

Nicolas Choquette-Levy

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Academic Positions

Penn State University (University Park, PA) January 2025 - present
Assistant Professor, Climate Risk and Decision-Making, Department of Geosciences

Beijer Institute of Ecological Economics (Stockholm, Sweden) 2024-2026
Beijer Young Scholars Cohort Member

Cornell University (Ithaca, NY) July-December 2024
Postdoctoral Associate, Global Development
• Mentor: Andrew Reid Bell

Boston University (Boston, MA) 2023- 2024
Postdoctoral Associate, Earth & Environment
• Mentor: Andrew Reid Bell

Education

Princeton University (Princeton, NJ) 2017 – 2022
Ph.D. *Science, Technology, and Environmental Policy*
• Dissertation: “Navigating a Warming World: Rural-Urban Migration in the Context of Smallholder Farmer Climate Adaptation”
• Committee: Michael Oppenheimer (co-advisor), Simon Levin (co-advisor), Elke Weber, Doug Massey, Dirgha Ghimire

International Institute for Applied Systems Analysis (Laxenburg, Austria) 2019
Young Scientists Summer Program
• Research Paper: “The Role of Agricultural Risk-Sharing Networks on Climate Adaptation Strategies”

University of Calgary (Calgary, AB, Canada) 2011
M.Sc. *Chemical & Petroleum Engineering; Energy and Environmental Systems Specialization*
• Dissertation: “Should Alberta Upgrade Oil Sands Bitumen? An Integrated Life Cycle Framework to Evaluate Energy Systems Investment Tradeoffs”

University of Southern California (Los Angeles, CA) 2007
B.Sc. *Biomedical Engineering*
B.A. *International Relations*
• Honor’s Thesis: “The Basques and the PNV: The Effect of Social Disruption on Nationalist Party Strategy”

Publications

Submitted Manuscripts

[Submitted] Bearpark, T.; Rosenthal-Kay, J.; **Choquette-Levy, N.**; Xiao, T.; and M. Oppenheimer. Climate migration projections across disciplines: A model inter-comparison for the US, submitted to *Nature*, 8 August 2026.

[Under Review] Delannoy, L. et al. Bridging social-ecological systems and ecological economics to navigate polycrisis, submitted to *Ecological Economics*, 24 May 2026. (Part of 15-author team)

Published Articles (peer-reviewed)

Choquette-Levy, N.; Cottier, F.; Diouf, N.C.; Boukary, A.G.; Petit, V.; Piguet, E. ; Sall, S.; Visée, C.; de Sherbinin, A. ; and A.R. Bell (2026). [Aspirations in a warming world: Modeling migration and education decisions under climate risk in Senegal](#), *Global Environmental Change*, **100**.

Choquette-Levy, N.; D. Ghimire; M. Oppenheimer; R. Ghimire; and D. CK (2025). [Retrenchment under climate-driven risks in subsistence farming communities](#), *Population and Environment*, **47(22)**.

Choquette-Levy, N.*; M. Wildemeersch*; FP Santos; SA Levin; M. Oppenheimer; and E. Weber (2024). [Pro-social preferences improve climate risk management in subsistence farming communities](#), *Nature Sustainability*: 1-12.

Thalheimer, L. *; **N. Choquette-Levy***; and F. Garip (2022). [Compound events from droughts and structural vulnerability on human mobility](#), *iScience*, **25(12)**.

Choquette-Levy, N; M. Wildemeersch; M. Oppenheimer; and SA Levin (2021). [Risk Transfer Policies Facilitate Smallholder Farmer Climate Adaptation](#), *Nature Climate Change*, **11**: 1046-1054.

Choquette-Levy, N; M. Zhong; HM MacLean; and JA Bergerson. (2018). [COPTeM: A Model to Estimate the Factors Driving Crude Oil Pipeline Transportation Emissions](#), *Env. Sci. Technol.* **52(1)**: 337-345.

Choquette-Levy, N; HM MacLean; and JA Bergerson (2013). [Should Alberta Upgrade Oil Sands Bitumen?](#), *Energy Policy*, (61) Oct. 2013: pp. 78-87.

