

1. How is your current research innovative and necessary?

Increasing rates of outmigration from farmland in Nepal and the broader Himalaya are reconfiguring social relationships in farming, altering land management, labor regimes, and agricultural biodiversity. With changes in who remains on the farm to manage agricultural resources, coupled with increasing globalization and international-oriented agricultural policies, farmers' responsibilities and preferences for cropping decisions are shifting. My dissertation research examines key questions at the intersection of agrarian studies and agrobiodiversity conservation. My primary research question asks: *How do changes in traditional seed systems reflect agrarian change in Nepal?* Empirically, **my objective is to produce valuable new knowledge regarding the impacts of agrarian change on indigenous farming systems and on agrobiodiversity conservation.** Specifically, I will generate new knowledge regarding land change, farming labor practices, and socially differentiated subjectivities tied to culturally significant agrobiodiversity. The outmigration of indigenous smallholders from Nepal's hinterlands alters the seed systems which conserve and use crop diversity. Farmers in the three neighboring villages of Lamjung District where I will conduct my fieldwork grow over thirty varieties of rice, many of which are used for specific cultural or agroecological reasons. Farm fields less suited to paddy production have a long history of growing finger millet, however this crop has associations with low social status and is increasingly used only for feeding animals or brewing alcohol. In the face of increased outmigration of farmers and the globalization and industrialization of agriculture, **my research is necessary to ensure that agricultural resources are conserved for future food security.** To this end, my research will assist agrobiodiversity conservation efforts to better adapt to changes in agrarian labor practices and to target conservation efforts towards those who remain on the farm to make critical farming decisions.

2. How will this research be useful to both the scientific community and society in general?

Agrobiodiversity not only provides nutritional diversity in human diets, it also contributes valuable genetic material for future plant breeding. The maintenance of crop diversity in natural environments (as opposed to gene banks) allows crops to evolve in response to natural conditions and stresses, thus promoting resilience in the face of climate change. **My project calls to attention the necessity of recognizing more marginal farm managers such as landless and semi-landless tenant farmers who play a vital role in rural agricultural land management.** Many agrobiodiversity studies tend to homogenize farmers as "smallholders"—with little or no distinction made for normative social structures such as gender, ethnicity, or caste, or for land tenure status (eg: Brush & Perales 2007; Isakson 2009). As mobility levels among individuals differ (Rao 2006), those with more restricted mobility—such as women, Dalits, and sharecroppers—may play an increasing role in smallholder farming systems. Land ownership can empower marginalized farmers with greater household decision making (Allendorf 2007; Agarwal 1994), yet in many places these groups have relatively little access to land ownership (Chombaa, et al. 2016). Conservation and development-oriented programs often direct their efforts towards existing systems of land ownership, reinforcing the inherent inequality of these systems (Chombaa, et al. 2016). Even when non-landowners are recognized as managers of agricultural landscapes, varietal preferences between these farmers and landowners are left unexamined (Zimmerer 2014). The homogenization of farmers as a group with similar motivations ignores significant cultural and agroecological differences that impact crop diversity. **My project expands agrobiodiversity scholarship through critical engagements with marginalized populations.**

3. How will this travel award contribute to your graduate research and professional goals?

This travel award will help fund the necessary fieldwork portion of my dissertation research. I have two 5-week trips to Nepal planned: one in October-November 2019 and one in March-April 2020. With the high expense of travelling to and from Nepal, securing ample funding for this project will take many sources. The EMS Centennial Award will contribute to the airfare expense of my trip to Nepal in the fall of 2019. While in Nepal I will collaborate with a local non-governmental organization, [REDACTED], to ensure that my research has value to the local residents of the villages where I will conduct my fieldwork. Building relationships with local NGOs as well as with farming communities in Nepal contributes to my long-term plan of research and collaboration projects in this district of Nepal. After graduation I plan to continue researching in Nepal; this award will help me establish and solidify research relationships in Nepal early in my career. **Additionally, the financial support this award offers will contribute to my ongoing development as a researcher, strengthening the methodological expertise that I have gained from classroom learning.**

