CHEYENNE I. LEI

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Research Fellow, Institute for Global Change Biology, University of Michigan

EDUCATION

Summary: My interests are interdisciplinary, with specializations in Remote sensing, Agricultural Ecology, Global Change Biology, and Instrument Design and Implementation. I also have strong expertise in Physical Geography, and Human-Land-Atmospheric interactions on the environment and Earth's energy balance.

Michigan State University	Geography	Ph.D. 2022
Western Michigan University	Geography - Environmental & Resource Analysis	M.A. 2016
Northern Michigan University	Earth Science w/ Geomatics minor	B.S. 2014

Certificates:

University of Michigan	College Teaching in Science, Technology, Engineering and Mathematics (STEM)	April 2023
Western Michigan University	Geographical Information Science	May 2016

PUBLICATIONS

Summary: Ten (10) peer reviewed publications in well-respected journals (Nature Communications, Global Change Biology: Bioenergy, Environmental Research Letters), with three (3) being first author and seven (7) having a significant leadership role.

Published:

1. **Lei, C.,** Chen, J., & Robertston, G. P. (2023). Climate cooling benefits of cellulosic bioenergy crops due to elevated albedo. *Global Change Biology: Bioenergy*. https://doi.org/10.1111/GCBB.13098

2. **Lei, C.,** Abraha, M., Chen, J., & Su, YJ. (2021). Long term variability of root production in bioenergy systems using ingrowth cores and eddy covariance. *Journal of Plant Ecology.* https://doi.org/10.1093/jpe/rtab018

3. **Lei, C.,** & Zhu, L. (2018). Spatio-temporal variability of land use/land cover change (LULCC) within the Huron River: Effects on stream flows. *Climate Risk Management*, 19, 35-47. https://doi.org/10.1016/j.crm.2017.09.002

4. Shirkey, G., John, R., Chen, J., Dahlin, K., Abraha, M., Sciusco, P., **Lei, C.,** & Reed, D. E. (2022). Fine resolution remote sensing spectra improves estimates of gross primary production of croplands. *Agricultural and Forest Meteorology*, 326, 109175. https://doi.org/10.1016/j.agrformet.2022.109175

5. Ouyang, Z., Sciusco, P., Jiao, T., Feron, S., **Lei, C.,** Li, F., ... & Chen, J. (2022). Albedo changes caused by future urbanization contribute to global warming. *Nature Communications*, 13(1), 1-9. https://doi.org/10.1038/s41467-022-31558-z

6. Sciusco, P., Chen, J., Giannico, V., Robertson, G.P., Abraha, M., **Lei, C.**, Shirkey, G., Yuan, J. (2022). Albedo-induced global warming impact (GWI Δα) of an Upper Midwest USA watershed — A significantly undermined regulator in climate mitigations. *Land*, 11(2), 283. https://doi.org/10.3390/land11020283

7. Abraha, M., Chen, J., Hamilton, S. K., Sciusco, P., **Lei, C.,** Shirkey, G., Yuan, J., Hamilton, S.K., & Robertson, G. P. (2021). Albedo-induced global warming impact of Conservation Reserve Program grasslands converted to annual and perennial bioenergy crops. *Environmental Research Letters*, *16*(8), 084059. https://doi.org/10.1088/1748-9326/ac1815

8. Chen, J., **Lei, C.,** & Sciusco, P. (2021). Modeling Ecosystem Global Warming Potentials. In Chen J. (Author), *Biophysical Models and Applications in Ecosystem Analysis* (pp. 119-150). East Lansing: Michigan State University Press. https://doi.org/10.14321/j.ctv1h1vc27.11

9. Dahlin, K. M., Akanga, D., Lombardozzi, D. L., Reed, D. E., Shirkey, G., **Lei, C.,** Abraha, M. & Chen, J. (2020). Challenging a global land surface model in a local socio-environmental system. *Land*, 9(10), 398. https://doi.org/10.3390/land9100398

10. Sciusco, P., Chen, J., Abraha, M., **Lei, C.**, Robertson, G.P., Lafortezza, R., Shirkey, G., Ouyang, Z., Zhang, R., & John, R. (2020). Spatiotemporal variations of albedo in managed agricultural landscapes: inferences to global warming impacts (GWI). *Landscape Ecology*, 35(6), 1385-1402. https://doi.org/10.1007/s10980-020-01022-8

