Elinor Benami

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Appointments and Affiliations

Assistant Professor, Virginia Tech *Aug. 2020 - present*
Agricultural and Applied Economics Department

Impact Area Co-Lead for Agricultural Insurance & Finance *Fall 2022 - present*
NASA Harvest (NASA Global Food Security and Agriculture Consortium)

Faculty Affiliate *Spring 2021 - present*
VT Remote Sensing & Global Change Center Interdisciplinary Graduate Education Programs

Faculty Affiliate *Summer 2020 - 2025*
Stanford Regulation, Evaluation, and Governance Lab

Education & Training

Postdoctoral Scholar, University of California Davis *Nov. 2018 - Aug. 2020*
Innovation Lab for Markets, Risk, and Resilience/Agricultural and Resource Economics
Mentor: Michael Carter

Ph.D., Stanford University *Aug. 2013 - Oct. 2018*
Emmett Interdisciplinary Program in Environment & Resources
Co-Advisors: Marshall Burke and Eric Lambin
Fields: Production Economics and Land System Science

B.A., The University of North Carolina at Chapel Hill *Aug. 2006 - May 2010*
Economics major, Environmental Studies & Sciences minor
Honors and Distinction, Phi Beta Kappa

Publications & Presentations

Peer-Reviewed Publications

†Advisee (graduate student or postdoctoral scholar) at the time of the work. *Joint first authors.

13. **Benami, E.**, Jo, N., Ragnauth, B., Ho, D.E. 2026. *Journal of the Association of Environmental and Resource Economists*. "Drop a Line, Submit on Time? Randomized Tailored Reminders Improve Pollution Reporting Timeliness."

12. Kirchner, E.*†, **Benami, E.***, Hobbs, A.W., Carter, M.R., Jin, Z. 2026. *Journal of Development Economics* 180: 103658. "Get in the Zone: The Risk-Adjusted Welfare Effects of Data-Driven vs. Administrative Borders for Index Insurance Zones." *Joint first authors.

11. **Benami, E.**, Carroll, A.†, Messer, K.D., Zhang, W., Cecil, M.† 2025. *Agricultural Economics* 56(3): 457–473. "Seeding Change: Growing Insights from Four Programs to Support Climate-Resilient Soil and Water Conservation in US Agriculture."

10. Saunders, A.†, Tellman, B., **Benami, E.**, Anchukaitis, K., Hossain, S., Bennett, A., Islam, A.K.M. Saiful, Giezendanner, J. 2025. *Earth's Future* 13(9). "Sensitivity to Data Choice for Index-Based Flood Insurance."

9. **Benami, E.**, Ramanujan, R.†, Cecil, M.J.† 2025. *Agricultural and Resource Economics Review* 54(3): 687–704. "Rain Check: How Data Details Influence Payout Determinations in a U.S. Rainfall Index Insurance Program."

8. Lin, C., Zhou, J., Yin, L., Bouabid, R., Mulla, D., **Benami, E.**, Jin, Z. 2024. *ISPRS Journal of Photogrammetry and Remote Sensing* 217: 18–31. "Sub-National Scale Mapping of Individual Olive Trees Integrating Earth Observation and Deep Learning."

7. Fisher, C., **Benami, E.**, Dolk, M., Baldwin, J., Becker-Reshef, I., Cuppari, R.I., Dalhaus, T., Hobbs, A., Leckebusch, G., Lacovara, P., Sobel, A.H., Tellman, B. 2024. *Journal of Catastrophe Risk and Resilience* 2(1). "Bridging Science and Practice to En(in)sure Resilience in a Changing Climate."

6. **Benami, E.**, Carter, M.R. 2021. *Applied Economic Perspectives and Policy* 43(4): 1196–1220. "Can Digital Technologies Reshape Rural Microfinance? Implications for Savings, Credit, & Insurance."

5. **Benami, E.***, Jin, Z.*, Carter, M.R., Kenduiywo, B., Ghosh, A., Hobbs, A.W., Hijmans, R., Lobell, D. 2021. *Nature Reviews Earth & Environment* 2: 140–159. "Uniting Remote Sensing, Crop Modelling, and Economics for Agricultural Risk Management." *Joint first authors.