*Indicates co-first authorship

Book Chapters

Choquette-Levy, N; and P. James (2011). “[Structural Realism and Transaction Costs in the U.S.-Canadian Partnership](#)”, Book chapter in *Forgotten Partnership Redux*, ed. by Greg Anderson and Christopher Sands, Cambria Press.

Technical Reports

World Bank (2019). Nepal Environmental Sector Diagnostic: Path to Sustainable Growth under Federalism. Country Environmental Analysis; World Bank: Washington, D.C. (Member of report team)

Funding and Awards

2026	Lead PI, Penn State – Ghana Seed Grant	\$14,000
2022-2023	Dean’s Completion Fellowship <i>Princeton University</i>	\$19,000
2020-2022	Social Sciences and Humanities Research Council Doctoral Fellowship <i>Government of Canada</i>	\$40,000
2020-2022	High Meadows Environmental Institute Walbridge Award <i>Princeton University</i> Grant awarded for survey on Nepali farmers’ climate risk perceptions	\$10,000

2020	Mikhalevich Award <i>International Institute for Applied Systems Analysis</i> One of two awards given by IIASA for “outstanding work by participants in the institute’s Young Scientists Summer Program” among 50 participants	\$5,000
		N/A
2017	“Invest in Others” Award; Engineers Without Borders Canada	
2010-2011	Natural Sciences & Engineering Research Council Graduate Scholarship <i>Government of Canada</i>	\$17,000
2010	Best Poster Award <i>American Center for Life Cycle Assessment X Conference, Portland, OR</i>	
2010	Best Student Paper Finalist <i>U.S. Association for Energy Economics Conference, Calgary, AB</i>	

Conferences and Presentations

Conference Presentations

- 2026 **Choquette-Levy, N.;** Bastien-Olvera, B.; Redicker, S.; and Wiechman, A. Rural Prisms: Modelling Interacting Shock Propagation across Rural Landscapes, International Environmental Modelling & Software Society, July 2026: Dublin, Ireland (oral presentation).
- Choquette-Levy, N.;** J. Hwang; J. Wright; K. Aune; T. Bango; O. DiPrinzio; S. Redicker; and A. Pisor. Money and Meanings of Risk: Migration Remittances and Climate Perceptions in the Global South, American Association of Geographers, March 2026: San Francisco, CA (oral presentation).
- 2025 **Choquette-Levy, N.;** A.R. Bell; R. Martins Moreira; J. Ribeiro. Carrots, Sticks, and Cattle: Modeling Tradeoffs and Synergies in Amazonian Conservation Policy Futures. American Geophysical Union Fall Meeting, December 2025; New Orleans, LA (oral presentation).
- 2024 **Choquette-Levy, N.;** A.R. Bell; F. Cottier; and A. de Sherbinin. Investing with Foresight: Livelihood and Migration Consequences of Climate Hazards in Senegal, American Geophysical Union Fall Meeting, December 2024, Washington, D.C. (oral presentation).
- Choquette-Levy, N. .**R. Bell; F. Cottier; and A. de Sherbinin. Investing with Foresight: Calibrating Deeply Uncertain Parameters in an Agent-Based Model of Livelihoods in Senegal. Decision-Making under Deep Uncertainty Meeting, Nov. 2024, Denver, CO.
- Choquette-Levy, N.;** A.R. Bell; F. Cottier; and A. de Sherbinin. Investing with Foresight: A Participatory Agent-Based Model of Livelihood Aspirations and Capabilities in Senegal, International Congress on Environmental Modelling and Software, June 2024, East Lansing, MI.
- Choquette-Levy, N.** CLIMoIP: A Proposal for a Climate Migration Modelling Intercomparison Project, Climate Futures Workshop, Princeton, NJ, May 2024.

Choquette-Levy, N.; A.R. Bell; F. Cottier, and A. de Sherbinin. Modelling Climatic Effects on Migration and Education Decisions in Senegal, Population Association of America, April 2024, Columbus, OH (poster presentation).

- 2023 **Choquette-Levy, N.;** F. Errickson; and A. Babu Pokhrel. Accounting for climate and political uncertainties in migration agent-based models, Environment and Climate Mobilities Network Conference, July 2023, Vienna, Austria (oral presentation).