11. Scott-Smith, C., Oh, J.S., & **Lei, C.** (2015). Exploring the equity dimensions of US bicycle sharing systems (No. TRCLC 14-01). Western Michigan University. Transportation Research Center for Livable Communities. https://doi.org/10.13140/RG.2.2.30941.72163

Publications submitted, in review & in revision:

12. Chen, J., Robertson, G.P., **Lei, C.**, Chu H., Sciusco, P., Li, X., Abraha, M., Wang, Y. (Submitted for review, Nov 2023) Underestimated Albedo-Induced Climate Cooling Benefits from Terrestrial Ecosystems. *Environmental Research Letters.*

13. Reed, D., **Lei, C.**, Baule, W., Shirkey, G., Chen, J., Czajkowski, K. P., & Ouyang, Z. (Under revision, Nov 2023). Impacts of an urban density gradient on land-surface thermodynamic fluxes across seasonal timescales. *International Journal of Climatology.*

Publications with full working draft in preparation (available upon request):

14. **Lei, C.,** Ibanez, I., Chen, J., Reich, P., Sciusco, P., Lei, M., & Shirkey, G. (Final Preparation). Evaluating Surface Reflectivity of Crops as Contribution to a Nature-Based Climate Solution. *Environment Research Letters.*

15. **Lei, C.,** Sciusco, P., Chen, J., Robertson, G. P., Lindback, E., Lei, M., Shirkey, G., & Arrocha, I. (Final preparation). Temporal variations of albedo on bioenergy crops: Effects on global warming potential during three cultivation seasons.

RESEARCH

Summary: My research focuses on investigating the practical analyses and applications of the drivers of climate change, with a particular focus on the intersection of agriculture, surface reflectivity, and climate warming/cooling. I am well versed in within the interdisciplinary science of landscape ecology, physical geography, and atmospheric physics, quantitative tools from including machine learning, and data manipulation from field observations, remote sensing, and modeling, with eddy covariance and micrometeorological towers experiments spanning multiple spatial scales and ecosystem types (e.g., croplands, forests, grasslands, urban ecosystems). I disseminate my research through scientific collaboration and educational outreach.

Research Fellow
University of Michigan; School for Environment and Sustainability
Institute for Global Change Biology
Advisors: Peter Reich; Ines Ibanez

- Develop and implement analysis techniques and methods undergoing a synthesis on integrating the effects of surface reflectivity over multiple scales, landscape dynamics, and agronomic practices for terrestrial sustainability and management.
- Investigation into biogeochemical and physical plant responses to changing environment and climate.
- Use of instrument testing and precision for measuring radiative forcing effects of global warming potential over agricultural, forest, wetland and suburban ecosystems using field, laboratory, and remote sensing instrumentation.
- Collaboration with multiple stockholders at university, farmer, scientific and educational positions to publish journal articles from field scale (i.e., eddy covariance, meteorological) to remotely sensed (i.e., Landsat, MODIS, Venus) applications of surface reflectivity.
- Provide leadership, scientific expertise and mentorship to undergraduate students, teams, and interns in field surveying, modeling and research design.

Graduate Research Assistant
Michigan State University
Landscape Ecology & Ecosystem Science Lab (LEES)
Advisor: Jiquan Chen

- Assess global warming impact of biofuel crops using surface-induced reflectance and climate modelling.
- Construct and maintain tower networks at multiple biofuel cropping, grassland and forest ecosystems for the monitoring and analysis of surface reflectivity, climate, and soil dynamics.
- Deployment and maintenance of remote sensing instruments including NVDI, solar and infrared radiation.
- Interdisciplinary collaboration to publish peer reviewed manuscripts in carbon dioxide fluxes, solar/infrared radiation, atmosphere, and climate change.
- Performed supervisory and mentorship duties for multiple undergraduate interns during field research, and project management.

Flux Tower Technician
Michigan State University
Landscape Ecology & Ecosystem Science Lab (LEES)

- Implemented new methodologies of research through the construction and maintenance of eddy covariance and meteorological tower networks at multiple ecosystems (i.e., urban, agricultural, and forest) for the monitoring and analysis of albedo, climate, and soil.
- Quality controlled and analyzed large spatial and temporal data at the plot scale (i.e., field survey instrumentation), field scale (i.e., eddy covariance, meteorological), local scale (i.e., UAV) and regional scale (i.e., Landsat, MODIS, Venμs).

