

BERNARDO A. BASTIEN-OLVERA

CURRICULUM VITAE

MAY 2024

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Scripps Institution of Oceanography
8622 Kennel Way, La Jolla, CA 92037

EDUCATION

- PhD** Geography
University of California Davis. September 2022
Dissertation: “Climate change impacts on natural capital:
consequences for human well-being and macro-economic growth”
Recipient of the Kinsella Memorial Prize for exceptional dissertation
- MSc** Climate Change
University College London. September 2017
Dissertation: “A methodological proposal for modeling climate
change impacts in national energy systems: the case of Mexico”
- BSc** Earth Science
National Autonomous University of Mexico. June 2015
Visiting Student:
University of California Berkeley
Ecole Polytechnique de Montreal

ACADEMIC APPOINTMENTS AND DISTINCTIONS

- Institutional Postdoctoral Fellow** 2022 - Present
Scripps Institution of Oceanography
University of California San Diego
- Affiliated Scientist** 2024 - Present
RFF-CMCC European Institute on Economics and the Environment (EIEE)
Fondazione Centro Euromediterraneo sui Cambiamenti Climatici (CMCC)
- Beijer Young Scholar** 2024 - Present
Beijer Institute of Ecological Economics
The Royal Swedish Academy of Sciences
- Candidato a Investigador Nacional** 2023 - Present
Sistema Nacional de Investigadores
Consejo Nacional de Humanidades Ciencias y Tecnologías, Mexico.
- National Geographic Explorer** 2021 - Present
National Geographic Society

PUBLICATIONS

Refereed Journal Articles

- 2024 **Bastien-Olvera, B.A.**, Conte, M.N., Dong, X., Briceno, T., Batker, D., Emmerling, J., Tavoni, M., Granella, F & Moore, F.C. (2024) Unequal Climate Impacts on Global Values of Natural Capital. *Nature*, 625(7996), 722-727.
- 2023 **Bastien-Olvera, B. A.**, Batker, D., Soares, J., Day, J., Boutwell, L., & Briceno, T. (2023). Wetland Loss in Coastal Louisiana Drives Significant Resident Population Declines. *Sustainability*, 15(11), 8941. <http://dx.doi.org/10.3390/su15118941>
- 2022 Bastien-Montoya, G.M., **Bastien-Olvera, B.A.**, Pilatowsky-Gruner, R., & Gay García G. (2022). Importancia relativa de los conceptos erróneos sobre el cambio climático. *Enseñanza y Comunicación de las Geociencias*, 1(2).
- 2022 **Bastien-Olvera, B. A.**, & Moore, F. C. (2022). Climate Impacts on Natural Capital: Consequences for the Social Cost of Carbon. *Annual Review of Resource Economics*, 14, 515-532.
- 2022 **Bastien-Olvera, B. A.**, Granella, F. & Moore, F. C. (2022). Persistent effect of temperature on GDP identified from lower frequency temperature variability. *Environmental Research Letters*, 17(8), 084038.
- 2021 **Bastien-Olvera, B. A.**, & Moore, F. C. (2021). Use and non-use value of nature and the social cost of carbon. *Nature Sustainability*, 4(2), 101-108.
- 2019 **Bastien-Olvera, B. A.** (2019). Business-as-usual redefined: Energy systems under climate-damaged economies warrant review of nationally determined contributions. *Energy*, 170, 862-868.

Peer Reviewed Full Text in Conference Proceedings

- 2019 McGlynn, E. F., Favero, A., & **Bastien-Olvera, B. A.** (2019). Accounting for albedo changes in forest climate mitigation: Effects on efficient forest area and global carbon prices. In *2019 Annual Meeting, July 21-23, Atlanta, Georgia* (No. 291127). Agricultural and Applied Economics Association.
- 2017 Gay-Garcia, C., **Bastien-Olvera, B.**, Vidal-Aguirre, V., & Pelcastre-Sicardo, J. (2017). Fuzzy Inference Systems as Geographic Patterns of Climatic Warming over Mexico. In *Proceedings of the 7th International Conference on Simulation and Modeling Methodologies, Technologies and Applications*. DOI: 10.5220/0006485604510457

