Research Seminar, SIUC  
Spring, 2013-2015 **Instructor**, GEOG 422/822 Advanced Techniques in GIS, UNL  
Fall, 2014-2015 **Instructor**, GEOG 996 Non-thesis Research, UNL  
Fall, 2013-2014 **Instructor**, GEOG 412/812 Introduction to GIS, UNL  
Spring, 2011 **Teaching Assistant**, NRES 312 Geospatial Info. Systems, UNL

### **HONORS AND AWARDS**

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2019 **Travel Award** for CUAHHSI Conference on Hydroinformatics  
2019-now **Fellow**, Illinois Water Resources Center  
2019 **Travel Award** for National Water Center Summer Institute  
2017 **Visiting Fellow** for UCGIS CyberGIS Summer School  
2015-2017 **SIU Faculty Startup Award** (\$20,800)  
2010-2011 **Preparing Future Faculty Fellow**, UNL  
2010 **Travel Award** (\$500), AAG Spatial Analysis and Modeling Specialty Group  
2009 **Larrick and Whitmore Travel Award** (\$500), SNR, UNL  
2007-2010 **Othmer Fellowship** (\$7,500/year), UNL  
2007-2010 **School of Natural Resources Scholarship** (\$18,000/year), UNL

## CONFERENCE PRESENTATIONS

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1. Li, R., Y. Hu, G. Ou, C. Quinn. 2021. Groundwater Sustainability in Irrigation Landscapes: An Interdisciplinary Socio-Ecological System Research Agenda. UCOWR/NIWR Annual Water Resources Conference, Jun 8-9, 2021, Virtual.
2. Li, R., K. Chen. 2021. Smart Rural Development: Challenges and Opportunities to Cope with Smart Divide in Rural America. AAG Annual Meeting, April 7-11, 2021, Virtual.
3. Li, R., D. Wu, S. Bhadra, B. Rekadbar, G. Wang, 2020. Enhancing Drainage Delineation Using High-resolution Terrain Data Model and Geospatial Artificial Intelligence. AGU Fall Meeting 2020.
4. Li, R., W. Xiong, 2019. Development of IT Animations for Engaging Citizens with Hydrogeology Knowledge. 2019 CUAHSI Conference on Hydroinformatics, July 29-31, 2019. Provo, UT.
5. Li, R., M.M. Rahaman. 2019. Assessing Social Media Communications of Local Governments in Top Fast-growing U.S. Cities. AAG Annual Meeting, April 3-7, 2019, Washington D.C.
6. Li, R., D. Wu, J. Liu. 2019. Drone-based Water Quality Monitoring for Harmful Algae Blooms: A Review. 34th Annual ILMA-Lakes Conference, Mar 14-16, 2019. Crystal Lake, IL.
7. Alam, S., M. Gebremichael, R. Li, D.P. Lettenmaier, J. Dozier. 2018. Potential Impact of Climate Change on Groundwater storage in Central Valley, California. AGU Fall Meeting, Dec 10-14, 2018, Washington D.C.
8. Leifer, D. and R. Li. 2018. WebGIS Application for Visualizing Historical Reclamation Research Sites Using a Modified QGIS2Web Framework. 2018 American Society of Mining & Reclamation Conference, June 4-7, 2018, St. Louis, MO.
9. Li, R.. 2018. Understanding of Public Perception on Energy Issues Using Twitter Data Mining. AAG Annual Meeting, April 10-14, 2018, New Orleans, LA.
10. Li, R. and W. Xiong. 2017. Development of Computer Animation to Communicate Hydrogeologic Information for Public Engagement. 2017 AAG West Lake Meeting, Oct 26-28, 2017, West Plain, MO.
11. Li, R. 2017. Geocoding Locations of Historic Reclamation Research Sites using Google Earth. 2017 American Society of Mining & Reclamation Joint Conference, April 10-12, 2017, Morgantown, WV.
12. Huang, T. and R. Li. 2017. Ecological Wisdom in Marginal Agriculture Design. The Tonji-XAUAT Forum on Ecological Wisdom Inspired Urban and Rural Ecological Practice, July 6-9, 2017. Xi'an, China.
13. Li, R. and T. Huang. 2017. Enhancing the Resilience of Marginal Agricultural System: A Food-Energy-Environment Nexus Perspective. Association of American Geographers (AAG) Annual Meeting, April 5-9, 2017, Boston, MA.



