

Clark L Gray

308 Carolina Hall
 Department of Geography & Environment
 University of North Carolina at Chapel Hill
 Campus Box 3220, Chapel Hill, NC 27599
 cgray@email.unc.edu

EDUCATION

- Ph.D. Geography, University of North Carolina at Chapel Hill, May 2008**
 Dissertation: Out-Migration and Rural Livelihoods in the Southern Ecuadorian Andes
- B.S. Biology, University of North Carolina at Chapel Hill, May 1999**
 Awarded with Highest Distinction and Highest Honors

ACADEMIC POSITIONS

University of North Carolina at Chapel Hill

Director of Graduate Studies, Department of Geography & Environment (GEOG), July 2022-present
 Professor, Department of Geography & Environment, January 2022-present
 Associate Professor, Department of Geography & Environment, January 2017-December 2021
 Faculty Fellow, Carolina Population Center (CPC), June 2011-present
 Joint Faculty, Environment, Ecology and Energy Program (ENEC), January 2011-present
 Assistant Professor, Department of Geography & Environment, January 2011-December 2016

Postdoctoral

Postdoctoral Associate, Department of Economics, Duke University, August 2009-December 2010
 Postdoctoral Scholar, Carolina Population Center, UNC-Chapel Hill, April 2008-July 2009

HONORS

2017 Research Excellence Award, Population Specialty Group of the Association of American Geographers
 2010 Nystrom Dissertation Award, Association of American Geographers

REFEREED JOURNAL ARTICLES

* Student or postdoctoral mentee

1. Brian Thiede, Abbie Robinson, and Clark Gray. (In press). Climatic variability and internal migration in Asia: Evidence from big microdata. *Population and Development Review*.
2. Clark Gray and Brian Thiede. (2024). Temperature anomalies undermine the health of reproductive-age women in low and middle-income countries. *Proceedings of the National Academy of Sciences* 121(11): e2311567121.
3. Clark Gray and Maia Call*. (2023). Heat and drought reduce subnational population growth in the global tropics. *Population and Environment* 45: 6. [[IPUMS Award for Best Published Research using Spatial Data](#)]
4. Valerie Mueller, Camila Bernal, Clark Gray and Karen Grepin. (2023). The gendered consequences of COVID-19 for internal migration. *Population Research and Policy Review* 42:60.
5. Alfredo Rojas*, Clark Gray and Colin West. (2023). Measuring the environmental context of child growth in Burkina Faso. *Population and Environment* 45: 3.