4. **Benami, E.**, Whitaker, R., La, V., Lin, H., Anderson, B., Ho, D.E. 2021. *Peer-reviewed proceedings of the ACM Conference on Fairness, Accountability, and Transparency (FAccT)*: 90–105. "The Distributive Effects of Risk Prediction in Environmental Compliance: Algorithmic Design, Environmental Justice, and Public Policy."

3. Hino, M.*, **Benami, E.***, Brooks, N. 2018. *Nature Sustainability* 1(10): 583–588. "Machine Learning for Environmental Monitoring." *Joint first authors.

2. **Benami, E.**, Curran, L.M., Cochrane, M., Venturieri, A., Moraes Franco, R., Kneipp, J., Swartos, A. 2018. *Environmental Research Letters* 13(3): 034037. "Oil Palm Land Conversion in Pará, Brazil, from 2006–2014: Evaluating the 2010 Brazilian Sustainable Palm Oil Production Program."

1. Carley, S., Lawrence, S., Brown, A., Nourafshan, A., **Benami, E.** 2011. *Renewable and Sustainable Energy Reviews* 15(1): 282–295. "Energy-Based Economic Development."

Book Chapters in *Geospatial Impact Evaluation in Practice, eds. A. BenYishay & K. Singh, coming ∼Dec. 2026)*

3. Michler, J.D., Josephson, A., **Benami, E.**, Behrer, P., Cecil, M.J.†, Gourlay, S., Heilmayr, R., Kirchner, E.†, Maskell, G., "Treatment Geometry: Design Choices for Integrating Earth Observation and Socioeconomic Data."

2. **Benami, E.**, Cecil, M.†, Josephson, A., Maskell, G., Michler, J. "Integrating Weather and Land Cover Data into Geospatial Evaluations."

1. D'Agostino, A., Usmani, F., **Benami, E.** "Causal Inference and Counterfactuals in Earth Observation Research."

Working Papers & Works in Progress

6. **Benami, E.**, Kirchner, E.†, Rejesus, R., & Chen, Z. (2026). *From practices to prices: Cover crops, tillage, and land values across regions and scales* [Manuscript in preparation].

5. Poghosyan, A.†, **Benami, E.**, Brunelin, S., & Ng, O. (2026). *Measures and mediators of drought-related household vulnerability to poverty in Niger* [Manuscript under revision for resubmission to *Journal of Development Studies*].

4. Carroll, A.†, **Benami, E.**, & Cecil, M.J.† (2026). *Forecasts and adverse selection in index insurance* [Manuscript in preparation].

3. Cecil, M.J.†, **Benami, E.**, Carroll, A.†, Yu, J., & Ifft, J. (2026). *Rainfall index insurance under exceptional drought: Payout alignment and producer response* [Under review].

2. **Benami, E.**, Carroll, A.†, & Messer, K. (2026). *How and where do financial incentives promote adoption of conservation (regenerative) agricultural practices? A $54 million experiment among US producers* [Manuscript in preparation].

1. **Benami, E.**, Becker-Reshef, I., Kirchner, E.†, Cecil, M.J.†, & Chautems, M. (2026). *Opportunities for EO to help derisk the transition to sustainable agricultural systems* [Manuscript in preparation].