Graduate Research Assistant
Western Michigan University
W.E. Upjohn Center for the Study of Geographical Change
United States DOT: Geography & Engineering Collaboration

- Performed research at the W.E. Upjohn Center for the Study of Geographical Change to provide remote sensing support for GIScience applications in research and administrative decision-making.
- Imported raw map data, prepared master indices, verified data integrity by pairing aerial imagery with legacy topographic maps for the entire United States.
- Created and published high resolution hybrid aerial and topographic maps distributed by Avenza Systems Inc.

PRESENTATIONS

Summary: Participation in seminars as educational outreach and research at high schools, community stakeholders, universities, annual science meetings and conferences including Association of American Geographers and Ecological Society of America.

Invited research talks:

Lei, C. (2023). Understanding Albedo: What is it? How can it affect climate change? School of Environment, Geography, and Sustainability 2023 Distinguished Alumni talk. October 27, 2023. Western Michigan University, Kalamazoo, MI.

Lei, C. (2023). Climate change impacts on agriculture and food supply. Knox College Environmental Studies talk. August 6, 2023. Knox College, Galesburg, IL.

Lei, C. (2023). Understanding Albedo: What is it? How can it affect climate change? 4th Annual High School Climate Change Symposium. March 1, 2023. Battle Creek Area Math and Science Center, Battle Creek, MI.

Lei, C., Sciusco, P., Chen, J., Robertson, G. P., Lindback, E., Lei, M., Shirkey, G., & Arrocha, I. (2022). Land Cover and Climate alters surface albedo during cultivation seasons. United States-China Carbon Consortium. October 28-30, 2022. China University of Geosciences, Wuhan, China. Hybrid Meeting.

Chen, C., **Lei. C.,** Abraha, M., Robertson, G.P., Hamilton, S., Sciusco, P. (2020). Long-term changes in ecosystem carbon production and the role of albedo in regulating climate. GLBRC Virtual Sustainability Meeting. October 7-9, 2020, Virtual Conference.

Reed, D., **Lei, C.,** Baule, W.J., and Shirkey, G. (2019). Impacts of an urban density gradient on land-surface thermodynamic fluxes. February 2019, Wayne State University, MI.

Stewart, C. (2016). Spatial, temporal variability & trends within the tributaries of the Huron River: Effects on the frequency of flooding. Landscape Ecology & Ecosystem Science Lab & Center for Global Change and Earth Observations, March 2016, Michigan State University, East Lansing, MI.

Oral presentations:

Lei, C., Ibanez, I., Chen, J., Reich, P., Robertson, G. P., Sciusco, P., Lei, M., & Shirkey, G. (2023). Evaluating Surface Reflectivity of Crops as Contribution to a Nature-Based Climate Solution. Ecological Society of America Conference, August 6–13. Portland, OR.

Chen, J., **Lei. C.,** Robertson. G.P. (2023). Likely undervalued climate benefits of radiative forcing from altered land surface albedo during land conversions. The National Aeronautics and Space Administration 2023 AMS Annual Meeting. May 8-12.

Lei. C., Chen, J., Robertson. G.P. (2022). Land cover and climate alters surface albedo during cultivation season. Great Lakes Bioenergy Research Center Annual Science Meeting. May 17–19, Lake Geneva, WI.

Lei. C., Chen, J., Robertson. G.P. (2021). Global warming impacts of converting forest into bioenergy croplands: Case study at the Kellogg Biological Station. KBS-LTER Annual Science Meeting. September 23, Hickory Corners, MI.

Lei. C., Chen, J., Robertson. G.P. (2020). The climate cooling impact of albedo in perennial bioenergy croplands. KBS-LTER Midterm Meeting. September 9-11. Virtual Conference.

Lei. C., Chen, J., Robertson. G.P. (2020). The climate cool impact of albedo in perennial bioenergy croplands. Ecological Society of America Conference, August 3–8, Virtual Conference. https://eco.confex.com/eco/2020/meetingapp.cgi/Paper/84459

Lei, C. (2019). Albedo induced global warming potential in bioenergy cropping systems. 9th Annual Geography Graduate Student Presentation Competition. March 29, Geography Department, East Lansing, MI.

Lei, C. (2017). Analysis of ingrowth cores and flux variables on the variability of root production within agricultural regions. Association of American Geographers Conference, April 4–9, Boston, MA.

Lei, C. (2017). Analysis of ingrowth cores and flux variables on the variability of root production within agricultural regions. 7th Annual Geography Graduate Student Presentation Competition, March 31, Michigan State University, East Lansing, MI.