Choquette-Levy, N.; D. Ghimire; R. Ghimire; I. Chaudhary; D. CK; and M. Oppenheimer. How Does Climate Shape Smallholder Farmer Livelihood Risk Perceptions? Population Association of America, April 2023, New Orleans, LA (poster presentation).

- 2022 **Choquette-Levy, N.;** D. Ghimire; R. Ghimire; I. Chaudhary; D. CK; and M. Oppenheimer. How Does Heterogeneity in Social and Informational Capital Affect Nepali Farmer Climate Risk Management? Wittgenstein Centre Conference 2022 “Population and Climate Change”; Dec. 2022; Vienna.

Choquette-Levy, N.; F. Errickson; M. Oppenheimer; and K. Keller. Robust Climate Adaptation Policies for Subsistence Agriculture in Nepal. 2022 Annual Meeting of the Society for Decision-Making under Deep Uncertainty; Nov. 2022; Mexico City (oral presentation).

Choquette-Levy, N.; Ghimire, D.; Oppenheimer, M. ; Ghimire, R.; Chaudary, I; and CK, D. How Do Nepali Farmers Form Perceptions about Climate and Livelihood Risks? Climate Mobility Network Workshop, Columbia University, Sept. 2022 (oral presentation).

Myers, E.; **Choquette-Levy, N. ;** and G. Hagstrom. Investigating Sources of Social Vulnerability to COVID-19 in New York City. Population Association of America Conference on Applied Demography in Feb. 2022 (oral presentation).

- 2021 **Choquette-Levy, N.,** and M. Wildemeersch. Can Smallholder Farmer Risk-Sharing Mechanisms Co-Exist with Formal Climate Insurance? American Geophysical Union Fall Meeting, Dec. 2021, New Orleans, LA (oral presentation).

Choquette-Levy, N., and M. Wildemeersch. Can Smallholder Farmer Risk-Sharing Mechanisms Co-Exist with Formal Climate Insurance? Climate Futures Workshop, June 2021: Princeton University (oral presentation, virtual format).

Choquette-Levy, N., M. Wildemeersch, M. Oppenheimer, and S.A. Levin. The Impact of Risk Transfer Mechanisms on Smallholder Farmer Climate Adaptation and Rural-Urban Migration in Nepal. Population Association of America Annual Meeting, May 2021 (oral presentation, virtual format).

- 2020 **Choquette-Levy, N.,** M. Wildemeersch, M. Oppenheimer, and S.A. Levin. Risk Transfer Policies Facilitate Smallholder Farmer Climate Adaptation, American Geophysical Union Annual Meeting, Dec. 2020 (poster, virtual format).

Choquette-Levy, N. Risk-Transfer Mechanisms to Facilitate Smallholder Climate Adaptation, Computational Sustainability Doctoral Colloquium, Oct. 2020 (oral presentation, virtual format).

Choquette-Levy, N. The Impact of Risk-Sharing Mechanisms on Smallholder Farmer Climate Adaptation, American Mathematical Society Eastern Sectional, March 2020 (oral presentation, virtual format).

- 2019 **Choquette-Levy, N., M. Wildemeersch, M. Oppenheimer, and S.A. Levin.** The Impact of Risk-Sharing Mechanisms on Smallholder Farmer Climate Adaptation, American Geophysical Union Annual Meeting, Dec. 2019: San Francisco, CA (poster presentation).

Choquette-Levy, N. The Impact of Social Networks and Risk-Sharing Mechanisms on Smallholder Farmer Climate Adaptation, Computational Sustainability Doctoral Colloquium, Oct. 2019: Carnegie Mellon University, Pittsburgh, PA.

- 2018 **Choquette-Levy, N.** Floating into Harm's Way? The Effects of Rural-Urban Migration on Climate Vulnerability in China, Resilience Measurement Evidence & Learning Conference, Nov. 2018: New Orleans, LA.

- 2011 **Choquette-Levy, N., Abella, J., and J. Bergerson.** Should Alberta Upgrade Oil Sands Bitumen? International Society of Industrial Ecology, June 2011: Berkeley, CA.