Reports & Other Publications

7. Cecil, M.†, Kirchner, E.†, **Benami, E.**, Sahajpal, R., Franch, B., Kalecinski, N., Moletto-Lobos, I., Sadeh, Y., Justice, C. 2026. *NASA Harvest.* "How to Choose Between NASA Harvest Crop Yield Models."
6. Becker-Reshef, I., Whitcraft, A., Justice, C., **Benami, E.**, Humber, M., Rejesus, R. 2026. Public Comment in Response to Request for Information on Opportunities, Challenges, and Emerging Areas in Statistical Data, Analysis, and Research at the U.S. Department of Agriculture, with NASA Harvest/Acres.
5. **Benami, E.**, Messer, K.D. 2026. *Center for Behavioral and Experimental Agri-Environmental Research (CBEAR) Behavioral Insight Brief.* "Enrollment Isn't Impact: Designing Conservation Programs to Improve Contract Completion."
4. Rodolfa, K., Ho, D.E., Honigsberg, C., **Benami, E.** 2023. Public Comment on U.S. EPA's Draft National Enforcement and Compliance Initiatives for Fiscal Years 2024–2027.
3. **Benami, E.**, Ho, D.E., McDonough, A. 2020. *Stanford Institute for Economic Policy Research: Policy Brief.* "Innovations for Environmental Compliance: Emerging Evidence and Opportunities."
2. Zuckerman, J., Deason, J., **Benami, E.** 2013. *Climate Policy Initiative report.* "Targeting Proposition 39 to Help California's Schools Save Energy and Money."
1. Pierpont, B., Varadarajan, U., Hobbs, A., **Benami, E.** 2013. *Climate Policy Initiative report.* "Improving Solar Policy: Lessons from the Solar Leasing Boom in California."

Selected Invited Presentations

2026: Building Bridges for Sustainable Finance (Geneva, Switzerland), GeoField at the Food and Agriculture Organization (Rome, Italy), American Geophysical Union Fall Meeting (invited), SCC-76 Economics & Managememnt of Risk in Agriculture and Natural Resources at the Federal Reserve Bank, Kansas City (Advisee presented)

2025: VT Global Change Center Spring Forward, University of Michigan, University of Tennessee-Knoxville Baker Policy Center, James Madison University Economics Seminar Series

2024: International Conference of Agricultural Economists (New Delhi, Invited Plenary Talk), Northeastern Agricultural and Resource Economics Association (Workshop Keynote, Measuring and Enhancing Resilience of United States Rural Communities in the Context of Climate Variability), Kansas State University, Virginia Cooperative Extension, University of Göttingen (Germany), University of Warwick (Data, Information, and the Environment Workshop), American Geophysical Union Fall Meeting (invited speaker)

2023: Arizona State University, University of Minnesota, Agricultural & Applied Economics Association (AAEA) Annual Meeting, Association of Environmental and Resource Economists (AERE) Annual Meeting, Southeastern Workshop on Energy & Environmental Economics and Policy (SWEEEP) at Georgia Tech, Property and Environment Research Center (PERC), Virginia Cooperative Extension, EPA's Office of Compliance National Targeting Center (EPA-State Clean Water Act Joint Community of Practice)

2022: University of Chicago Machine Learning in Economics Workshop, American Geophysical Union (AGU), Online Agricultural and Resource Economics Seminar (OARES), NC Center for Environmental and Resource Economic Policy (CEnREP), Appalachian Power, Virginia Tech CNRE Geography Colloquium, VT Ecological Forecast Project Inaugural Fest and Feast

2020: EPA E-Enterprise for the Environment National Meeting ECOS Webinar For Practitioners, Virginia Tech

2019: The Workshop in Environmental Economics and/or Data Science (TWEEDS), American Geophysical Union (AGU), University of Maryland, UC Berkeley Course on Data, Environment, and Society; California Water Data Science Symposium; UC Davis

2018: University of Leicester, UK; American Geophysical Union (AGU), Association of Tropical Biology and Conservation Annual Meeting, Brazilian Agricultural Research Corporation (EMBRAPA - *in Portuguese*), Federal University of Lavras, Minas Gerais, Brazil (*in Portuguese*)

2016: Brazilian National Institute for Space Research (INPE) in Belém do Pará (*in Portuguese*)

