PhD position announcement at the University of Colorado

PhD Position announcement
Three years of funding is available to enroll in the PhD program in Environmental Studies Program (www.colorado.edu/envs) at the University of Colorado Boulder (CU), beginning in August 2018. This includes tuition and stipend for each academic year (mid-Aug through April). The PhD student will be involved in a large, interdisciplinary project funded by the National Science Foundation, “Sustainable Communities & Gold Supply Chains: Integrating Responsible Engineering & Local Knowledge to Design, Implement & Evaluate Sustainable Artisanal Mining in Latin America.” The student is expected to contribute to the project execution, travel internationally, and conduct fieldwork in Peru and Colombia. S/he will develop their PhD dissertation research focused on the human dimensions of vulnerability and land use and land-cover change related to artisanal and small-scale gold mining (ASGM), with the exact topic to be developed in consultation with the advisor and project team. The successful applicant should have a strong interest in human-environment interactions, and interest and ability to work in interdisciplinary teams (that include engineers as well as social scientists), a strong foundation in social and geographical sciences, and experience with statistical modelling. A good knowledge of Spanish and ability to work with rural communities are strongly recommended. Applicants with a Master’s degree and/or relevant professional experience are encouraged to apply. This project brings together scientists and practitioners through international partnerships with CU, Colorado School of Mines, the United States Air Force Academy, and scholars from Peru and Colombia. Given the interdisciplinary nature of the broader project, we are particularly interested in candidates with an interdisciplinary background as well as willingness to conduct participatory field research in South America. The student will be mentored directly by Dr. Joel Hartter and will work closely with Dr. Colleen Scanlan Lyons and a team of researchers, students, and practitioners from the US, Colombia and Peru. It is expected that their individual projects will require them to spend extensive periods in one (or a combination) of the two countries. Willingness to engage with local communities, social organizations, mining companies, government agencies, and a range of stakeholders is required. During his/her studies, the student will also develop strong ties to the Institute for Behavioral Sciences, the Governors’ Climate and Forests Task Force, and the Laboratory for Energy and Environmental Policy innovation.

Note: Funding at this time is only for 3 years. Often PhD studies take more than 3 years to complete. While support beyond the third year is not guaranteed, the advisor will make every effort to find though grants, TAships, or other means.

Qualifications

- The candidate will have an academic background/degree(s) in Environmental Studies/Science, Geography, Ecology, Engineering, Sociology, Anthropology, Psychology, or Behavioral Economics, or other relevant degrees.
- Master’s degree and/or relevant professional experience.
• Strong quantitative and analytical skills are a requirement for this position. Experience in mixed methods approaches and qualitative data collection and analysis are preferred.
• Experience with geospatial tools and analysis, including GIS, and the ability to incorporate qualitative data into quantitative analyses.
• Interest in human-environment interactions related to mining, development, land use, and conservation.
• Ability to write grants, write scientific papers.
• Fluency in Spanish and English (written and spoken)
• Ability to do fieldwork, especially in rural communities, for at least 3 months in Colombia and/or Peru.
• A collegial person who gets along with people from different cultural backgrounds.

Preferred Qualifications

• Satellite imagery acquisition, processing and analysis
• Strong statistical modelling competency
• Experience in social science methods
• Proficiency in R and/or Python
• Interest in mentoring undergraduate engineering students in projects related to community development
• Professional and/or academic experience with field work and travel in Latin America
• Self-starter, can work independently, strong communicator, team player
• Ability to interact and facilitate conservations with a variety of audiences – farmers, miners, engineers, government officials, NGO practitioners, and scientists

Are you interested?
If you are considering applying, please send the following: 1) a curriculum vitae; 2) statement of your research and professional interests, including your interests and qualifications for the research project described below, as well as why you would like to enroll in the ENVS program, and why you would like to obtain a PhD; 3) GRE scores and percentiles; 4) TOEFFEL scores where relevant; and 5) copies or links to any publications (e.g., peer reviewed, professional reports, conference proceedings) if relevant to Dr. Joel Hartter (joel.hartter@colorado.edu).

Due Dates
Full graduate school applications to CU are due December 1, 2017. More information on application to the program here. I encourage contact with me well ahead of the application deadline. I prefer to discuss research interest with potential graduate students in person, over the phone or via Skype before making decisions.