- 2010 **Choquette-Levy, N., and J. Bergerson.** Transporting Oil Sands by Pipeline: What are the Tradeoffs? American Center for Life Cycle Assessment X Conference, Nov. 2010: Portland, OR. Awarded Best Student Poster.

Holmes, G., **Choquette-Levy, N., Nakhasi, R., and M. Beaudin.** Cost-competitive CO₂ Mitigation with Combined Heat and Power Systems in Calgary, U.S. Association for Energy Economics Conference, Oct. 2010: Calgary, AB. Dennis J. O'Brien Best Student Paper Award Finalist.

Invited Talks

- 2025 **Choquette-Levy, N.** Connecting Pixels to Policy: Leveraging Climate Data for Risk Management. Invited seminar to Department of Geosciences, Texas Tech University, Lubbock, TX, Oct. 2025.

Choquette-Levy, N. Research Process: Hunkering Down under Climate Risk. Research workshop presented to 15 graduate students at the Institute for Social and Environmental Research, Chitwan, Nepal, June 2025.

- 2024 **Choquette-Levy, N.** Climate Management in Agriculture: Decision-Making Models to Inform Policy under Uncertainty; Invited talk to Center for Social Complexity of Climate Change; Delft University of Technology; Delft, Netherlands, May 2024.

Choquette-Levy, N. Climate Management in Agriculture: Decision-Making Models to Inform Policy under Uncertainty; Invited talk to Socially Intelligent Artificial Systems Group; University of Amsterdam, Netherlands, May 2024.

Choquette-Levy, N. Should I Stay or Should I Go? Human Migration in a Warming World, Student Sustainability Summit (online), April 2024.

Choquette-Levy, N. Development Decisions under Climate Risk: An Emerging Conservation-Urbanization-Food Security Nexus? Invited talk to High Meadows Environmental Institute, Princeton University, Princeton, NJ, March 2024.

Choquette-Levy, N. Climate Risk Policy in Agriculture: Decision-Making Models To Inform Policy under Uncertainty. Invited talk to the Penn State Science Policy Forum, State College, PA, Jan. 2024.

2023 **Choquette-Levy, N.** Integrating Empirical and Exploratory Modelling Methods for Climate Mobility Research. Invited talk to Migration and Sustainable Development Team at International Institute for Applied Systems Analysis, Vienna, Austria, July 2023.

Choquette-Levy, N.; A. Bell; F. Cottier; and A. de Sherbinin. Participatory Agent-Based Models: A Senegal Climate Adaptation Case Study. Invited talk to Agricultural Model Intercomparison Project 9 Conference, New York, NY, June 2023.

Choquette-Levy, N. Navigating a Warming World: Policy & Governance to Manage Smallholder Farmer Climate Risk. Invited talk to World Bank Climate Change Group, May 2023.

2022 **Choquette-Levy, N.** Navigating a Warmer Planet: Situating Migration in Smallholder Farmer Adaptation Portfolios. Invited talk to 2022 Workshop on Migration Modelling and Climate Change Research, Vienna University of Economics and Business; Vienna, Austria; Aug. 2022.

2022 **Choquette-Levy, N.; M. Wildemeersch, and J. Linnerooth-Bayer.** Policies to Facilitate Smallholder Farmer Climate Risk Management. Invited talk to 2022 participants of IIASA Young Summer Scientists Program; Laxenburg, Austria; Aug. 2022.

2021 **Choquette-Levy, N., M. Wildemeersch, M. Oppenheimer, and S.A. Levin.** Risk Transfer Mechanisms to Facilitate Smallholder Farmer Climate Adaptation. Invited seminar hosted by Politecnico di Milano (virtual format), Feb. 2021.

Seminars Organized

2024 *Co-Organizer, Climate Migration Modelling Intercomparison Workshop.* Convened 35 academic and policy professionals for a 3-day workshop to develop a framework for standardized comparison of different modelling approaches to the climate-migration relationship.

2022 *Organizer, Princeton Environmental Justice & Community Research Reading Group.* Organizer of monthly reading group consisting of 15 graduate students and research staff to discuss examples of incorporating EJ perspectives in environmental research.

2022 *Co-Organizer, Climate Mobility Research Symposium,* Climate Mobility Network, New York, NY, Sept. 2022. Co-organized a workshop of 20 speakers on qualitative and quantitative methods for assessing climate impacts on human migration.