Selected Grants, Fellowships, & Honors

VT Institute for Society, Culture, and Environment (ISCE) Scholar (∼30,000)	*2026 - 2027*
Gates Foundation: AI-enabled Data for Agriculture Products & Transformation (∼170k of ∼$5mil grant)	*2026 - 2028*
VT Early Career Scholarly Impact Award Nominee	*2025*
Insurance and Finance Co-Lead for NASA Harvest, Co-PI (∼$650k of $15mil grant)	*2023 - 2028*
VT Alliance for Climate Smart Agriculture, Co-PI (∼$550k of $80mil grant)	*2023 - 2027*
VT CALS Strategic Plan Integrated Internal Competitive Seed Grants Program, PI ($75,000)	*2023 - 2024*
NASA Land-Cover and Land-Use Change Early Career Scientist Grant, Co-Lead PI (∼$212k of $449,560)	*2020 - 2023*
Stanford Impact Labs Grant for Modernizing Environmental Compliance, Co-PI	*2020 - 2022*
PERC Lone Mountain Summer Fellow	*2023*
Association of Environmental and Resource Economists (AERE) Scholar	*2022*
Rising Environmental Leaders Program, Stanford University	*2018*
Preparing Future Professors Program, Stanford University & Foothill College	*2018*
NSF Dissertation Improvement Grant ($15,945)	*2017*
E-IPER Summer Graduate Research Grant, Stanford University (total $12,000)	*2014 - 2017*
McGee Levorsen Grant, Stanford School of Earth, Energy, & Environmental Sciences ($6,000)	*2014 - 2015*
NSF Graduate Research Fellowship ($96,000 + 3 years tuition)	*2013 - 2017*
Teresa Elms and Robert D. Lindsay IPER Fellowship (total $64,000 + tuition)	*2013 - 2014*
UNC-Chapel Hill Order of the Golden Fleece	*2009*
Eve Marie Carson Scholar, UNC-Chapel Hill (One Year of Tuition and $5,000 of Summer Funding Support)	*2009*
Morris K. and Stewart L. Udall Scholar ($5,000)	*2008*

Selected Professional Experience

Consultant, *Climate Policy Initiative* *06/2016 - 09/2016*
Evaluated strategic opportunities for sustainable land use finance investments for philanthropic partners that have disbursed over $200mil. to address social and environmental impacts of land uses.

Analyst, *Climate Policy Initiative* *12/2010 - 07/2013*

- Conducted interviews and co-wrote report on ways that California public schools can target a newly authorized $2.75bil. state fund for energy efficiency to save energy & money.
- Co-authored report on the role of the leasing model on California's solar deployment and costs.
- Contributed to development of organization's new tropical resource productivity program in Indonesia:
  - Wrote briefs on international tropical forest conservation programs, the eligibility of oil palm as a feedstock under the U.S. Renewable Fuel Standard, and ecosystem assessment processes.
  - Co-drafted $2mil. grant on joint agricultural production and ecosystem protection project in Indonesia.

Teaching

Remote Sensing in the Social Sciences *Fall 2021, 2022, 2024, 2026*
Instructor of Record, Masters/PhD Graduate Course, Virginia Tech

Climate Risk Management *Fall 2023*
Instructor of Record, Upper Level Undergraduate Course, Virginia Tech

Environmental and Sustainable Development Economics *Spring 2021, 2022*
Instructor of Record, Undergraduate Course, Virginia Tech

The Economics of Index Insurance *Summer 2019*
Co-Instructor of Short Course for Remote Sensing Specialists in Nairobi, Kenya

Environmental Governance *Spring 2018*
Teaching Assistant, Stanford University

ECON/ESS 106/206: World Food Economy *Spring 2016*
Teaching Assistant, Stanford University

Honors Seminar on Energy in Transition: De-Carbonizing America *Spring 2010*
Teaching Assistant, UNC - Chapel Hill

NC Fellows Leadership Development Sophomore Seminar *Fall 2009*
Teaching Assistant, UNC - Chapel Hill

Student and Postdoc Advising

Unless otherwise noted, students are affiliated with Virginia Tech's Department of Agricultural and Applied Economics.

Postdoctoral Scholars
Yingchen Xu (formerly University of Florida and Columbia), 2026 - present
Ella Kirchner, 2024–2026 (VT Presidential Postdoc; now Assistant Professor of Business Economics, Wageningen Uni.)
Michael J. Cecil, 2024–present (University of Maryland, Geographical Sciences/NASA Harvest)

Advisor, Degree and Completion Date:
Anne Carroll, PhD, Expected ∼2029
Shengke (Ivy) Wang, PhD, Expected ∼2031
Armine Poghosyan, PhD, 2024 (co-advised; now Tennessee State University)
Ram Ramanujan, MS Computer Science, 2024 (co-advised; now Microsoft)

