

AREIDY BELTRAN-PEÑA

Earth System Scientist

areidy@berkeley.edu ▪ areidy.com ▪ (626) 465-5417 ▪ Menlo Park, CA

EDUCATION

UNIVERSITY OF CALIFORNIA BERKELEY	Berkeley, CA
<i>Ph.D. Environmental Science Policy and Management</i>	2018 - 2022
<ul style="list-style-type: none">Focus on: Climate Adaptation and Impacts, Earth System Modelling, and Data ScienceDesignated Emphasis in Development Engineering	
<i>Masters in Earth and Planetary Science</i>	2016 - 2017
<ul style="list-style-type: none">Emphasis on Climate Mitigation Solutions, and Renewable Energy Systems to reach net zero	
<i>Bachelors in Environmental Earth Science</i>	2010 - 2015
<ul style="list-style-type: none">Minor in Global Poverty and Practice	

ACADEMIC RESEARCH EXPERIENCE

LAWRENCE BERKELEY NATIONAL LABORATORY	Berkeley, CA
<i>Graduate Student Researcher</i>	2022 - Present
<ul style="list-style-type: none">Working with Dr. Alan Rhoades at the Earth and Environmental Science Area on hydroclimate research using the Energy Exascale Earth System Model and OPENET to project future crop production potential in California in a low-to-no-snow future funded by the U.S. Department of Energy.	
CARNEGIE INSTITUTION FOR SCIENCE, DEPARTMENT OF GLOBAL ECOLOGY	Stanford, CA
<i>Visiting PhD Student</i>	2022 – Present
<ul style="list-style-type: none">Created an integrated assessment model to evaluate the future of food security in Africa under a 3°C warmer climate funded by the Ford Foundation Dissertation Fellowship from the National Academies of Sciences, Engineering, and Medicine.	
NASA JET PROPULSION LABORATORY	Pasadena, CA
<i>NASA Center for Climate Science Summer School</i>	Summer 2019
<ul style="list-style-type: none">Learned to use satellite observations to advance climate models through lectures and group projects. Worked on a case study that focused on India's depleting water storage using GRACE satellite data.	

ADDITIONAL ACADEMIC EXPERIENCE

TUCK SCHOOL OF BUSINESS AT DARTMOUTH COLLEGE	Hanover, NH
<i>Tuck Business Bridge pre-MBA Program</i>	Summer 2017
<ul style="list-style-type: none">Participated in a highly selective 4-week program taught by MBA faculty, providing an in-depth study of marketing, management, finance, microeconomics, accounting, and strategy.Performed a team-based valuation analysis for Cinemark Holdings, Inc., which included financial, marketing, and strategic assessments, a DCF analysis, and a final presentation to industry executives and faculty	
TAVTECH GLOBAL FELLOWSHIP	Tel Aviv, Israel
<i>Computer Programming and Entrepreneurship Training Program</i>	Dec 2016
<ul style="list-style-type: none">Applied coding and entrepreneurship trainings to design a startup business addressing food waste, created a pitch deck and presented the value proposition to venture capitalists.	
COLUMBIA UNIVERSITY SCHOOL OF INTERNATIONAL AND PUBLIC AFFAIRS	Paris, France
<i>Alliance Summer School in Science and Policy</i>	Summer 2016
U.S. DEPARTMENT OF STATE- INDONESIA CRITICAL LANGUAGE SCHOLARSHIP PROGRAM	Malang, Indonesia
<i>Indonesian Language Scholar, Study Abroad</i>	Summer 2015
U.S. DEPARTMENT OF STATE- BENJAMIN A. GILMAN INTERNATIONAL SCHOLARSHIP	New Delhi, India
<i>Hindi Language Scholar; Study Abroad</i>	Fall 2013

PROFESSIONAL WORK EXPERIENCE

ENVIRONMENTAL RESOURCES MANAGEMENT	San Francisco, CA
<i>Project Scientist- Environmental Consultant II</i>	Feb 2018 – Jul 2019
<ul style="list-style-type: none">Performed phase I and phase II environmental site assessments and developed follow-up corrective actions to ensure compliance with federal, state, and local regulations.Prepared the pollution prevention permit compliance program for the Caltrain system under the Water Resources Control Board Phase II Small Municipal Separate Storm Sewer Systems (MS4) Permit.	