- 2017 **Bastien-Olvera, B.**, Bautista Gonzalez, E., & Gay Garcia, C. (2017). An Agent-based Model of Food-borne Diseases Under Climate Change Scenarios in Mexico City. In *Proceedings of the 7th International Conference on Simulation and Modeling Methodologies, Technologies and Applications*. pages 474-479.
- 2016 A. S. Vargas, C. G. Garcia, D. M. Ventura, A. L. H. Merino and **B. A. Bastien-Olvera**. (2016). Agent based modeling simulation for land use change and cost-benefit analysis of land management policies. In *Proceedings of the 6th International Conference on Simulation and Modeling Methodologies, Technologies and Applications*.
- 2016 **Bastien-Olvera, B.A.**, Gay-Garcia, C. (2016). The Importance of Increasing Actual INDCs Ambitions to Meet The Paris Agreement Temperature Targets. In *Proceedings of the 6th International Conference on Simulation and Modeling Methodologies, Technologies and Applications*. pages 363-367. DOI: 10.5220/0006014703630367. ISBN:978-989-758-199-1
- 2016 **Bastien-Olvera, B.A.**, Gay-Garcia, C. (2016). FACTS: Fuzzy Assessment and Control for Temperature Stabilization – Regulating Global Carbon Emissions with a Fuzzy Approach to Climate Projections. In *Proceedings of the 6th International Conference on Simulation and Modeling Methodologies, Technologies and Applications*, pages 357-362. DOI: 10.5220/0006011603570362. ISBN:978-989-758-199-1
- 2015 **Bastien-Olvera, B.A.**, Gay-Garcia, C. (2015). Global Surface Temperature Model using Coupled Sugeno Type Fuzzy Inference Systems and Neural Network Optimization. In *Proceedings of the 5th International Conference on Simulation and Modeling Methodologies, Technologies and Applications* (MSCCES-2015), pages 519-525 DOI: 10.5220/0005524805190525

Book Chapters

- 2019 **Bastien-Olvera, B. A.**, Carreño-Najera H., Estrada-Porrúa, F. (2019). Chapter: “Caminos paralelos: división metodológica entre las negociaciones de internacionales de cambio climático y la economía climática” in *¿Aún estamos a tiempo para el 1.5C?* , pp.51-67. Ed. Rueda-Abad JC. UNAM, PINCC, 2019. ISBN: 978-607-30-2099-2
- 2017 **Bastien-Olvera, B.A.**, Gay-García C. (2017). Chapter: “Incertidumbre científica y el avance en los modelos climáticos” in *La Gobernanza Climática en México. Volumen II, Retos y Opciones*, pp.37-53, UNAM, PINCC, 2017. ISBN: 978-607-02-9769.

- 2016 **Bastien-Olvera, B.A.**, Gay-García C., Estrada-Porrúa, F. (2016). Chapter: “¿Es factible el 1.5°C de elevación de la temperatura en los acuerdos de París?” in *21 visiones de la COP 21*, pp.43-56, UNAM, PINCC, 2016. ISBN: 978-607-02-8439-.

Manuscripts in Press

- In Prep. Navarro-Perez, D.A., Ramírez-Salazar, A., Barragán-Montilla S., Garcia Arredondo M., Rodríguez Sepúlveda N., Venturi O., Marín A.R., Gómez Correa M.A., Micalizio C.S. & **Bastien-Olvera B.A.** (In Press) GeoTraductores: a Collaborative Initiative Democratizing Science Communication in Latin America. *Community Science Journal*.

Manuscripts in Review

- In Prep. **Bastien-Olvera, B.A.**, Aburto, O., Favoretto, F., Amaya, D., Paolo, E. & Ricke K. (In Review) Climate Change Projected to Increase Mangrove Internal Degradation Despite Reduced Area Loss. *One Earth*.

Manuscripts in preparation

- In Prep. **Bastien-Olvera, B.A.**, Emmerling, J., Granella, F., Veerschur, J., Free, C. & Ricke K. (In Preparation) Climate Change Impacts on the World’s Ocean-based Economies and Services.

AWARDS

- 2023 **Kinsella Memorial Prize Award UC Davis**
High quality, original, multidisciplinary Ph.D. dissertation of the year in the College of Agricultural and Environmental Sciences at UC Davis.
- 2020 **John Muir Institute for the Environment Fellow**
University of California Davis
- 2020 **The Green Fund Initiative Fellow**
University of California Davis
- 2020 **Big Ideas Award**
University of California Berkeley
- 2019 **Blum Institute for Developing Economies**
University of California Berkeley

- 2019 **Centennial Grant Fellowship**
American Geophysical Union
- 2017 **Fulbright-Garcia Robles Fellowship**
Fulbright
- 2016 **Santander's Masters Scholarship**
Santander
- 2015 **Francisco Medina Martinez Award**
Unión Geofísica Mexicana
- 2015 **Mitacs Globalink Award**
Canadian Government

TEACHING EXPERIENCE

University of California Davis

- ENV200b **Environmental Policy Analysis.**
Environmental Science and Policy Department. PhD and Masters level.
Teacher Assistant and Discussion Leader. Responsibilities: Grading essays, hosting office hours, leading discussions, deliver guest lecture. Instructor: Fran Moore. Winter 2022.
- ESP 168a **Methods of Environmental Policy Evaluation.**
Environmental Science and Policy Department. Undergraduate level.
Teacher Assistant and Discussion Leader. Responsibilities: Grading essays, designing quizzes, hosting office hours, leading discussions, deliver guest lecture. Instructor: Fran Moore. Fall 2017 (Reader), Fall 2018, Fall 2019.