Committee Member, Degree and (Expected) Completion Date:
Alex Saunders, PhD Geography, Development, and Environment (University of Arizona), Expected ∼2027
Matthew Mair, PhD, Expected May 2028
Yi-Tien Lu, PhD, Expected May 2029
Nitheshnirmal Sadhasivam, PhD Geosciences, Expected May 2027
Yuetong Zhang, PhD, 2025 (now Postdoctoral Scholer, UNC-Chapel Hill Data Driven Lab with Angel Hsu)
Kristen Swedberg, PhD, 2024 (now PRODiG+ Postdoctoral Fellow, Binghamton University)
Maguette Sembene, MS, 2023 (now VT AAEC PhD)

Service & Community Involvement

Advisory Boards & Panels: Member, State of the Profession Panel for the Decadal Survey for Earth Science and Applications from Space 2028-2037, National Academies of Sciences, Engineering, and Medicine; Member, Fields of the World User Advisory Group Taylor Geospatial Institute (2026–present)

Journal Referee (selected): *Nature Communications; Journal of Environmental Economics and Management; Journal of Development Economics; American Journal of Agricultural Economics; Nature Communications Earth & Environment; Applied Economic Perspectives and Policy; Food Policy; Agricultural Economics; Public Administration; NeurIPS, Land Use Policy; Climatic Change; QOpen; AGU Advances; Environmental Research Letters*

Grant Reviews: NSF; CGIAR; USAID Markets, Risk, & Resilience Innovation Lab; VT Global Change Center Graduate PhD Fellowship; VT Presidential Postdoc Fellowship

Abstract Submission Reviewer: Association of Environmental and Resource Economists (AERE), Agricultural & Applied Economics Assoc. (AAEA) & European Assoc. of Agricultural Economists (EAAE)

Co-convener at the American Geophysical Union (2019-2025): *Applications at the Intersection of Science, Practice, and Policy to Proactively Address Natural Hazard Risk (2025 and 2026); Applications of Science, Practice, and Policy to In(en)sure Sustainable Development Through Risk Transfer (2023);Transferring Risk: Bridging science,*

practice and policy to in(en)sure sustainable natural peril risk transfer/financing applications (2022); Bridging the Gap Between Science & Practice to Improve Understanding of Natural Peril Risk For Risk Transfer & Risk Finance (*2021*); *Innovations in Risk Transfer Solutions using Earth Observations, Weather Data, Physical Models, and Short to Long Term Forecasts* (*2020*); *Advances in remote sensing, machine learning, and economics to improve risk management and evaluate impacts in socio-environmental systems* (*2019*)

University Service:

Search Committees: Assistant/Associate Professor of Environmental Security and Global Change for VT Geography (2026); Research Associate/Scientist with NASA Harvest (2026, *Chair*); Research Scientists, Alliance for Climate Smart Agriculture (2024-2025); Research Associate/Postdoctoral Scholar with NASA Harvest (2023-2024, *Chair*); Data Science for the Public Good Research Assistant Professor (2023); and Computational Economics (2021-2022); VT College of Agricultural and Life Sciences Associate Research Dean & Director, Virginia Agricultural Experiment Station (2022-2023)

Department Committees: Governance (2026 - present), Seminar Speakers (2021-present); VT AAEC Graduate Advisory (2022-2024); Diversity and Inclusion (2020-2021); Communication (2022-2024)

Other: College of Agricultural and Life Sciences Committee on International Programs and Policies (CIPP), part of CALS Governance (2026-present)

Languages*

English, native; **German**, advanced (C1 - C2), scored "very good/sehr gut" on Zertifikat Deutsch für den Beruf (B2); **Brazilian Portuguese**, intermediate - advanced (B2); **Spanish** & **French**, basic - intermediate (A2 - B1)

**Letter scale corresponds to Common European Framework of Reference for Languages*

Professional Affiliations

Agricultural and Applied Economics Association, Association of Environmental and Resource Economists, American Geophysical Union, International Association of Agricultural Economists (IAAE)

Additional Skills

Proficient user of R, LaTeX, Google Earth Engine, GitHub, ArcGIS, Stata

Last updated: November 2026