UNIVERSITY OF CALIFORNIA OFFICE OF THE PRESIDENT

Carbon Neutrality Initiative Systemwide Fellow, Office of Energy and Sustainability

Oakland, CA
AY 2018 – 2019 &
AY 2016 – 2017

- Spearheaded the design of Sustainability Learning Objectives by conducting stakeholder analyses and collaborated with the UC Global Climate Leadership Council in support of the UC-wide goal of achieving carbon neutrality by 2025.

BERKELEY INNOVATIVE SOLUTIONS CONSULTING

Graduate Student Consultant

Berkeley, CA
Fall 2016

- Performed in-depth market assessments and policy research for Fornax, a chemical engineering start-up company, and contributed to a proposal for a U.S. Department of Energy grant.

INTERTEK-PROFESSIONAL SERVICE INDUSTRIES

Environmental/Geotechnical Staff Scientist

Oakland, CA
Sep 2015 – Aug 2016

- Conducted due diligence investigations through in-depth quantitative analysis including but not limited to – contamination investigations, site characterization, remediation services, groundwater monitoring programs, storage tank services, and compliance permitting for hazardous materials.
- Performed preliminary geotechnical investigations; earthwork, foundation, and slope evaluation; seismic hazard analysis; completed laboratory testing of soils; and indoor air quality surveys.

UC BERKELEY BLUM CENTER FOR DEVELOPING ECONOMIES

Global Poverty and Practice Minor Academic Peer Advisor

Berkeley, CA
AY 2014 – 2015

- Advised multiple students per week regarding GPP Minor requirements; organized and led publicity events; managed the GPP Minor social media pages; and recruited 131 students to the minor.

TEACHING ACTIVITIES

UNIVERSITY OF CALIFORNIA BERKELEY

Graduate Student Instructor

Berkeley, CA

- **Introduction to Culture and Natural Resource Management** (ESPM 50AC). Lectured and graded for a 6-week long course with ~326 students of which I was responsible for 70. *Summer 2020*
- **Introduction to Environmental Research Methods** (ESPM 100ES). Lectured, graded, and lesson planned for a 4-month long course with ~60 students. *Spring 2019*

DEVELOPMENT PROJECTS

UC BERKELEY BIG IDEAS PROGRAM

Pachamama Project Team Lead

Chiapas, Mexico
Summer 2014

- Collaborated with Fundación Cántaro Azul to identify potential improvements to the UV water filtration system needed to increase access to clean water, sanitation, and hygiene in rural communities.

COMMUNITY WATER CENTER

Undergraduate Intern

Visalia, CA
Spring 2014

- Monitored water quality (for nitrate contamination) of 40 households in Visalia, CA dependent on domestic wells for drinking water and providing residents with real-time evidence regarding their household water quality.

PUBLICATIONS

- **Beltran-Peña A**, Rosa L, D'Odorico P (2020). Global food self-sufficiency in the 21st century under sustainable intensification of agriculture. *Environmental Research Letters*.
- Rosa L, Chiarelli DD, Sangiorgio M, **Beltran-Peña A**, Rulli MC, D'Odorico P & Fung I (2020). Potential for sustainable irrigation expansion in a 3C warmer climate. *Proceedings of the National Academy of Sciences*.
- Jenkins W, Rosa L, Schmidt J, Band L, **Beltran-Peña A**, Clarens A, Doney S, Glassie A, Quinn J, Rulli MC, Shobe W, Szeptycki L, D'Odorico P. Values-based scenarios of water security: rights to water, rights of water, and commercial water rights (2021). *BioScience*, 20, pp. 1-14.
- **Beltran-Peña A** and D'Odorico P (2022). The future of food security in Africa under climate change. *Under Revision*.
- **Beltran-Peña A**, Rhoades A., Giroto M., D'Odorico P. Adapting water-energy-food systems to a low-to-no-snow future under climate change. (*In preparation*)
- **Beltran-Peña A**, Cowherd M., Marks J., Giroto M., D'Odorico P. Assessing aquifer recharge potential in California's Central Valley based on Sierra Nevada rain and snow runoff patterns. (*In preparation*)

SELECTED PRESENTATIONS

- **Beltran-Peña A** (2022) "Evaluating the hydrological impacts of climate change on food systems through integrated assessment models", *Invited Seminar*, Carnegie Institution for Science, Stanford, CA.
- **Beltran-Peña A** (2021) "The future of food security in Africa under climate and societal change", *Poster Presentation*, American Geophysical Union, Online.