6. Sandeep Kandikuppa* and Clark Gray. (2022). Climate change and household debt in rural India. *Climatic Change* 173: 20.
7. Heather Randell, Clark Gray, and Elizabeth Shayo. (2022). Climatic conditions and household food security: Evidence from Tanzania. *Food Policy* 112: 102362.
8. Brian Thiede, Heather Randell and Clark Gray. (2022). The childhood origins of climate-induced mobility and immobility. *Population and Development Review* 48(3): 767-793. [IPUMS International Award for Published Research]
9. Kathryn McMahon* and Clark Gray. (2021). Climate change, social vulnerability and child nutrition in South Asia. *Global Environmental Change* 71: 102414. [IPUMS Global Health Award for Best Paper by a Graduate Student]
10. Khristopher Nicholas*, Leah Campbell*, Emily Paul*, Gioia Skeltis*, Wenbo Wang*, and Clark Gray. (2021). Climate anomalies and childhood growth in Peru. *Population and Environment* 43: 39–60.
11. Maia Call* and Clark Gray. (2020). Climate anomalies, land degradation and rural out-migration in Uganda. *Population and Environment* 41: 507–528.
12. Clark Gray, Douglas Hopping*, and Valerie Mueller. (2020). The changing climate-migration relationship in China, 1989-2011. *Climatic Change* 160: 103-122.
13. Clark Gray and Richard Bilsborrow. (2020). Stability and change within indigenous land use in the Ecuadorian Amazon. *Global Environmental Change* 63: 102116.
14. Valerie Mueller, Clark Gray, Sudhanshu Handa and David Seidenfeld. (2020). Do social protection programs foster short-term and long-term migration adaptation strategies? *Environment and Development Economics* 25: 135-158.
15. Valerie Mueller, Clark Gray, and Douglas Hopping*. (2020). Climate-induced migration and unemployment in middle-income Africa. *Global Environmental Change* 65: 102183. [IPUMS International Award for Published Research]
16. Valerie Mueller, Glenn Sheriff, Xiaoya Dou and Clark Gray. (2020). Temporary migration and climate variation in Eastern Africa. *World Development* 104704.
17. Heather Randell, Clark Gray, and Kathryn Grace. (2020). Stunted from the start: Early life weather conditions and child undernutrition in Ethiopia. *Social Science and Medicine* 113234.
18. Victoria Salinas Castro*, Richard Bilsborrow and Clark Gray. (2020). Cambios socioeconómicos en el siglo XXI en poblaciones indígenas Amazónicas: Retos actuales. *Estudios Demográficos y Urbanos* 35(1): 83-116.
19. Brian Thiede and Clark Gray. (2020). Characterizing the indigenous forest peoples of Latin America: Results from census data. *World Development* 104685.
20. Brian Thiede and Clark Gray. (2020). Climate exposures and child undernutrition: Evidence from Indonesia. *Social Science and Medicine* 265: 113298.
21. Nathalie Williams and Clark Gray. (2020). Spatial and temporal dimensions of weather shocks and migration in Nepal. *Population and Environment* 41: 286–305.
22. Maia Call*, Clark Gray, and Pamela Jagger. (2019). Smallholder responses to climate anomalies in rural Uganda. *World Development* 115: 132–144.
23. Heather Randell* and Clark Gray. (2019). Climate change and educational attainment in the global tropics. *Proceedings of the National Academy of Sciences* 116 (18): 8840-8845.
24. Samuel Sellers* and Clark Gray. (2019). Climate shocks constrain human fertility in Indonesia. *World Development* 117: 357-369.

25. Valerie Mueller and Clark Gray. (2018). Heat and adult health in China. *Population and Environment* 40(1): 21–46.
26. Leah Bevis*, Jon Conrad, Christopher Barrett, and Clark Gray. (2017). State-conditioned soil investment in rural Uganda. *Research in Economics* 71(2): 254–281.
27. Maia Call*, Clark Gray, Michael Emch and Mohammad Yunus. (2017). Disruption, not displacement: Environmental variability and temporary migration in Bangladesh. *Global Environmental Change* 46: 157–165.
28. Maia Call*¹, Tony Mayer*¹, Samuel Sellers*¹, Diamond Ebanks*¹, Margit Bertalan*¹, Elisabeth Nebie*¹, and Clark Gray. (2017). Socio-environmental drivers of forest change in rural Uganda. *Land Use Policy* 62: 49–58. ¹Authors contributed equally to this research.
29. Jason Davis*, Samuel Sellers*, Clark Gray, and Richard Bilsborrow. (2017). Indigenous migration dynamics in the Ecuadorian Amazon: A longitudinal and hierarchical analysis. *Journal of Development Studies* 53(11): 1849-1864.
30. Julia Jennings and Clark Gray. (2017). Climate, marriage and fertility in the Netherlands, 1871-1937. *Population and Environment* 38:242–260.
31. Brian Thiede and Clark Gray. (2017). Heterogeneous climate effects on human migration in Indonesia. *Population and Environment* 39(2): 147-172.
32. Matthew Bozigar*, Clark Gray, and Richard Bilsborrow. (2016). Oil extraction and indigenous livelihoods in the Northern Ecuadorian Amazon. *World Development* 78: 125–135.
33. Clark Gray and Erika Wise. (2016). Country-specific effects of climate variability on human migration. *Climatic Change* 135(3): 555-568.
34. Heather Randell* and Clark Gray. (2016). Climate variability and educational attainment: Evidence from rural Ethiopia. *Global Environmental Change* 41: 111–123.
35. Brian Thiede, Clark Gray, and Valerie Mueller. (2016). Climate variability and inter-provincial migration in South America, 1970-2011. *Global Environmental Change* 41: 228–240.
36. Jason Davis*, Richard Bilsborrow, and Clark Gray. (2015). Delayed fertility transition among indigenous women: A case study in the Ecuadorian Amazon. *International Perspectives on Sexual and Reproductive Health* 41(1):1–10.
37. Clark Gray, Matthew Bozigar*, and Richard Bilsborrow. (2015). Declining use of wild resources by indigenous peoples of the Ecuadorian Amazon. *Biological Conservation* 182: 270–277.
38. Julia Jennings and Clark Gray. (2015). Climate variability and human migration in the Netherlands, 1865-1937. *Population and Environment* 36(3): 255-278.
39. Timothy Baird* and Clark Gray. (2014). Livelihood diversification and shifting social networks of exchange: A social network transition? *World Development* 60: 14–30.
40. Elizabeth Fussell, Lori Hunter and Clark Gray. (2014). Measuring the environmental dimensions of human migration: The demographer's toolkit. *Global Environmental Change* 28: 182–191.
41. Clark Gray and Richard Bilsborrow. (2014). Consequences of out-migration for land use in rural Ecuador. *Land Use Policy* 36: 182–191.
42. Clark Gray, Elizabeth Frankenberg, Thomas Gillespie, Cecep Sumantri and Duncan Thomas. (2014). Studying displacement after a disaster using large scale survey methods: Sumatra after the 2004 tsunami. *Annals of the Association of American Geographers* 104(3): 594-612.
43. Valerie Mueller, Clark Gray and Katrina Kosec. (2014). Heat stress increases long-term human migration in rural Pakistan. *Nature Climate Change* 4(3): 182-185.