References

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- Allendorf, T. D. (2007). Residents' attitudes toward three protected areas in southwestern Nepal. *Biodiversity and Conservation*, 16(7), 2087.
- Brush, S. B., & Perales, H. R. (2007). A maize landscape: Ethnicity and agro-biodiversity in Chiapas Mexico. *Agriculture, Ecosystems & Environment*, 121(3), 211-221.
- Chombaa, Susan, Juliet Kariuki, Jens Friis Lund, and Fergus Sinclair. (2016). Roots of inequity: How the implementation of REDD+ reinforces past injustices. *Land Use Policy*, 50: 202–213.
- Isakson, S. R. (2009). No hay ganancia en la milpa: the agrarian question, food sovereignty, and the on-farm conservation of agrobiodiversity in the Guatemalan highlands. *The Journal of Peasant Studies*, 36(4), 725-759.
- Rao, Nitya. (2006). Land rights, gender equality and household food security: Exploring the conceptual links in the case of India. *Food Policy*, 31: 180-193.
- Zimmerer, K. S. (2014). Conserving agrobiodiversity amid global change, migration, and nontraditional livelihood networks: the dynamic uses of cultural landscape knowledge. *Ecology and Society*, 19(2), 1.

Budget and Justification

The data collection for my dissertation research consists of two five-week trips to Nepal. The two trips are necessary to coincide with seasonal fluctuations in labor as well as to collect time-sensitive data regarding harvest quantities and household food supply after winter. I will collect data in Kathmandu, Pokhara, and Lamjung District. I will base my research from Kathmandu, where I will conduct archival research at the Central Bureau of Statistics and conduct interviews with NGOs working on issues of social justice pertaining to Dalit and landless people. The majority of my fieldwork will take place in the midhill district of Lamjung. It is fairly difficult to access this area, making travel time consuming and communication difficult. I will also conduct interviews with key stakeholders and archival research at [REDACTED] office in Pokhara. I drafted the following budget for the cost of these two trips to Nepal.

Travel to and within Nepal ¹	\$ 5,400
Research assistant ²	\$ 900
<u>Per diem living expenses³</u>	<u>\$ 3,250</u>
Total funding needed	\$ 8,550

The budget outlined above is based on the following:

1. Two round-trip airfares to Nepal from [REDACTED] my place of residence (\$2,000 * 2 = \$4,000). The length of this journey combined with connection times necessitates overnight airport hotel stays in each direction (\$150 * 4=\$600). I have also included one round trip airfare from Kathmandu to Pokhara (\$300), and funding for bus and taxi transport while in Nepal (\$500).
2. I plan to hire a research assistant for my fieldwork in Lamjung district. This assistant will help with language and with navigating culturally sensitive issues of caste. This item is based on the rate I paid last time I was in Nepal (\$15/day * 60 days = \$900) for an assistant with Master's level training in environmental sciences. Additional funding is necessary to cover the assistant's costs of travel between Kathmandu and Lamjung and per diem expenses while staying in Lamjung (\$10/day * 60 days = \$600). The per diem rate is based off of 2014-2015 cost of researching in Lamjung. The per diem rate varies by location within Lamjung but has been averaged for simplification (variations include \$20/day hotel room & board in Besisahar to \$5/day room & board with farmers in Ghanpokhara).
3. Per diem living expenses are based off of past experience in Nepal (\$325/week * 10 weeks = \$3,250). This includes funding for lodging in Kathmandu, lodging expenses while in Pokhara and Lamjung as well as research incidentals (such as SIM card, internet expenses, research materials, etc.). I will need to maintain lodging in Kathmandu while conducting fieldwork in Lamjung as I cannot bring all of my research material with me into the field for interviews.