National Autonomous University of Mexico

- Cli. Ph. **Climate Physics.**
School of Sciences. Undergraduate level.
Teacher Assistant. Responsibilities: Grading exams, designing quizzes, hosting office hours, leading discussions, deliver guest lecture. Instructor: Harry Alvarez. Fall 2014.
- S.M. Atm **Selected Methods for Atmospheric Sciences.**
School of Sciences. Undergraduate level.
Teacher Assistant. Responsibilities: Grading exams, designing quizzes, hosting office hours, leading discussions, deliver guest lecture. Instructor: Anais Vermonden. Fall 2012.

Planeteando Summer School on Earth Science and Climate Justice Communication

Stry Sci. **Storytelling of Science.**
Open to all levels. *Instructor on record.*
Summer 2022, Summer 2021, Summer 2020.

Informal Education Group for children

Env. Soc. Ld. Environment, society, and leadership. Instructor on record. Kids 8-12. All weekends from 2013 and 2014.

MENTROSHIP EXPERIENCE

2023 **Undergraduate Research Mentor**
Scripps Institution of Oceanography
Mentored an undergraduate student researching climate impacts on marine ecosystems. Provided training in programming, econometric methods, and best research practices.

2019-2023 **Mentor for Science Communication Projects**
National Autonomous University of Mexico
Guided more than 10 undergraduate students from diverse majors—including Earth Sciences, Biology, Theater, Art, and Design—in projects focused on improving science communication and dissemination.

2019 **Project Mentor for Climate Change Communication**
UC Davis
Advised an undergraduate student-led initiative aimed at communicating climate change impacts in marginalized communities through media creation.

EDUCATIONAL PROJECTS

2023 **Teacher / Researcher Collaborative** (Winter 2023). Initiative that brings together K-12 educators in San Diego County with local researchers for collaborative learning. San Diego Science Project from UC San Diego and San Diego County Office of Education. *Co-designer and Guest Speaker.* [Link to pilot session.](#)

2022 **Climate Change Misconceptions in Students** (2022). Research project investigating and ranking common climate change misconceptions at the Universidad Autonoma Metropolitana in Mexico. *Survey designer, statistical analysis and writer of original manuscript.* [Link to Research Article.](#)

2022 **Collaborative Summer School for Climate Justice Leaders** (August 2022). Summer workshops on climate crisis and communication for local

environmental leaders across Mexico. *Principal Investigator, Curriculum Designer, Workshop Facilitator.*

- 2021 **Curricular Videos for Geography & Science Instruction.** (2021)
Collaborative Creation of Educational Videos with Mexican High School Teachers. *Principal Investigator, Scriptwriter, Host, Editor.* [Link to audiovisual material.](#)

RESEARCH EXPERIENCE

- 2022 – Postdoctoral Researcher in Environment and Policy Group at Scripps Institution of Oceanography, University of California San Diego
- 2022 – Postdoctoral Researcher in The Center for Marine Biodiversity and Conservation at Scripps Institution of Oceanography, University of California San Diego
- 2017 – 2022 Graduate Student Research in Dr. Fran Moore’s research group at the University of California Davis.
- 2015 – 2016 Red Nacional de Investigación Multidisciplinaria en Cambio Climático, Programa de Investigación en Cambio Climático, National Autonomous University of Mexico.
- 2013 – 2016 Fuzzy Logics and Climate Change Modeling Group, Programa de Investigación en Cambio Climático, National Autonomous University of Mexico.
- 2012 – 2013 Paleoclimatology Research Group, Geology Department, National Autonomous University of Mexico.

CONFERENCE ACTIVITY

Organizer

- 2019 Mexican, Latinx and Chicanx Academic Symposium. University of California Davis, May 11, 2019. Chair.
- 2018 Transdisciplinary collaboration between academia and California-Mexico relations. Discussion session at the General Mexican Consulate in Sacramento.
- 2013 IV Congreso Nacional de Estudiantes en Ciencias de la Tierra. Facultad de Ciencias, Universidad Nacional Autónoma de México, March 20-23, 2013.