44. Clark Gray and Richard Bilborrow. (2013). Environmental influences on human migration in rural Ecuador. *Demography* 50(4): 1217-1241.
45. Clark Gray and Valerie Mueller. (2012). Natural disasters and population mobility in rural Bangladesh. *Proceedings of the National Academy of Sciences* 109(16): 6000-6005.
46. Clark Gray and Valerie Mueller. (2012). Drought and population mobility in rural Ethiopia. *World Development* 40(1): 134–145.
47. Clark Gray. (2011). Soil quality and human migration in Kenya and Uganda. *Global Environmental Change* 21(2): 421–430.
48. Clark Gray. (2010). Gender, natural capital and migration in the southern Ecuadorian Andes. *Environment and Planning A* 42(3): 678–696.
49. Flora Lu, Clark Gray, Richard Bilborrow, Carlos Mena, Jason Bremner, Alisson Barbieri, Christine Erlien, and Stephen Walsh. (2010). Contrasting colonist and indigenous impacts on Amazonian Forests. *Conservation Biology* 24(3): 881-885.
50. Clark Gray. (2009). Environment, land and rural out-migration in the southern Ecuadorian Andes. *World Development* 37(2): 457–468. [Student Paper Awards from the Cultural and Political Ecology, Latin America, and Population Specialty Groups of the Association of American Geographers]
51. Clark Gray. (2009). Rural out-migration and smallholder agriculture in the southern Ecuadorian Andes. *Population and Environment* 30(4-5): 193-217.
52. L. Earl Gray, Norman Barlow, Kembra Howdeshell, Joseph Otsby, Jonathan Furr and Clark Gray. (2009). Transgenerational effects of di(2-ethylhexyl) phthalate in the male CRL:CD(SD) rat: Added value of assessing multiple offspring per litter. *Toxicological Sciences* 110(2): 411–425.
53. Clark Gray, Richard Bilborrow, Jason Bremner, and Flora Lu. (2008). Indigenous land use in the Ecuadorian Amazon: a cross-cultural and multilevel analysis. *Human Ecology* 36(1): 97–109.
54. Andrew Hotckiss, Cynthia Rider, Chad Blystone, Vickie Wilson, Phillip Hartig, Gerald Ankley, Paul Foster, Clark Gray and L. Earl Gray. (2008). Fifteen years after ‘Wingspread’: Environmental endocrine disrupters and human and wildlife health: Where we are today and where we need to go. *Toxicological Sciences* 102(2): 371-382.
55. Ronald Rindfuss, Barbara Entwisle, Stephen Walsh, Carlos Mena, Chris Erlien, and Clark Gray. (2007). Frontier land use: Synthesis, challenges, and next steps. *The Annals of the Association of American Geographers* 97(4): 739–754.