- **Beltran-Peña A** (2019) “Climate change and the global water-energy-food nexus”, Oral Presentation, United Nations Framework Convention on Climate Change Conference of Parties 25, Madrid, Spain. **Organized a 2-hour side-event in the Italian Pavilion.**
- **Beltran-Peña A** (2019) “Evaluating the Effects of Climate Change and Sustainable Irrigation Intensification on Global Food Security”, *Oral Presentation*, American Geophysical Union, San Francisco, CA.
- **Beltran-Peña A**, Liu Y, Sadeghi M, Biswas N, Bartkowiak P (2019) “An Investigation of Land Water Storage Variability as a Function of Climate Change and Human Activities Over India Using Satellite Remote Sensing”, *Oral Presentation*, NASA Jet Propulsion Laboratory Center for Climate Sciences, Pasadena, CA.
- **Beltran-Peña A** (2017) “The Implications of Geologic Properties and Seismic Activity in the Arctic Region on Undiscovered Oil and Gas Field Exploration”, *Oral Presentation*, UC Berkeley Department of Earth and Planetary Science, Berkeley, CA.

RESEARCH INTERESTS

- Climate Mitigation and Adaptation, Net-Zero Emissions, Carbon Capture and Removal, Water-Energy-Food Nexus, Global Environmental Change, Climate Change Impacts, Sustainability, Hydrology, Food Security, Land - Atmosphere Interactions, Earth Science, Satellite Remote Sensing, Environmental Engineering, Data Science, Development Engineering, Land-Use Change, Sustainable Agriculture

SKILLS

- Fluent in English (native), Spanish (native), Italian (fluent), and French (intermediate).
- Experienced with Microsoft Office Suite, Salesforce, website design, ArcGIS Pro, Google Earth Engine, Python, and Tableau

AWARDS AND FELLOWSHIPS

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| ▪ U.S. Department of Energy Office of Science Graduate Student Research Program | 2022 – 2023 |
| ▪ Ford Foundation Dissertation Fellowship | 2021 – 2022 |
| ▪ Foreign Language and Area Studies (FLAS) Fellowship for Italian Language | 2020 – 2021 |
| ▪ UC Berkeley Institute of European Studies Grant for the Study of Italian Language and Culture | 2020 – 2021 |
| ▪ NSF Innovations in Food Energy and Water Systems (InFEWS) Fellowship | 2019 – 2020 |
| ▪ The National GEM Consortium University Fellow | 2018 – 2019 |
| ▪ UC Berkeley Department of Environmental Science Policy and Management Starter Grant | 2018 – 2019 |
| ▪ University of California Graduate Opportunity Masters Fellowship | 2016 – 2017 |
| ▪ University of California Office of the President Carbon Neutrality Initiative Fellow | 2016 – 2017 |
| ▪ Hispanic Scholarship Fund Scholar | 2017, 2021, & 2022 |
| ▪ U.S. Department of State Critical Language Scholarship | 2015 |
| ▪ Educational Opportunity Program Achievement Award Scholarship Recipient | 2015 |
| ▪ Cal New Experiences for Research and Diversity in the Sciences (Cal NERDS) Fellow | 2012 – 2015 |
| ▪ UC Berkeley Rudd Family Foundation Big Ideas Third Place Contest | 2014 |
| ▪ IES Abroad Photo Contest 1 st Place Winner | 2014 |
| ▪ Institute of International Education 5 th Annual Photo Contest Winner | 2014 |
| ▪ U.S. Department of State Benjamin A. Gilman International Scholarship | 2013 |
| ▪ International Education Abroad Travel Scholarship Recipient | 2013 |
| ▪ University of California Education Abroad Program Scholarship Recipient | 2013 |
| ▪ Blum Center for Developing Economies Global Poverty and Practice Fellowship | 2013 |
| ▪ National Science Foundation California Alliance for Minority Participation Fellowship | 2012 – 2013 |
| ▪ UC Berkeley’s Earth and Planetary Science Department -Charles H. Ramsden Scholarship | 2012 - 2015 |
| ▪ Award for Outstanding Participation and Service to the Community by The Native American Recruitment and Retention Center and The American Indian Science and Engineering Society | 2012 |
| ▪ Ronald McDonalds House of Charities HACER Scholarship Recipient | 2010 |
| ▪ President of the United States Award for Educational Excellence (signed by President Obama) | 2010 |
| ▪ U.S. Department of Treasury National Financial Capability Challenge Top Scorer Award | 2010 |
| ▪ California Scholarship Federation Life Membership and Highest Honor for Superior Scholarship and Service | 2010 |
| ▪ Academic Excellence First Honors Bishop Amat Memorial High School | 2010 |
| ▪ International Baccalaureate Diploma Recipient | 2010 |
| ▪ First Honors French 1, French 2, French 3, and IB French, AP Spanish | 2010 |