Lei, C. (2016). Spatial, temporal variability & trends within the tributaries of the Huron River: Effects on the frequency of flooding. Association of American Geographers: East Lakes & West Lakes Geography Conference, October 13–15, Marquette, MI.

Stewart, C. (2016). Spatial, temporal variability & trends within the tributaries of the Huron River: Effects on the frequency of flooding. Association of American Geographers Conference, March 30–April 3, San Francisco, CA.

Poster presentations:
******* indicates student-mentored*

Falvo, G., **Lei, C.,** Chen, J., Robertson, G.P. (Accepted, 2023). Radiative Forcing from Deforestation is Partially Offset by Soil Conservation, Surface Albedo Modification, and Ecosystem Restoration. American Geophysical Union Conference, Dec 11-15, San Francisco, CA.

Lei, C., Reich, P., Ibanez, I., Chen, J., Robertson, G. P., Sciusco, P., Lei, M., & Shirkey, G. (2023). Evaluating surface reflectivity of crops as contribution to a nature-based climate solution. LICOR Connect 2023 Conference. November 7, Atlanta, GA.

Lei, C., Reich, P., Ibanez, I., Chen, J., Robertson, G. P., Sciusco, P., Lei, M., & Shirkey, G. (2023). Evaluating surface reflectivity of crops as contribution to a nature-based climate solution. University of Michigan Institute for Global Change Biology Mini Symposium. October 26, Ann Arbor, MI.

******Kenney, R., **Lei, C.** (2023). Investigation of albedo through varying degrees of tillage and fertilization in order to reflect on their effects on warming or cooling based on radiative forcing. Kellogg Biological Station Annual Symposium, August 1, Kellogg Biological Station, MI.

Lei C., Reich, P., Ibanez, I., Chen, J., Sciusco, P., Shirkey, G., Lei, M. (2023). Evaluating surface reflectivity of crops as contribution to a nature-based climate solution. 2023 Great Lakes Bioenergy Research Center Annual Science Meeting. May 15–17, Lake Geneva, WI.

Lei. C., Chen, J., Robertson. G.P. (2022). Global warming potential of modelling the conversion of forest into bioenergy croplands: Case study at the Kellogg Biological Station. 2022 Great Lakes Bioenergy Research Center Annual Science Meeting. May 17–19, Lake Geneva, WI.

Lei. C., Chen, J., Robertson. G.P. (2022). Global warming impacts of converting forest into bioenergy croplands: Case study at the Kellogg Biological Station. 2022 Great Lakes Bioenergy Research Center Sustainability Meeting. Feb 14–16. Virtual Conference.

Lei, C., Chen, J., Robertson, P. (2022). Long-term variability of root production in bioenergy crops from ingrowth core measurements. Department of Energy Annual Review, Jan 19–21. Virtual Conference.

Lei, C., Chen, J., Robertson. G.P. (2021). Global warming impacts of converting forest into bioenergy croplands: Case study at the Kellogg Biological Station. KBS-LTER All-Scientist Meeting. September 23, Kellogg Biological Station, MI.

Lei, C., Chen, J., Robertson. G.P. (2021). Temporal variations of albedo on bioenergy crops: Effects of agronomic practices during three cultivation seasons. Great Lakes Bioenergy Research Center Annual Science Meeting. May 6-10. Virtual Conference.

Lei, C., Chen, J., Robertson, P. (2020). Spatiotemporal variability in albedo of biofuel cropping systems. Department of Energy Annual Review, Jan 14t–16, Madison, WI.

Lei, C., Chen, J., Robertson, P. (2019). Albedo induced global warming potential in bioenergy cropping systems. Great Lakes Bioenergy Research Center Annual Science Meeting Poster Session, May 21– 23, Lake Geneva, WI.

Lei, C., Chen, J., Robertson, P. (2019). Albedo induced global warming potential in bioenergy cropping systems. Department of Energy Annual Review, Jan 22– 24, Madison, WI.

******Arrocha, I., **Lei, C.,** & Chen, J. (2019). Albedo on perennial versus annual biofuel croplands. Poster Presentation. Mid-Michigan Symposium for Undergraduate Research Experiences, July 24, Michigan State University, East Lansing, MI.

******Lindback, E., **Lei, C.,** & Chen, J. (2018). Comparing albedo, foliar nitrogen content, and global warming potential of fertilized and unfertilized croplands at the Great Lakes Bioenergy Research Center. Poster Presentation. Kellogg Biological Station Annual Symposium, August 1, Kellogg Biological Station, MI.