EDITED VOLUMES

Lori Hunter, Clark Gray and Jacques Véron (eds.). (2022). *The International Handbook of Population and Environment*. Springer. DOI 10.1007/978-3-030-76433-3

CONFERENCE PARTICIPATION

AAG: American Association of Geographers, IUSSP: International Union for the Scientific Study of Population, PAA: Population Association of America

- 2024 Co-author, Climate Anomalies and Anemia: An Analysis of 46 Countries, PAA
- 2024 Co-author, Climate Change and Children's Nutritional Status in Egypt and Jordan, PAA
- 2024 Co-author, Climate Change, Aquatic Conditions, and Household Food Security: Evidence from Lake Malawi, PAA
- 2024 Co-author, Climate Variability and Internal Migration to Urban and Rural Areas: Evidence from Global Microdata, PAA

- 2024 Co-author, Early-Life Climate Exposures and Adult Fertility: Evidence from the Global Tropics, PAA
- 2024 Co-author, Exposure to Climate and Vulnerability to Food Insecurity in Ethiopia, PAA
- 2024 Organizer, Emerging Issues in Climate Migration, PAA
- 2024 Presenter, Temperature Anomalies Harm and Displace Reproductive-Age Women Across the Global South, PAA
- 2023 Co-author, Climate Change and Women's Nutritional Status in Egypt and Jordan, AAG & PAA
- 2023 Co-author, Climatic Variability and Internal Migration in Asia, PAA
- 2023 Discussant, Climate Change Impacts on Child Health and Cognition, PAA
- 2023 Presenter, Child Malnutrition and Mortality in a Changing Climate, PAA
- 2022 Co-author, Climate Change and Food Security in Ethiopia, PAA & AAG
- 2022 Co-author, Climate Change, Social Vulnerability and Child Nutrition in South Asia, PAA
- 2022 Co-author, Climatic Conditions and Food Security in Tanzania, PAA
- 2022 Co-author, Rainfall and Temperature and Life Outcomes from 1900-1940 in the US, PAA
- 2022 Discussant, Rural Demographic, Economic and Social Change, PAA
- 2021 Co-author, Climate-Induced Migration and Unemployment in Middle-Income Africa, PAA
- 2019 Co-author, Climate Change and Lifetime Migration in the Global Tropics, PAA
- 2019 Co-author, Is Climate Stress Driving Tropical Depopulation?, PAA
- 2019 Co-author, Smallholder Responses to Climate Anomalies in Rural Uganda, AAG
- 2019 Co-author, The Social Consequences of Environmental Migration in Africa, PAA
- 2019 First author, Climatic Influences on Women's Health and Mobility in Sub-Saharan Africa, PAA
- 2019 Presenter, Climate Change and Food Security in Uganda, PAA
- 2018 Co-author, Climate Change and Multidimensional Vulnerability to Child Undernutrition, PAA
- 2018 Co-author, Does Women's Empowerment Reduce the Negative Effect of Climate Change on Child Health? Empirical Evidence from Households in India, PAA
- 2018 Co-author, Impact of Climate Variability on Agriculture & Food Security in Ugandan Households, AAG
- 2018 Organizer, Food Security and Development I-II, PAA
- 2018 Reviewer, Population Specialty Group Student Paper Competition, AAG
- 2017 Co-author, Characterizing the Forest-Dwelling Indigenous Peoples of Latin America, IUSSP
- 2017 Co-author, Climate Change, Environmental Degradation, and Migration in Uganda, AAG
- 2017 Co-author, Climatic Variability and Early Childhood Malnutrition in Indonesia, IUSSP
- 2017 Co-author, Climate Variability and Rural Livelihood Diversification in Uganda, PAA
- 2017 Co-author, Contextual Influences on the Climate-Migration Relationship: Evidence from India, AAG
- 2017 Co-author, Indigenous Health in the Ecuadorian Amazon: A Multilevel & Longitudinal Analysis, IUSSP
- 2017 Co-author, Livelihood Adaptation to Climate Change in Rural Ethiopia, AAG
- 2017 Co-author, What Drives Environmental Migrants? Longitudinal Evidence from Uganda, PAA
- 2017 Introducer, Disruption or Displacement? Exploring the Complex Interactions between the Environment and Migration, AAG
- 2017 Organizer, Changing Livelihoods and Landscapes in East Africa I-II, AAG
- 2017 Panelist, Population Geography and the Environment: Special Session in Honor of Clark Gray and David Lopez-Carr, AAG