14. Li, R., M. Pun, D. Mutiibwa, 2016. Classification of Irrigated and Non-Irrigated Cropland Using Object-based Image Analysis: A Case Study in South-Central Nebraska. 5<sup>th</sup> International Conference on Agro-Geoinformatics, July 18-20, 2016, Tianjin, China.
15. Li, R., M. Pun, L. Larson. 2016. Groundwater Sustainability in Response to Agricultural Management Scenarios in the Central Valley, California, AAG Annual Meeting, March 29 - April 2, 2016, San Francisco, CA.
16. Li, R., M. Pun, D. Mutiibwa, 2015. Classification of Irrigated and Non-Irrigated Land Using Remote Sensing Techniques: A Case Study in Nebraska. National Ground Water Association (NGWA) Conference on the Upper Great Plains, Sept 22-23, 2015, Cheyenne, WY.
17. Mutiibwa, D., M Pun, R. Li. 2015. Land Use Classification: A Surface Energy Balance and Vegetation Index Application to Map Irrigation in Nebraska. International Workshop on Evapotranspiration Mapping for Water Security, Sept 15-17, Washington D.C.
18. Li, R., J. Chen, Z. Tang. 2015. Planning the Next-Generation Biofuel Crops in the U.S. Corn Belt: A Land Suitability Analysis, AAG Annual Meeting, April 20-25, 2015, Chicago, IL.
19. Chen, J., R. Li. 2015. The Urban Growth and Land-use Change Simulation in Lincoln, Nebraska, AAG Annual Meeting, April 20-25, 2015, Chicago, IL.
20. Li, R., B. Flyr, M. Pun, J. Bradley, J. Schneider, J. Winter. 2014. Application of a Groundwater Modeling Tool for Managing Hydrologically Connected Area in State of Nebraska, US, American Geophysical Union (AGU) Fall Meeting, Dec 14-18. San Francisco, CA.
21. Li, R., M. Mosier, M. Pun, J. Wietjes, B. Flyr, S. Chinta, 2014. Development of a Modeling Tool for Determining Fully Appropriated Areas in Nebraska, 59th Annual Midwest Ground Water Conference, Sept 30-Oct 2, Lawrence, KS.
22. Smith, K, M. Svoboda, H Reges, D. Gutzmer, Q. Guan, C. Paulsen, R. Li, et al. 2014. The Drought Impact Reporter as a Framework for Citizen Science, American Meteorological Society 94<sup>th</sup> Annual Meeting, Feb 3. Atlanta, GA.
23. Li, R., Z. Tang, and X. Li, 2013. Drainage Structure Dataset and its Effects on Surface Flow Modeling with LiDAR. AAG Great Plains/Rocky Mountains Division Meeting. Oct 10-12, Omaha, NE.
24. Li, R., M. Pun, D. Hallum, et al., 2012. Climate Variability and Its Implications to Future Irrigation Requirement in Nebraska. NGWA Conference on Great Plains Aquifers: Beyond the Ogallala, Oct 25-26, Omaha, NE.
25. Li, R., Guan, Q., J. Leng, et al., 2012. Exploring the Relationships between Drought Intensity and Drought Impacts in the United States: A Spatio-temporal Perspective. AAG Annual Meeting, Feb 24-28, New York, NY.
26. Tang, Z., X. Li, N. Zhao, R. Li, 2012, Developing a Restorable Wetland Index for Wetland Program Planning: A Multi-Criteria Spatial Analysis, AAG Annual Meeting, February 24-28, 2012, New York, NY.