About the Environmental Studies Program: The Environmental Studies Program at CU-Boulder is a hub for facilitating interdisciplinary collaboration in environment and sustainability. Environmental Studies courses integrate the academic divisions of natural science, social science, and humanities, providing skill and knowledge applicable to the pursuit of solutions to environmental challenges faced globally, nationally, regionally, and locally. The program
provides interdisciplinary academic training for undergraduate and graduate students, guidance for students with career aspirations in environment and sustainability venues, promotes diverse professional education experiences, fosters fundamental and applied research, forms meaningful connections with communities beyond the university, and integrates innovative, interdisciplinary programs unified by the themes of environmental research.

About the University of Colorado and City of Boulder: CU Boulder's innovative academic programs, hands-on opportunities and rigorous course work will prepare you for a complex global society. While interacting with our faculty, which includes Nobel laureates, MacArthur "Genius Grant" fellows, U.S. Professor of the Year awardees and National Medal of Science winners, you'll develop a broad understanding of the world, strong leadership skills and an enhanced ability to think critically. Live in spectacular surroundings and learn in a campus environment full of extraordinary opportunities.

Boulder is located 30 minutes northwest of Denver, nestled in the foothills where the rolling plains meet the Colorado Rocky Mountains. The City of Boulder sits 5,430 feet above sea level and enjoys over 300 days of sunshine a year. Boulder offers something for everyone, from hiking or biking through our 300 miles of trails and 45,000 acres of open space and nearby world class skiing, to people watching at an outdoor cafe or microbrewery on Pearl Street, to catching your favorite local band at the Fox Theater. It was also ranked #1 in the Bloomberg Brain Concentration Index in 2017.

About the project: This project brings together cutting edge engineering, social science scholarship, and community development to make artisanal and small scale gold mining (ASGM) more sustainable. ASGM is common in mineral rich developing countries. This type of mining produces about 30% of the gold in the world used in jewelry, finances, electronics, aerospace, and medicine. ASGM causes large-scale deforestation, air/water contamination, and chronic human diseases, especially from the mercury used to process the ore. Despite these impacts, ASGM is a critical livelihood strategy for millions of people worldwide. Existing efforts to introduce sustainable ASGM practices, primarily through mercury-free processing technologies, have not achieved long-term sustainability because they are believed by miners to be inefficient or uneconomical. This project will break this trend by educating US engineers to co-design, implement and evaluate sustainable and culturally appropriate ASGM technologies and practices with miners and affected communities in Colombia and Peru. For the first time, US engineering faculty and students will work with Colombian and Peruvian faculty, students, and mining communities to develop improved technologies and techniques, coupled with social organizations, to make ASGM cleaner, safer, and more sustainable. While tackling this complex international problem, this project will contribute to developing a global US engineering workforce.

ASGM systems are simultaneously social, technical, and ecological, involving miners and communities, geologic deposits, ecosystems, technologies, and scientific and engineering expertise. This project will break new scholarly ground by developing an integrated, community-centered approach to discovering how the multiple dimensions of ASGM
production systems influence one another, in order to design, implement, evaluate, and ensure long-term sustainability of ASGM practices. Using a combination of social science, human-centered design, and engineering methods, this project will make at least 4 key scholarly contributions: 1) identifying the local knowledge that miners and affected communities hold on mercury exposure, on techniques for minimizing this exposure, and on environmental remediation strategies; 2) advancing engineering and social science research on the role of local knowledge in participatory environmental monitoring; 3) widening the ASGM social science and engineering literatures to include remediation; 4) testing criteria for Engineering for Sustainable Community Development in the real world. This project will also test how engineering students from two different educational models (training in humanitarian engineering vs. expanded curriculum in the humanities & social sciences) compare in how they understand the social context of engineering and how they work with non-US peers and communities. Through the project’s affiliation with the Alliance for Responsible Mining, the Governors’ Climate and Forests Task Force, and the networks of its Advisory Board, the project can expand its impact beyond Colombia and Peru into other countries as well as beyond gold mining into other minerals like cobalt.

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Masters of the Environment: [www.colorado.edu/menv](http://www.colorado.edu/menv)

Environmental Studies Program: [www.envs.colorado.edu](http://www.envs.colorado.edu)

Personal website: [www.jhartter.weebly.com](http://www.jhartter.weebly.com)

Communities and Forests in Oregon (CAFOR) Project: [www.cafor.weebly.com](http://www.cafor.weebly.com)
Population, Environment, & Climate in the Albertine Rift (PECAR) Project:
www.albertinerift.weebly.com