Shirkey, G., Sciusco, P., John, R., Reed, R., O'Brien, K., **Lei, C.,** Cooper, L., Chen, J., Dahlin, K. (2018). Integrating historical land cover and land management in Michigan's Kalamazoo Watershed: A story of carbon flux impact. Great Lakes Bioenergy Research Center Annual Science Meeting Poster Session, May 7– 9, Lake Geneva, WI.

Lei, C., Abraha, M., Kahmark, K., Chen, J. Robertson, P., Hamilton, S. (2018). Spatiotemporal variability of albedo in diverse biofuel cropping systems. Great Lakes Bioenergy Research Center Annual Science Meeting Poster Session, May 7–9, Lake Geneva, WI.

Lei, C. (2017). Analysis of ingrowth cores and flux variables on the variability of net ecosystem exchange and root production within ecosystem regions. Council of Graduate Students Academic Conference, February 25, Michigan State University, East Lansing, MI.

Scott-Smith, C., Oh, J.S., **Stewart, C.** (2015). Explorations into the equitable performance of U.S. bicycle sharing systems. Association of American Geographers Conference, April 21–25, Chicago, IL.

ADVISING & MENTORSHIP

Summary: Ten (10) undergraduate students mentored, many of which have gone onto master's programs, become Research Scientists, and hired at engineering firms.

Julia Seay — May 2023 – Aug 2023
Environmental Studies and Earth & Environmental Geoscience, Washington and Lee University, VA.
Current position: Senior undergraduate, Washington and Lee Univ.

Renae Kenney — May 2023 – Aug 2023
College of Engineering, Michigan State University, East Lansing, MI.
Current position: Senior undergraduate, Michigan State Univ

Michael Collins — May 2022 – Aug 2022
Department of Environment and Sustainability, Michigan State University, East Lansing, MI.

Maximilian Mihaylov — June 2019 – Aug 2019
Interdisciplinary Studies in Social Science, Michigan State University, East Lansing, MI

Ezequiel Mussambe June 2019 – Aug 2019
Department of Geography, Environment & Spatial Sciences, Michigan State University, East Lansing, MI.

Isabel Arrocha June 2019 – Aug 2019
Department of Biological and Agricultural Engineering, University of Arkansas, Fayetteville, AR.
Current position: Junior Engineer, Malone/Wheeler Inc.

Emily Lindback May 2018 – Aug 2018
Department of Earth and the Environment, Franklin & Marshall College, Lancaster, PA
Current position: Agricultural Stewardship Specialist, Cornell Cooperative Extension of Suffolk County.

Pedro Kuyenga May 2018 – July 2018
Department of Geography, Environment & Spatial Sciences, Michigan State University, East Lansing, MI.
Current position: Geospatial Data Analyst, Infrastructure Planning & Facilities, Michigan State Univ.

Kaylee Peterson Apr 2018 – July 2019
Department of Community Sustainability, Michigan State University, East Lansing, MI.
Current position: Community Outreach Coordinator, Friends of the Detroit River.

Kaitlyn O'Brien Apr 2017 – May 2018
Department of Community Sustainability, Michigan State University, East Lansing, MI.

TEACHING ACTIVITES

Summary: I have instructed courses at the undergraduate level in Ecology, and guest lectured at many high schools, symposiums and universities in global climate change, micrometeorological instrumentation, and environmental sustainability. One of my biggest accomplishments is the creation of Grab-and-Go Outreach activities featuring my research developed into an activity by GLBRC Education and catered to elementary and middle school educational application. Within the community, I am an active Instructor at multiple community colleges in professional learning and community engagement.

Instructor Led:

Instructor of Record Summer 2024
Michigan Math and Science Scholars 2024 Program
University of Michigan College of Literature, Science, and the Arts
- Course: An Introduction to Ecological & Micrometeorological Instrumentation

Temporary Instructor July 2023-Present
Washtenaw Community College
Department of Personal Enrichment

Schoolcraft College
Department of Personal & Professional Learning

Lansing Community College
Department of Community Engagement & Adult Enrichment

Graduate Teaching Assistant Summer 2018
W.K. Kellogg Biological Station
- Course: Integrative Biology (IBIO) 355 – Ecology
- Semester of junior and senior undergraduates at the W.K. Kellogg Biological Station in evolutionary and community ecology, environmental studies, and climate change.