27. Guan, Q., R. Li, K. Smith, et al., 2011. A Next-generation Online Mapping Tool for Dynamic Visualization of Drought Impacts in the U.S. AAG Great Plains/Rocky Mountains Division Meeting. Oct 6-8, Denver, CO.
28. Li, R., L. Zhao, and X. Li, 2011. Integrating LiDAR Technology into Agricultural Wetland Conservation: A Case Study in the Upper Sand Creek Watershed. Water for Food 2011 Global Conference, May 1-4, Lincoln, NE.
29. Zhao, L., R. Li, Li, X., Tang, Z., 2011, Building 3-D Wetland-Agricultural Geodatabase in South Central Nebraska, Water for Food Conference, May 1-4, Lincoln, NE.
30. Li, R., J. Merchant, and Q. Guan, 2011. Understanding Groundwater Vulnerability in the Context of Future Climate Change and Biofuels-related Land Use Change. AAG Annual Meeting, April 12-16, Seattle, WA.
31. Tang, Z., X. Li, R. Li, N. Zhao, L. Zhao, 2011. Applying LiDAR Technology in Agricultural Wetland Conservation Planning in South-central Nebraska, Nebraska Planning Conference, Nebraska Planning and Zoning Association, Grand Island, Nebraska.
32. Tang, Z., X. Li, R. Li, N. Zhao, L. Zhao, R. Wilson, E. Harvey, 2011. Develop LiDAR-derived Wetland Maps and Restorable Wetland Index, Rainwater Basin Joint Venture/Playa Lake Joint Venture Research Symposium, Grand Island, Nebraska.
33. Li, R., Q. Guan, and J. W. Merchant, 2010. Modeling Biofuel Cropland Expansion in North Dakota. AAG Annual Meeting, April 14-18, Washington D.C.
34. Li, R., J. W. Merchant, X. Chen, et al., 2009. Reducing Uncertainty in Characterization of the Vadose Zone for Modeling Groundwater Vulnerability, AGU Annual Conference, Dec. 14-18, San Francisco, CA.
35. Li, R., Merchant, J., Sun, T., and Zhao, L. 2009. Standardizing Mapping of Groundwater Vulnerability Factors Using National and State-level Geospatial Databases, American Society for Photogrammetry and Remote Sensing (ASPRS) Upper Midwest Chapter Meeting. Oct. 5-7, USGS EROS Center, Sioux Falls, South Dakota.

#### **TECHNICAL REPORTS** (not peer reviewed)

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1. Li, R. 2016. Geocoding Locations of Historic Reclamation Research Sites using Google Earth (1988-1997). **American Society of Mining Reclamation.**
2. Pun, M., R. Li, R. Werner, Z. Adane. 2016. Study of Groundwater System Response to Variable Climate and Water Management Alternative Scenarios in the Niobrara River Basin. **Nebraska DNR & U.S. Bureau of Reclamation.**
3. Li, R. 2015. Procedure for Determining Areas Where Surface Water and Groundwater are Hydrologically Connected. **Nebraska DNR.**

4. Li, R. and M. Pun. 2015. Evaluation of Groundwater Resources in Response to Agricultural Irrigation Management Scenarios in the Central Valley, California. **Natural Resources Defense Council.**

#### **ADVISING & STUDENT AWARDS (at the SIUC and UNL)**

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##### Ph.D. Advisee (as Chair or Co-Chair)

- 2017-now Di Wu - Environmental Resources & Policy
- 2018 CUAHSI Summer School Award
  - 2018 Illinois Water Resources Center Small Water Grant Award
- 2018-now Amina B. Naliaka - Environmental Resources & Policy
- 2021 The Sustainable Agriculture Research and Education (SARE) grant
  - 2020-2021 Graduate Teaching Excellence Award
  - 2019 CUAHSI Summer School Award
- 2018-now Saroj Thapa - Environmental Resources & Policy (Co-chair with D.J. Gibson)