SELECTED MEDIA COVERAGE

- Youth 4 Nature Blog. “*Perspectives in Nature and Climate*”. June 23, 2021
<https://www.youth4nature.org/blog/ariedy-perspectives-in-nature-climate>
- The Daily Californian. “*UC Berkeley doctoral candidate awarded 2 national fellowships*”. June 8, 2021
<https://www.dailycal.org/2021/06/08/uc-berkeley-doctoral-candidate-awarded-2-national-fellowships/>
- UC Berkeley Rausser College of Natural Resources. “*Areidy Beltran awarded two national fellowships*”. June 2, 2021
<https://nature.berkeley.edu/news/2021/06/areidy-beltran-awarded-department-energy-scgsr-fellowship>
- U.S. Department of Energy. “*DOE’s Office of Science Graduate Student Research (SCGSR) Program selects 78 outstanding U.S. graduate students*”. April 29, 2021
<https://www.energy.gov/science/articles/does-office-science-graduate-student-research-scgsr-program-selects-78-outstanding>

DIVERSITY OUTREACH

- **Beltran-Peña A** (2022) “STEM Careers and Pathways: Perspectives of First-gen Professionals Leading the Way”, *Alumni Panel*, Educational Opportunity Program STEM, UC Berkeley, Berkeley, CA. **Invited.**
- **Beltran-Peña A** (2020) “First-Gen Journey to a PhD Pathway: Mitigating the Impacts of Climate Change”, *Oral Presentation*, Cal New Experiences for Research and Diversity in the Sciences, Berkeley, CA. **Invited.**
- **Beltran-Peña A** (2020) “Oportunidades Professional Development Summit Graduate Panel”, *Graduate Student Panel*, Chicano Latino Youth Leadership Project, Online. **Invited.**
- **Beltran-Peña A** (2017) “Keys to Success and Survival in Graduate School”, *Guest Speaker*, Spring Northern California Forum for Diversity in Graduate Education, UC Merced, CA. **Invited.**

PRESENTATIONS (EXTENDED)

- **Beltran-Peña A** (2021) “Adaptation Pathways Toward Zero Hunger and Malnutrition in Africa under 3°C”, *Poster Presentation*, Ford Foundation Conference, Online. **Invited.**
- **Beltran-Peña A** (2020) “A Global Assessment of Future Food Security in the 21st Century”, *Oral Presentation*, Berkeley Energy and Resources Collaborative Symposium, Berkeley, CA. **Invited.**
- **Beltran-Peña A** (2020) “Hydrological impacts on food security in the 21st century under societal and climate changes”, *Oral Presentation*, UC Berkeley Climate Impacts Research Hub, Berkeley, CA. **Invited.**
- **Beltran-Peña A**, Davis A, Moore G, Putra G, Wu Y, Zhong V (2018) “Technical and Business Model Analysis of VIVIR Environmental Toolbox for Fecal Sludge Management in India”, *Oral Presentation*. UC Berkeley Haas School of Business, Berkeley, CA.
- **Beltran-Peña A** (2017) “Financial Valuation of Cinemark Holdings Inc”, *Oral Presentation*, Tuck School of Business at Dartmouth College, Hanover, NH.
- **Beltran-Peña A** (2017) “Introduction of UC Sustainability Learning Outcomes”, *Poster Presentation*, California Higher Education Sustainability Conference, UC Santa Cruz, Santa Cruz, CA.
- **Beltran-Peña A** (2012) “Safety Evaluation of the Berkeley-Darfur Stove Using the Iowa State University Stove Safety Testing Protocol”, *Poster Presentation*, Society for the Advancement of Chicanos and Native Americans in