Workshop Nov 2021
East China Normal University, Shanghai, China.
Short-Term Postgraduate Course
- Title: “Biophysical Models and Applications in Ecosystem Analysis” *(Virtual)*

Educational Research, Teaching & Outreach:
Practice Teaching Facilitator 2023-Present
Center for Research on Learning and Teaching
University of Michigan
- Facilitator for practice teaching sessions for incoming graduate student instructors and instructional aide teaching orientations

Grab-and-Go Exploration Station July 2023
GLBRC Outreach & GLBRC Education
Exploring Albedo: Exploration Station Activity Guide
- Overview: “Exploring Albedo” is an activity designed to introduce learners to the concept of albedo. Visitors will learn about the albedo of different surfaces, form a hypothesis about the connection between land use, temperature, and albedo, and test their predictions using laser temperature sensors!

Keynote Speaker Mar 2023
Battle Creek Area Math and Science Center, Battle Creek, MI.
4th Annual High School Climate Change Symposium
- Title: “Understanding Albedo: What is it? How can it affect climate change?”

Keynote Speaker Oct 2022
China University of Geosciences, Wuhan, China.
United States-China Carbon Consortium
- Title: “Understanding Global Warming Potential”

Educational Outreach - Interactive Science Exploration Apr 2019
University of Wisconsin - Madison
University of Wisconsin Science Expeditions: Destination for Exploration
- Collaboration with Wisconsin Energy Institute outreach team on helping develop an interactive educational activity on land-use/albedo research.

Watershed Management
Alger County Conservation District, Alger, MI. Summer 2013
Huron River Watershed Council, Ann Arbor, MI. *2013 - 2014*
- Educational outreach to community, stakeholders and high schools on environmental sustainability and science education.
- Monitored invasive plant species, and removed them with mechanical and herbicidal methods.
- Collected water quality data (i.e., stream depth, stream width, water temperature, water conductivity) and inventoried micro invertebrate in streams.

Guest Lectures:
Guest Lecturer Dec 2020
Beijing Normal University, Beijing, China
- Title: “Understanding Global Warming Impact” (Virtual)

Guest Lecturer Feb 2020
Michigan State University, East Lansing, MI.
Integrative Biology (IBIO) 357 - Global Change Biology
• Title: “Albedo and eddy covariance: Effects on climate & land use change”

Co-Guest Lecturer Oct 2019
Great Lakes Bioenergy Research Center (GLBRC) Environmental Sustainability Meeting
Hickory Corners, MI.
• Title: Great Lakes Bioenergy Research Center Biofuel Cropping System Experiment: Albedo

Guest Lecturer Sept 2019
W.K. Kellogg Biological Station LTER All Scientist Meeting
Hickory Corners, MI.
• Title: “Surface reflectivity: Spatiotemporal variability of albedo in bioenergy cropping systems”

Guest Lecturer June 2019
GLBRC REUs from MSU Main Campus & UW, W.K. Kellogg Biological Station
Hickory Corners, MI.
• Title: “Albedo in bioenergy cropping ecosystems”

Guest Lecturer Fall 2017
Michigan State University, East Lansing, MI.
Geography (GEO) 892 – Micrometeorological Instrumentation & Measurements
• Provided hands-on experience in sensor and weather tower construction, how to wire, write and process data from popular data-loggers, instruction on using LoggerNet.

FUNDING, AWARDS & SCHOLARSHIPS

Awards:

School of Environment, Geography & Sustainability Distinguished Alumnus Achievement Award, Western Michigan University 2023
- https://wmich.edu/arts-sciences/alumni/alumni-awards

UMPDA Conference Award, University of Michigan Postdoctoral Association 2023
Jennifer L. Reed Award in Bioenergy Science, Great Lakes Bioenergy Research Center 2023
- https://www.glbrc.org/research/reed-bioenergy-award

Research Fellow, Institute for Global Change Biology, University of Michigan 2022
Department of Energy Research Publication Highlight, Great Lakes Bioenergy Research Center Year 4 Narrative 2021
BFSAA Historical and Emerging Leaders Nomination, Black Faculty, Staff and Administrators Association (BFSAA), Michigan State University 2021
GLBRC Early Career Women in Bioenergy Science Nomination, W.K. Kellogg Bio. Station 2020
Research Scholars Award, College of Social Science, Michigan State University 2018 & 2019
W.K. Kellogg Biological Station Fellowship, W.K. Kellogg Biological Station 2018
Academic Achievement Graduate Assistantship Award, Michigan State University 2017

Recently submitted grants, rejected but reviewed as High Priority

DE-FOA-0002849 – Synthesis Research for Transferable Insights:
Dilemma of Global Terrestrial Ecosystems: An Undervalued Forcing in Climate Change Science, Department of Energy: Biological and Environmental Research, Earth, and Environmental Systems Sciences. Chen, J. (PI), Chu, H. (DOE PI), Robertson, G.P. (COI), Torn, M.S. (COI), Collaborators: Keenan, T., Papale, D., Reichstein, M., Wang, Y., Roy, D., **Lei, C.,** Scott, R.S., Loescher, H.W., Metzger, S., McNulty, S. $400,000.