##### M.S. Advisees (as Chair)

- 2021-now Joseph Kalinzi - Geography
- 2019-2021 Supria Sarkar - Geography
- 2018-2020 Jie Shi Liew - Geography
- 2019 GPSC Research Award
- 2017-2019 Astha Bista - Geography
- 2018 Graduate Teaching Excellence Award
- 2017-2019 Sourav Bhadra - Geography
- 2018 Ben Dziegielewski Award
- 2017-2019 David Leifer - Geography
- 2018 ASMR Conference Travel Award
- 2017-now Mark Healy - Geography
- 2017 Ben Dziegielewski Award
- 2015-2017 Kristyn Stauber - Geography
- FY16 U.S. Forest Service Volunteer and Service Award

##### Ph.D./ M.S. Advisees (as Committee Members)

- 2020-now Bryan Foster – Plant Biology, Ph.D.
- 2018-now Neeraja Kolloju – Sociology, Ph.D.
- 2018-now Lindsey McKinzie – Agricultural Science, Ph.D.
- 2016-now Sarfaraz Alam – Environmental Engineering, Ph.D. co-advise at UCLA
- 2016-now Yao Xue – Environmental Resources & Policy, Ph.D.
- 2016-now John O’Connell – Zoology, Ph.D.
- 2019-2021 Connie Kaniewski, Bibek Ban – Geography, M.S.
- 2018-2020 Nimisha Karki, Noah Scalero – Geography, M.S.

2017-2019 Cataria Davis – Public Health, Ph.D.  
 2017-2019 Shishir Manandhar, and Chi Fai Wong – Geography, M.S.  
 2016-2018 Qing Wang, and Guangping Qie – Environmental Resources & Policy, Ph.D.  
 2018-2019 M.M. Rahaman – Civil Engineering, M.S.  
 2017-2018 Ali Alruzuq – Geography, M.S.  
 2016-2017 Santosh Rijal – Environmental Resources & Policy, Ph.D.  
 2016-2017 Brandon Polk – Geography, M.S.  
 2014-2015 J. Matczyszyn – Plant Science, Ph.D. at UNL; A. Heithoff, A. Countryman, and C. Deal – Survey Research and Methodology, M.S. at UNL

Undergraduate Advisees

2021-now  
 2020-now C. Talbert – Undergraduate student worker (SIU REACH award recipient)  
 2019-20 L. Prado – Undergraduate student worker (SIU REACH award recipient)  
 2014-15 E. Jarrett, and M. O’Nele – Natural Resources Science, B.S., at UNL  
 2013-14 A. Miller – Geography, B.A., Graduated with Highest Distinction at UNL

**PROFESSIONAL MEMBERSHIPS/CERTIFICATE**

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Since 2009 Association of American Geographers (AAG)  
 Since 2009 American Geophysical Union (AGU)  
 Since 2012 Engineer in Training (EIT), registered in Michigan in 2011  
 Since 2016 The Universities Council on Water Resources (UCOWR)  
 Since 2016 FAA Unmanned Aircraft System (UAS) Remote Pilot Certificate

**GRNANTS/PAPERS REVIEW**

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Panelist for FY20 NSF S&CC program  
 Ad-hoc reviewer for FY20 NSF HEGS program  
 Panelist for FY20 NSF CIVIC program  
 Panelist for FY20 USGS Water Resources Research National Competitive Grants program  
 Panelist for FY19 NSF GRFP program  
 Reviewer for 2019-2021 AAG WRSG student research awards  
 Reviewer for FY19 USGS/NIWR Water Resources Research National Competitive Grants Program  
 FY18 Nebraska Water Center, FY17 State of Wisconsin Groundwater Proposal  
 Reviewer for IPCC 6<sup>th</sup> Assessment Report (WG II first/second order draft)