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Education

The Pennsylvania State University, University Park, PA

Expected 2020 PhD in Geography

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Cornell University, Ithaca, NY

Nepali Language Intensive Summer Program, 2018

Iowa State University, Ames, IA

MS in Sustainable Agriculture

MCRP in Community & Regional Planning

Davidson College, Davidson, NC

BA in French Literature

Research Experience

2017

Research Assistant, Penn State University, Nepal

Project Title: "Seed Projects and Landscape." Sourced funding and conducted five weeks of field work in Jumla, Nepal. Developed and coordinated local partnerships to facilitate research; conducted interviews and participatory mapping projects with farmers participating in seed projects which promote traditional crop varieties.

2014-2015

Independent Researcher, Fulbright Student Scholar, Nepal

Project Title: "Gendered Barriers to Rice Diversity in Nepal's Marketplace." Completed nine months of qualitative research for thesis project related to agrobiodiversity and barriers to varietal-rich markets. Conducted in-depth interviews & household surveys; hired and trained research assistants; managed research budget.

Relevant Work Experience

2016-2019

Teaching, Penn State University, State College, PA

Lead Instructor: Future of Food, Fall 2017, 2018

Courses Assisted: Geographic Perspectives on Sustainability and Human-Environment Systems, Spring 2018, 2019; Economic Geography, Spring 2017; The American Scene, Spring 2017; Human Use of the Environment, Fall 2016

2015-2016

General Assistant, Iowa State University, Ames, IA

Collaborate on Iowa State Freshmen Learning Communities' service-learning based STEM research project. Responsible for coordinating and planning neighborhood engagement in Capitol East neighborhood.

Presentations and Publications

Presentations

- 2017 "Khana khana bhayo (Have you eaten)? Traditional rice varieties, outmigration, and land tenure in Nepal's midhills" American Association of Geographers Conference, Boston, MA
- 2015 "Traditional rice varieties, market barriers, and social landscapes in Nepal's midhills." Annual South Asia Conference, Madison, WI
- 2015 "Have you eaten? Market barriers to rice diversity in Nepal." South and Central Asia Fulbright Conference, Hyderabad, India
- 2014 "Capitol East & Capitol Park Neighborhood Plan Review and Petition for Approval." Presented at city meetings of the following: Des Moines Plan & Zoning Commission; Neighborhood Revitalization Board; Polk County Board of Supervisors; Des Moines City Council.

Non-peer Reviewed Publications

- 2017 [REDACTED] [Review of the book Handbook of the International Political Economy of Agriculture and Food, edited by Alessandro Bonanno and Lawrence Busch] Agriculture and Human Values. (DOI: 10.1007/s10460-017-9841-5)
- 2014 [REDACTED]
[REDACTED] "Capitol Park 2014 Neighborhood Plan." Iowa: City of Des Moines. *All authors participated equally.

Honors & Awards

National Awards

- 2018 Foreign Language and Area Studies Fellowship for Nepali Language Study, Cornell University
- 2017-2018 Foreign Language and Area Studies Fellowship for South Asian Studies and Hindi Language Study, Penn State
- 2017 Best Oral Presentation Landscape Subgroup, American Association of Geographers Conference, Boston, MA
- 2014-2015 Fulbright Student Scholar, Nepal

University Honors & Funding

- 2018 Penn State Whiting Indigenous Knowledge Student Research Award (\$1500)
- 2017 Penn State Center for Landscape Dynamics Graduate Award (\$1500)
- 2015-2016 ISU Alice Yvonne Fuhrmann Graduate Scholarship (\$1500)
- 2014, 2015 ISU Dean of Agriculture Global Funding Award (\$1000)
- 2014 ISU Graduate Student Travel Award for Study in Sustainable Livelihoods (\$4000)

Affiliations

Regional Affiliations

- 2019-Present The Association for Nepal and Himalayan Studies
- 2016-Present American Association of Geographers
- 2012-2015 Ark of Taste Regional Committee (Southwest/Mountain region), Slow Food USA
- 2009-2011 Carbondale Community Oven, founding board member wood fired oven

University Affiliations

- 2016-Present Supporting Women in Geography Graduate Club, Penn State
- 2017-2018 PSU Graduate Representative for EMS
- 2012-2016 ISU Sustainable Agriculture Student Association (Outreach Coordinator, 2013-14)
- 2012-2014 ISU AgArts, Secretary