2021 *Lead Organizer, Incorporating Environmental Justice Perspectives in our Research Workshop,* Center for Policy Research on Energy & Environment, Princeton University, April 2021 (virtual format). Workshop with 50 PhD, post-doc, and faculty researchers from 7 universities. Lead team of 8 PhD students and post-docs who organized workshop format, invited speakers, coordinated with other university participants, and drafted workshop report.

- 2018- *Lead Organizer, CEREAL Seminar Series*, Princeton Environmental Institute, Princeton University. Interdisciplinary weekly seminar series of 25 participants, featuring internal and external speakers on energy, environment, and climate-related research. Responsibilities included inviting guest speakers and growing membership of seminar group.

Teaching and Mentorship Experience

Penn State University	2025 - present
<i>Instructor:</i> Earth Systems Science Seminar (EARTH 400, Graduate & Undergraduate); Energy, The Environment & Our Future (EARTH 104N; Undergraduate) <i>Advisor:</i> Martina Adjei-Yeboah (doctoral); Olivia DiPrinzio (doctoral) <i>Dissertation committee member:</i> Tsunami Sharmba (Geosciences); Anthony Delgadillo Salas (Geosciences); Ethan Heidtman (Geosciences); Ayse Akyildiz (Rural Sociology)	
Princeton University	
<i>Co-Instructor, Jewish Ethics in the Age of Climate Change (Undergraduate and Graduate)</i>	Spring 2022
Developed and co-taught a new six-week seminar at the Center for Jewish Life on Jewish texts and their relevance for ethical dilemmas posed by climate change	
<i>Mentor for Undergraduate Research Projects</i>	Summer 2021
- Karena Yan, “Modelling Farmer Decision-Making Frameworks”, Princeton High Meadows Environmental Institute Research Internship - Nicholas Gomes, “Climate Effects on Nepal’s Agriculture and Migration”, NSF Research Experiences for Undergraduates	
<i>Teaching Assistant, Modeling the Earth System (ENV 367; Undergraduate)</i>	Fall 2020
Advised student groups (25 students) on class projects that adapted a Python-based Earth systems model to assess efficacy of climate mitigation strategies	
<i>Teaching Assistant, Rapid Switch – The Energy Transition (ENE 372; Undergraduate)</i>	Spring 2020
Developed and taught precepts on energy systems analysis, systems dynamics (VenSim software), stakeholder analysis, scenario analysis, and cash flow analysis	
<i>Lead Instructor, Energy and Climate Scholars (Princeton Day School; 10-12 grade)</i>	2019 - 2021
- From 2020-2021, Organized cohort of 20 graduate students in teaching monthly sessions on climate change, energy, and environmental issues to 25 local high school students - From 2019-2021, taught five sessions and developed role-playing exercises on climate impacts and policy	
University of Calgary	
<i>Teaching Assistant, Life Cycle Assessment for Professionals (Industry professionals)</i>	Summer 2011
Advised energy industry professionals on incorporating LCA methods into company-specific projects (12 students)	
<i>Teaching Assistant, Life Cycle Assessment (ENEE 503; Undergraduate)</i>	Spring 2011
Prepared tutorials on SimaPro LCA software and graded exams and students’ final projects (35 students)	

Sustainability Professional Experience

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- World Bank** Washington, D.C.
Environment and Natural Resources Intern June 2018 – Aug. 2018
- Wrote two working papers on natural capital valuation of water and forestry resources in Nepal, which were incorporated in published Nepal Environmental Sector Diagnostic report
- University of Calgary** Calgary, AB
Research Associate Oct. 2016 – April 2017
- As part of three-person team, developed technology assessment methods to evaluate emerging low-carbon technologies as part of \$75 million Canada First Research Excellence Fund
 - Developed generalizable life cycle model to evaluate carbon capture and utilization technologies
- ConocoPhillips Canada** Calgary, AB
Sustainable Development Performance Coordinator March 2013 – Sept. 2016
- Led sustainability risk assessment process for company with over 30 subject matter experts
 - Led a cross-company project involving 40 subject matter experts to identify and document key performance indicators for measuring sustainability performance
- Oil Sands Leadership Initiative** Calgary, AB
Project Coordinator Jan. 2012 – March 2013
- Drafted report on commercializing synthetic biology research for oil sands applications
 - Coordinated year-end financial and qualitative reporting for 2011 OSLI projects (\$30MM budget)
- Consulate General of Canada** San Francisco, CA
Public Affairs Intern Oct. 2008 – March 2009
- Wrote research reports on California Low Carbon Fuels Standard and its impact on Canadian energy sector