- 2017 Presenter, Climate and Unemployment in East Africa, AAG
- 2016 Co-author, Climate Events and Temporary Migration in Matlab, Bangladesh, PAA
- 2016 Co-author, Socio-Environmental Drivers of Forest Change in Rural Uganda, PAA
- 2016 Presenter, Drivers of Changing Indigenous Land Use in the Ecuadorian Amazon, PAA
- 2016 Presenter, Indigenous Health in the Ecuadorian Amazon: A Multilevel and Longitudinal Analysis, PAA
- 2015 Co-author, Country-specific Effects of Climate Variability on Human Migration, PAA.
- 2015 Presenter, Oil Extraction and Indigenous Livelihoods in the Northern Ecuadorian Amazon. PAA.
- 2014 Presenter, Wild Resource Use in the Ecuadorian Amazon: A Multi-Ethnic and Longitudinal Approach, AAG & PAA
- 2014 Discussant, Demography of Disasters II, PAA.
- 2014 Organizer, Changing Landscapes and Livelihoods in the Amazon Basin I-III. AAG.
- 2013 Co-author, Climate Variability and Human Migration in the 19th Century Netherlands, PAA
- 2013 Co-author, Population Mobility and Monsoon Anomalies in Pakistan, PAA
- 2012 Organizer, Changing Landscapes from the Andes to the Amazon I-V, AAG
- 2012 Presenter, Consequences of Out-Migration for Land Use in Rural Ecuador, AAG
- 2012 Presenter, Natural Disasters and Population Mobility in Rural Bangladesh, PAA
- 2012 Presenter, Soil Quality and Human Migration in Kenya and Uganda, PAA
- 2011 Presenter, Drought and Human Migration in Rural Ethiopia, PAA
- 2011 Presenter, Return Migration after the Tsunami in Indonesia, PAA
- 2010 Presenter, Environment, Land and Rural Out-Migration in the Southern Ecuadorian Andes, AAG
- 2009 Panelist, Our Cohort's Response: Graduate Students and the (Re) Theorization Project in Population Geography, AAG
- 2009 Presenter, Contrasting Colonist and Indigenous Impacts on Amazonian Forests, IUSSP
- 2009 Presenter, Tsunami-Induced Displacement in Sumatra, Indonesia, AAG, IUSSP & PAA
- 2009 Presenter, Rural Out-Migration and Smallholder Agriculture in the Southern Ecuadorian Andes, PAA
- 2008 Organizer, Consequences of Out-Migration for Rural Origin Areas, AAG
- 2008 Presenter, Contradictory Effects of Out-migration on Smallholder Agriculture in the Southern Ecuadorian Andes, AAG
- 2007 Organizer, Conservation and Development from the Andes to the Amazon I-IV, AAG
- 2007 Presenter, Rural Out-Migration to Alternative Destinations in the Southern Ecuadorian Highlands, AAG & PAA
- 2005 Organizer, Human-Environment Studies from the Andes to the Amazon, AAG.
- 2005 Presenter, Indigenous Land Use in the Northern Ecuadorian Amazon: A Cross-Cultural and Multilevel Analysis, AAG, IUSSP & PAA