**Journal Article Review** (with the number of manuscripts in parentheses):

Environmental Science & Technology (2), Science of the Total Environment (26), Environmental Research Letter (1), Progress in Physical Geography (1), Journal of Hydrology (3), Energy Research & Social Science (4), Journal of Environmental Management (5), Journal of Environmental Quality (3), Environmental Pollution (3), Intl. Journal of Geographic Information Science (1), Global Environmental Change (1), Journal of the American Water Resources Association (4), Environmental Management (2); Environmental Modelling & Software (1); Annals of GIS (2), CATENA (3), Annals of American Association of Geographers (1), Journal of Cleaner Production (3), Frontiers in Artificial Intelligence (4), Social Science Computer Review (1), International Journal of Applied Earth Observations and Geoinformation (1), Earth and Space Science (1), Journal of Hydrologic Engineering (1), Hydrogeology Journal (1), PLOS One (1), GeoCarto International (9), Water and Environment Journal (3), Environmental Monitoring and Assessment (3), Ecological Indicators (1), Water Policy (1), ISPRS Intl. Journal of Geo-Information (1), Remote Sensing (2), Journal of Contaminant Hydrology (1), IEEE Systems Journal (1), Energy Conversion and Management (1), Ocean and Coastal Management (1), Journal of Forestry (1), Human and Ecological Risk Assessment (1), Archives of Agronomy and Soil Science (1), Intl. Journal of Disaster Risk Science (2), Frontiers of Earth Science (2), Intl. Journal of Environmental Research and Public Health (2), Environmental Studies & Sciences (1), Water (1), Wetlands (2), Stochastic Environmental Research and Risk Assessment (1), Water Quality, Exposure and Health (1), Journal of Rural Studies (1), Sustainability (1), Sustainable Cities and Society (1), Transactions of the Illinois State Academy of Science (1) , Southeastern Geographers (1), 2018 CPGIS Student Paper Competition (4)

**SYNERGISTIC ACTIVITIES**

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Apr 2021-now	<b>Board Director</b> , AAG Water Resources Specialty Group
Nov 2020-now	<b>Member</b> , University-Level Scholar Excellence Award Committee, Southern Illinois University-Carbondale
Nov 2019-now	<b>Editorial Board</b> , Frontiers in Artificial Intelligence (Food, Agriculture and Water section)
Oct 2019-Jan 2020	<b>Member</b> , Faculty Search Committee for Geography and Environmental Resources program at SIUC.
Jun 2019-Aug 2020	<b>GIS Consultant</b> , for the Massac County E911 Center of Illinois
Apr 2019-now	<b>Member</b> , Computing Advisory Committee, Southern Illinois University-Carbondale

- Apr 2019 **Session Chairs**, Using Coupled Human-Hydrologic Approaches to Advance Water Management and Governance, Emerging Geospatial Techniques to Advance the Understanding of Water Resources, 2019 AAG Annual Meeting, Washington DC.
- Nov 2018-Jun 2020 **Guest Editor**, *Remote Sensing* special issue on “Value and Potential of Remote Sensing Data for Food, Energy, and Water Nexus” (with Prof. M. Gebremichael)
- Nov 15, 2018 **Organizer and Panelist**, *Drone Panel Talk in Southern Illinois* in celebration of 2018 GIS Day
- Apr 2018-now **Elected Member**, Graduate Council, Southern Illinois University-Carbondale
- Apr 2018 **Session Chair**, Creative Pedagogies and Tools for Enhancing Geography Learning, 2018 AAG Annual Meeting, New Orleans, LA
- Apr 2018-Apr 2021 **Awards Committee Member**, AAG Water Resources Specialty Group
- Jan 2018 **Review Panelist**, NSF Graduate Research Fellowship Program
- Apr 2017 **Session Chair**, Geographies of Food and Agriculture Special Topics: Research in agriculture, 2017 AAG Annual Meeting, San Francisco, CA
- Jul 2016 **Session Chair**, Water resource planning and management, irrigation and water usage I and II, 5<sup>th</sup> International Conference on Agro-Geoinformatics, Tianjin.
- Apr 2016-now **University Delegate**, The Universities Council on Water Resources (UCOWR)
- Mar 2016 **Session Organizer/Chair**, Water Resources Sustainability in California I and II, 2016 AAG Annual Meeting, San Francisco, CA
- Dec 2015-now **Graduate Program committee member**, Department of Geography & Environmental Resources, SIUC
- Dec 2015-now **Faculty Adviser** for **SIUC GIS Club**, a registered student organization
- Dec 2014 **Outstanding Student Paper Awards Judge**, American Geophysical Union Conference, San Francisco, CA
- 2010-2011 **Student Adviser**, EnvironMentor Program (for high-school students), UNL