Service

Professional Service

- 2026 Session convener, “Fault Lines and Feedbacks: Modelling Interacting Shocks and Governance in Complex Systems”, *International Environmental Modelling & Software Society*
- Manuscript reviewer, *PLoS One*
- 2025 Session co-convener, “Advances in Modeling and Governing Interacting Shocks in the Anthropocene”, *American Geophysical Union*
- Session chair, “Climate and Demographic Futures”, *Population Association of America*
- Manuscript reviewer, *Frontiers in Climate, Population and Environment*
- 2024 Manuscript reviewer, *Population and Environment*
- 2023 Manuscript reviewer, *Environmental Modelling & Software*
- 2022 Manuscript reviewer, *Journal of Rural Studies*
- 2021 Manuscript reviewer, *Current Research in Environmental Sustainability*

University Service

- 2026 *Member, Penn State Geosciences Executive Committee*
Member, Penn State Geosciences Admissions Committee
- 2025 *Judge, Penn State Interdisciplinary Environmental Research Symposium*
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- 2023-2024 *Member, **BU Earth and Environment Diversity, Equity, and Inclusion Committee***
- Organize bi-weekly DEI committee meetings
- 2022 *Co-Founder, **Princeton Environmental Justice Reading Group***
- Organized a monthly reading group on environmental justice research, convening 20 graduate students from 6 departments
- 2020-2022 *Board Member, **Princeton Center for Jewish Life***
- One of two graduate student board members to advise programming decisions
- 2018-2022 *Steering Committee Member, **Princeton MAVRIC***
- Facilitate meetings and bi-weekly discussion group for Men's Allied Voices for Respectful and Inclusive Communities, an organization with the SHARE Office with the goal of promoting gender equity and healthy masculinity on campus
- 2020-2021 *Graduate Student Mentor, **Princeton Climate Action Plan Team***
- Coordinate weekly meetings and advise team of 20 Princeton undergraduate students conducting environmental and economic analyses for Princeton's Climate Action Plan
- 2020 *Team Lead, **Levin Lab Diversity Committee***
- Led committee of 9 graduate students and postdocs that provided recommendations to Ecology and Evolutionary Biology department in hiring faculty from underrepresented backgrounds
- 2019 *Graduate Student Mentor, **Princeton Environmental Ideathon***
- Presented three workshops on life cycle assessment for undergraduate "hackathon" on policies to address environmental issues
- 2018 *PhD Representative, **Princeton Public Policy School Action Committee***
- Represented PhD students in Princeton's Public Policy graduate student committee

Community Engagement

- 2020 *Member, **New Jersey Student Climate Advocates***
- Developed and advocated for a carbon-price policy in New Jersey as part of a team of 50+ high school, undergraduate, and graduate students
- 2016-2017 *President, **Engineers Without Borders Calgary***
- Led a 40-member chapter of volunteers with four active campaigns on global and local inequality issues, including Fair Trade town certification, setting a local Sustainable Development Goal (SDG) agenda, and foreign aid advocacy

Language and Technical Skills

Language skills: French (fluent); Spanish (advanced); Mandarin (intermediate); Portuguese (intermediate); Hebrew (beginner), Hindi (beginner)

Computer skills: Python 3.0 (proficient); Matlab (proficient); STATA data analysis software (intermediate); ArcGIS (intermediate); NetLogo (intermediate); VenSim (intermediate); SimaPro LCA software (intermediate); R (intermediate)

Research methods: Agent-based modelling, game theory; econometric analysis; household surveys; robust decision-making; life cycle analysis

Professional Memberships

American Geophysical Union

International Environmental Modelling & Software Society

American Association of Geographers

Population Association of America

Society for Decision-Making under Deep Uncertainty