TEACHING AND MENTORING

Courses Taught (semester, number of students)

Courses: ENEC 567 Ecological Analyses and Applications; ENEC 569 Current Issues in Ecology, GEOG 120 World Regional Geography, GEOG 130 Development & Inequality, GEOG 437 Social Vulnerability to Climate Change, GEOG 451 Population, Development and the Environment, GEOG 803 Human-Environment Research Seminar

2024-25: ENEC 567 (Spring, TBD), GEOG 130 (Fall, TBD), GEOG 437 (Fall, TBD)
 2023-24: GEOG 437 (Fall, 24), GEOG 803 (Fall, 11), GEOG 451 (Spring, 26)
 2022-23: ENEC 567 (Fall, 7), GEOG 451 (Fall, 33), GEOG 437 (Spring, 24)
 2021-22: GEOG 437 (Spring, 27), GEOG 803 (Spring, 10)
 2020-21: ENEC 567 (Fall, 7)
 2019-20: GEOG 437 (Fall, 22), GEOG 451 (Fall, 15), GEOG 803 (Spring, 9)
 2018-19: GEOG 230 (Fall, 14), GEOG 437 (Fall, 17), ENEC 569 (Spring, 6), GEOG 803 (Spring, 11)
 2017-18: ENEC 490 (Fall, 14), GEOG 451 (Fall, 12), GEOG 120 (Spring, 153)
 2016-17: ENEC 569 (Spring, 10)
 2015-16: GEOG 451 (Spring, 18)
 2014-15: GEOG 451 (Fall, 21), ENEC 569 (Spring, 6)
 2013-14: GEOG 451 (Fall, 35)
 2012-13: GEOG 120 (Fall, 150)
 2011-12: GEOG 451 (Fall, 18)

Advisees

Masters: Georgina Gemayel (current), Sara Ghebremicael (Exposure to Climate and Vulnerability to Food Insecurity in Ethiopia, 2023), Douglas Hopping (Gender Differences and Social Capital among Temporary and Permanent Migrants in China, 2016), Matthew Bozigar (Oil Extraction and Indigenous Livelihoods in the Northern Ecuadorian Amazon, 2014)
 Doctoral: Sara Ghebremicael (current), Sandeep Kandikuppa (ENEC, Rural Indebtedness in India: Dimensions, Causes, and Perceptions, 2021), Maia Call (Rural Livelihoods and Environmental Change in Rural Uganda, 2017)
 Postdoctoral: Alfredo Rojas (CPC, current), Heather Randell (SESYNC, 2016-18), Jason Davis (CPC, 2012-15)
 Honors thesis: Katie McMahon (2021), Erika Munshi (ENEC, 2018)

Committees

Dissertation: Kate Brandt (current), Sophia Graybill (current), Cyrus Sinai (current), Bethany Stoutamire (Sociology, current), Rajesh Bista (2022), Varun Goel (2021), Madeline Giefer (2020), Victoria Salinas (University of Minas Gerais, 2020), Samuel Sellers (ENEC, 2017), Leah Bevis (Cornell University, 2016), Heather Randell (Brown University, 2015), Jason Bremner (Planning, 2013), Timothy Baird (2012)
 Masters: Lindsey Jackson (current), Hilary Sandborn (2023)
 Honors thesis: Basie Settle (Sociology, 2023), Morgan Pratt (Global Studies, 2018), Jack Cordes (2017), Emma Seagle (2014)

GRANTS

External

(Scored at 3rd percentile) Brian Thiede (PI), Clark Gray (Co-I, 8%). Demographic and Health Effects of Climate Exposures Across the Life Course. NIH R03.
 Clark Gray (PI, 8%), Sudhanshu Handa (Co-I), Valerie Mueller (Co-I). Family Resources, Food Security, and Child Health During Periods of Temperature Change and Adverse Climate Conditions. NIH R03-HD109579. (\$126,788 direct), 2023-2025.