Funding:

Michigan Math and Science Scholars Summer 2024 Program 2023
University of Michigan College of Literature, Science, and the Arts: $11,000

The University of Michigan Postdoctoral Association Conference Travel Award 2023
University of Michigan Postdoctoral Association, University of Michigan: $500

Dissertation Completion Fellowship 2020
Graduate College, College of Social Science, Michigan State University: $7,500

Graduate Office Fellowship 2020
Graduate College, Michigan State University: $1,200

The Charles P. and Linda A. Thompson Endowment for Social Science Research 2019
College of Social Science, Michigan State University: $1,000

Research Scholars Award 2019
College of Social Science, Michigan State University: $3,367

W.K. Kellogg Biological Station LTER Fall 2019 Fellowship 2019
National Science Foundation & Michigan State University: $6,500

Graduate Office Fellowship 2019
Graduate College, Michigan State University: $550

W.K. Kellogg Biological Station Graduate Teaching Assistantship 2018
W.K. Kellogg Biological Station: $9,000

Graduate Office Fellowship 2018
Graduate College, Michigan State University: $1,000

Research Scholars Award 2018
College of Social Science, Michigan State University: $5,814

Kenneth E. and Marie J. Corey Research Endowment Fund 2018
College of Social Science, Michigan State University: $1,000

W.K. Kellogg Biological Station Summer Fellowship 2018
W.K. Kellogg Biological Station & Michigan State University: $2,500

Academic Achievement Graduate Assistantship Award 2017
Graduate College, Michigan State University: $8,000

Geography Scholarship 2017
Department of Geography, Michigan State University: $250

Department of Geography Travel Fund 2017
Department of Geography, Michigan State University: $400

Graduate Student Affairs Travel Fund 2017
Associate Dean, Michigan State University: $300

Graduate College Travel Fellowship 2017
Graduate College, Michigan State University: $200

Lucius Harrison Geography Travel Fund 2016
Department of Geography, Western Michigan University: $1,000

Michigan Department of Transportation Grant Travel Fund 2015
College of Engineering, Western Michigan University: $750

Scholarship
Track & Field, Northern Michigan University: $60,000 2012-2014

Scholarship
Track & Field, Missouri State University: $36,000 2010-2011

SERVICE

Invited Panels:

Michigan State University Geography Club - Graduate Student Panel Nov 2022

Great Lakes Bioenergy Research Center (GLBRC) Graduate School Panel July 2022

Great Lakes Bioenergy Research Center (GLBRC) National Clean Energy Week 2021 Sept 2021
• https://energy.wisc.edu/events/power-plants-how-bioenergy-benefits-world

Kellogg Biological Station Undergraduate Career Panel July 2018

University Service:

Faculty Mentor 2016 - Present
National Science Foundation Research Experiences for Undergraduates
Long-term Ecological Research Program Research Experiences for Undergraduates
Michigan State University Undergraduate Research Experiences
• Faculty mentor in multiple programs for students interested in research opportunities, laboratory, and field research.

LTER Grad-Postdoc Leadership Council Mar 2023 - Present
W.K. Kellogg Biological Station Long Term Ecological Research Network
• Co-chair of executive committee aimed to provide community, professional development and networking for graduate students and research fellows at Michigan State, University of Michigan, and Kellogg Biological Station.

Rapporteur Apr 2020
LTAR Annual Science Meeting Program
• Title: “Great Plains and Florida Rangelands”
• Title: “Ecosystem Exchanges of Carbon, Water, and Energy across Diverse Agricultural Systems”

Evaluator
Mid-Michigan Symposium for Undergraduate Research Experiences Conference *July 2019*
Michigan State University, University Undergraduate Research and Arts Forum (UURAF) *Apr 2018*

Vice President June 2019 – Dec 2019
Geography Graduate Group
Michigan State University Department of Geography, Environment & Spatial Sciences

Chairperson 2018 - 2019
Geography Graduate Group Colloquium Committee
Michigan State University Department of Geography, Environment & Spatial Sciences
• Develop an annual seminar series for hosting professionals from multiple disciplines to promote professional connections for undergraduates, graduates and faculty.