## OTHER RESEARCH ACTIVITIES

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- 2014- 2015 **Project Manager**, *For Development of a Groundwater Model for the Lower Platte River and Missouri River Tributaries Basins*, Nebraska DNR.
- 2013-2015 **Hydrologist**, *Development of Hydrologically Connected Area in Support of INSIGHT*, Nebraska DNR.
- 2014-2015 **Hydrologist**, *Niobrara River WaterSmart Study*, funded by the US Bureau of Reclamation and the Nebraska DNR.

- 2012-2013 *Hydrologist, Platte River Cooperative Hydrology Study (COHYST) project, funded by multi-agencies in Nebraska (Apr. 2012-Dec. 2013)*
- 2011 *GIS Developer, U.S. Drought Impact Reporter (2<sup>nd</sup> Release), National Drought Mitigation Center, UNL.*
- 2010-2011 *Environmental Modeler, Developing LiDAR-Derived Wetland Maps to Assess Conservation Design Practices For Playa Wetlands, US EPA*
- 2008-2012 *Environmental Modeler, Modeling Impacts of Future Land Use Change on Groundwater Quality in the Northern Great Plain, USDA*
- 2006-2007 *Environmental Modeler, Water Resource Planning and Management in Hengshui City, China, the City of Hengshui.*

## INVITED TALKS

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- 2021 “Bridging the Smart Divide in Rural America: An Outlook of ICTs and Social Infrastructures”, Invited Talk by Northern Illinois University, DeKalb, IL. Sept 24, 2021
- 2020 “Improving Hydrologic Drainage Delineation Using LiDAR-derived DEMs and Artificial Intelligence”, Invited Talk by Illinois DOT. Dec 2, 2020.
- 2019 “Drone-based Water Quality Monitoring for Harmful Algal Blooms”, Invited Talk by Southern Illinois Volunteer Lake Monitoring Program. Marion, IL. Apr 19, 2019.
- 2018 “Social Media Footprints of Public Perception on Energy Issues”, Research Seminar, Environmental Resources & Policy Program, Southern Illinois University, Carbondale, IL. Mar 28, 2018.
- 2017 “Geospatial Perspectives for Land and Water Research”, Electronic Visualization Lab (EVL), University of Illinois-Chicago, Chicago, IL. Jun 7, 2017.
- 2016 GIS and Its Applications, Panel Discussion Seminar for the GIS Day, Southern Illinois University, Carbondale, IL. Nov 16, 2016.
- “The Outlook for Groundwater Sustainability under Management Scenarios in the Central Valley, California”, Research Seminar, Environmental Resources & Policy Program, Southern Illinois University, Carbondale, IL. Mar 9, 2016.
- “Modeling for Land and Water Management in Intensive Agricultural Areas”, Research Seminar, Illinois State Water Survey (ISWS), University of Illinois-Urbana Champaign, Champaign, IL. Jan. 6, 2016.
- 2015 “Modeling Practices for Water Resource Management in Agricultural Landscape: From Nebraska to California”, Research Seminar, Center for Spatial Information Science and Systems (CSISS), George Mason University, Fairfax, VA. Sept 18, 2015.
- “Geospatial Modeling for Characterizing Agricultural Landscapes: From Farmlands to Wetlands”, Research Seminar, Department of Geography and Environmental Resources, Southern Illinois University, Carbondale, IL. Jan 16, 2015.
- 2014 “Modeling for Integrating Land and Water Management in Agricultural Landscapes”, Research Seminar, Department of Geography, Oklahoma State University, Stillwater, OK. Dec 4, 2014.

“Exploring Land Availability for Bioenergy Crops and its Related Modeling Practices”,  
Geography Seminar Series, Geography & GIScience Program, University of Nebraska-  
Lincoln, Lincoln, NE. Oct 10, 2014.