- Clark Gray (PI, 8%), Heather Randell (Co-I). The Resilience of Food Security to Climate Shocks. NIH R03-HD104843 (\$129,096 direct), 2022-2024.
- Clark Gray (PI, 8%), Brian Thiede (Co-I). Environmental Change and Undernutrition among Women and Children. NIH R03-HD101859 (\$129,931 direct), 2020-2022.
- Clark Gray (PI, 8%), Valerie Mueller (Co-I). Population Dynamics in Africa: Selected Outcomes and Causes. NIH R03-HD098357 (\$128,500 direct), 2019-2022.
- Clark Gray (PI, 16%), Valerie Mueller (Co-I). Climate, Population Health, and Well-being over Time. NIH R03-HD083528 (\$108,630 direct), 2015-2018.
- Clark Gray (PI, 8%), Ephraim Nkonya (Co-I), Darrell Schulze (Co-I), Kaizzi Kayuki (Co-I). The Relationship between Soil Degradation, Rural Livelihoods, and Household Well-Being. NSF Geography and Spatial Sciences BCS-122681 (\$341,626 direct), 2012-2016.
- Clark Gray (PI, 75%), Richard Bilborrow (Co-I). Economic Well-being in the Aftermath of the Indian Ocean Tsunami. NIH Pathway to Independence R00-HD061752 (\$510,380 direct), 2011-2015.
- Clark Gray (PI, 100%), Duncan Thomas (Mentor), Elizabeth Frankenberg (Co-mentor). Economic Well-being in the Aftermath of the Indian Ocean Tsunami. NIH Pathway to Independence K99-HD061752 (\$116,070 direct), 2009-2010.
- Richard Bilborrow (PI), Clark Gray (Co-I, 0%). Frontier Migration and the Rural Environment in Ecuador. NIH R21-HD052092 (\$275,000 direct), 2007-2010.
- Richard Bilborrow (PI), Clark Gray (Co-I, 0%). Doctoral Dissertation Research: Out-Migration, Environmental Change, and Rural Livelihoods in the Southern Ecuadorian Andes. NSF Geography and Spatial Sciences BCS-0525469 (\$12,000 direct), 2005-2008.

PROFESSIONAL SERVICE

Professional memberships: American Association of Geographers, Population Association of America

Editorial, advisory and review boards

- NIH Social Sciences and Population Studies Study Section (ad hoc reviewer, 2023-present)
- Population and Environment (editorial board member, 2020-present)
- IPUMS-International (national advisory board member, 2021-2024)
- NIH Population Sciences Study Section (panel member, 2019-2021)
- NSF Geography and Spatial Sciences (ad hoc reviewer, 2014-2021)
- Regular reviewer for Global Environment Change and World Development

UNC committees

- Graduate, GEOG (Fall 2013-Spring 2018; Chair: Fall 2022-present)
- Graduate Awards, GEOG (Spring 2018-Fall 2020; Fall 2014-Spring 2016; Chair: Fall 2022-present)
- Faculty Hiring, GEOG (Fall 2019; Chair: Spring 2022)
- Post-Tenure Review, GEOG (Spring 2022)
- Director Search, CPC (Fall 2021-Spring 2022)
- Diversity, GEOG (Spring 2016, Fall 2020, Chair: Fall 2018-Spring 2020)
- Training, CPC (Fall 2017-Spring 2020)
- Merit, GEOG (Summer 2018, Chair: Summer 2019)
- Faculty Search, ENEC (Fall 2018)
- Course-Based Undergraduate Research Awards, College of Arts and Sciences (Spring 2018)
- Strategic Planning, ENEC (Spring 2017)

Curriculum, ENEC (Fall 2012)

Colloquium, GEOG (Chair: Fall 2012)