Exam Proctor Sept 2016 – Aug 2022
Michigan State University
Department of Geography, Environment & Spatial Sciences

Journal Reviewer:
Editorial Review Board: The International Journal of Applied Geospatial Research (IJAGR) Sept 2023

• Journal of Geophysical Research – Biogeosciences (Group peer review)	12/2017, 02/2018
• Environmental Systems Research	02/2018
• International Journal of Applied Geospatial Research	02/2019, 12/2019
• The International Journal of River Basin Management	02/2019, 04/2019, 07/2019
• The Journal of Mountain Science	07/2019
• Ecological Indicators	02/2020, 07/2020
• International Journal of Applied Geospatial Research	07/2020
• International Journal of Applied Geospatial Research	02/2022
• International Journal of Applied Geospatial Research	09/2023

News:
GLBRC. “Cheyenne Lei wins GLBRC early career award”. May 2023, Great Lakes Bioenergy Research Center, (https://www.glbrc.org/news/cheyenne-lei-wins-glbrc-early-career-award)

GLBRC. “Jennifer L. Reed Bioenergy Science Award”. May 2023, Great Lakes Bioenergy Research Center, (https://www.glbrc.org/research/reed-bioenergy-award)

WEI. “Propelling Women in Power: Highlighting the stories of women in Research”. Wisconsin Energy Institute. October 2022, (https://energy.wisc.edu/news/podcast-breaking-barriers-building-bridges-cheyenne-lei)

GLBRC. “Bioenergy Crops Create Local Cooling That Can Increase Climate Benefit.” Great Lakes Bioenergy Research Center, Oct. 2021, https://www.glbrc.org/research/highlights/bioenergy-crops-create-local-cooling-can-increase-climate-benefit

WEI. “Power from Plants: How Bioenergy Benefits the World.” Wisconsin Energy Institute, 4 Aug. 2021, https://energy.wisc.edu/events/power-plants-how-bioenergy-benefits-world

Griffin, Mark E. “A Geographer's-Eye View with Cheyenne Lei.” Great Lakes Bioenergy Research Center, June. 2021, https://www.glbrc.org/news/geographers-eye-view-cheyenne-lei

Other Service:
Cartographic design services
Carneiro, P. A., Zimpel, C. K., Pasquatti, T. N., Silva-Pereira, T. T., Takatani, H., Silva, C. B., ... & Kaneene, J. B. (2021). Genetic Diversity and Potential Paths of Transmission of Mycobacterium bovis in the Amazon: The Discovery of M. bovis Lineage Lb1 Circulating in South America. *Frontiers in Veterinary Science*, 8. https://doi.org/10.3389/fvets.2021.630989
• Compiled geographic data, provided GIS support and cartographic design services for research.

Special Events Support Services Sept 2019- Aug 2022
Michigan State University Police & Public Safety
• Civilian law enforcement providing leadership and assistance, and assisting emergency personnel as needed during events and emergencies.

Moderator Apr 2020 – Oct 2021
FunPlus Kings Group – State of Survival
• Provide discussion topics, remove inappropriate content, answer questions, and update the platform for State of Survival official Discord consisting of 180,000 members.

Canvasser May 2016 - Aug 2016
Clean Water Action
• Mobilized the community to raise awareness on environmental and public health issues, through the use of public education and organizing.

TECHNICAL SKILLS

Unmanned Aerial Systems
Department of Geography, Environment & Spatial Sciences, Michigan State University 2017
• FAA Part 107 Drone Test Prep & Beyond (Specialization course) Remote Pilot Training
Level 1 & 2: UAS components, multi-copter control, principles of flight and hands-on flight.
- FAA Part 107 Drone Test Prep & Beyond (Specialization course) Drone to GIS
Level 1& 2: Multi-spectral processing using Pix4D, mobile GIS tools, drone data GIS processing.

Mandarin Chinese
- Conversational – Beginner
- Writing – Beginner

INTERESTS

I am an avid motorcyclist! As a certified United States Motorcycle Safety Foundation Instructor, I often teach and demonstrate the basics of motorcycle safety and riding to beginner and advanced riders. In my spare time, I love to ride, and have ridden the western Pacific coasts of Oregon and Washington, the natural beauty of the Midwestern states, to the twisty curves in North Carolina and Tennessee.