Papers presented

- 2023 Bastien-Olvera, B.A., Conte, M., Dong, X., Briceno, T., Batker, D., Emmerling, J., Tavoni, M., Granella, F., Moore, F.C. (2022). Climate-drive ecosystems migration: impacts on country-level ecosystem services and GDP. *Association of Environmental and Resource Economists Summer Conference*. Portland, Maine, May 32nd - June 1st, 2023.
- 2023 Bastien-Olvera, B.A. & Ricke, K. (2023) Blue natural capital in a cost-benefit integrated assessment model of climate change. *5th International Symposium on the Effects of Climate Change on the World's Ocean*, Bergen, Norway, April 17-21, 2023.
- 2022 Bastien-Olvera, B.A., Conte, M., Dong, X., Briceno, T., Batker, D., Moore, F.C. (2022). Biome range shifts under climate change: impacts on country-level macro-economic production and ecosystem services. *American Geophysical Union Fall Meeting*, Chicago, Il, December 12-16, 2022.
- 2022 Bastien-Olvera, B.A., Conte, M., Emmerling, J., Tavoni, M., Dong, X., Briceno, T., Batker, D., Moore, F.C. (2022). Biome range shifts under climate change: impacts on country-level macro-economic production and ecosystem services. *XXIII Annual BIOECON Conference on Biodiversity, Finance and Economy*, Exeter, United Kingdom, September 4-6, 2022.
- 2022 Conte, M.N. & Bastien-Olvera, B.A. The Value of Species: Understanding Income Effects to Inform Integration of Natural Capital into Climate Integrated Assessment Models. *XXIII Annual BIOECON Conference on Biodiversity, Finance and Economy*, Exeter, United Kingdom, September 4-6, 2022.
- 2022 Bastien-Olvera, B. A., Granella, F. & Moore, F. C. (2022). Persistent effect of temperature on GDP identified from lower frequency temperature variability. *The Occasional Workshop*, University of California Santa Barbara, April 30-May 1, 2022.
- 2021 Bastien-Olvera, B. A., Granella, F. & Moore, F. C. (2021). Efecto persistente de la temperatura sobre el PIB identificado a partir de la variabilidad de la temperatura de baja frecuencia. *Reunión Anual de la Unión Geofísica Mexicana*, Online, October 31 – November 5, 2021.
- 2021 Bastien-Olvera, B.A., Moore, F.C. (2021). El Costo Social del Carbono en Relación a los Valores de Uso y No-uso del Capital Natural. *XXIV Congreso Nacional de Geografía*, Online, October 15, 2021.

- 2019 Bastien-Olvera B.A., Pilatowsky-Gruner, R. (2019). Planeteando: Climate change video-blogging. American Geophysical Union Fall Meeting, San Francisco, December 9-13, 2019.
- 2015 Bastien-Olvera, B.A., Gay-Garcia, C. (2015). Stabilizing Global Temperature Through a Fuzzy Control on CO2 Emissions. *International Conference on Simulation and Modeling Methodologies, Technologies and Applications*, Colmar, France, July 21-25, 2015.

SERVICE TO PROFESSION

Editorial Board of the Journal Enseñanza y Comunicación de las Geociencias (Geosciences Teaching and Communication) by the National Autonomous University of Mexico (2021-present).

Member of the American Geophysical Union Global Engagement Committee (2020-present).

Manuscript reviewer for: Nature Climate Change; Nature Sustainability; Scientific Reports; Environment, Development and Sustainability.

ADDITIONAL TRAINING

- 2023 Storyteller collective. (Spring 2023). National Geographic Society.
- 2020 Graduate Leaders in Socio-Environmental Synthesis workshop. (Winter 2020). The National Socio-Environmental Synthesis Center.
- 2019 Summer School in Sustainable Climate Risk Management. (Summer 2019). Penn State University.
- 2018 Summer School in Resource and Environmental Economics. (Summer 2018). European Association of Environmental and Resource Economists.
- 2016 International Summer School. Masters course: A changing Arctic. Social, economic, political and physical dynamics of the Arctic. (Summer 2016). University of Oslo.

SELECTED CREATIVE PRODUCTIONS AND SCIENCE OUTREACH

- 2023 **“TierraFest” - Earth Day science, art and film festival** (May 2024, May 2023, May 2022, April 2021). *General coordinator and principal curator*. Celebrated in Centro Cultural El Rule, Mexico City. [Link to video](#). [Link to website](#). **Official Selection** of the Climate Change Communication Award Rebeca Ballestra.

- 2023 **“Guardianxs del Territorio” - Short stop-motion film** (2023). *Producer and Scriptwriter advisor*. A film depicting indigenous communities in Puebla, Mexico combatting the water extractive industry.
Film Festivals Official Selection: Shorts Mexico (2023), FECIBA (2023), AnimAura (2023), FICCTERRA (2023)
- 2023 **“Historias Paralelas” Short documentary film** (2023). Producer and scriptwriter advisor. A film about the entangled stories of cultures and birds diversity in Santa Gertudris, Veracruz, Mexico.
- 2023 **“Explotar hasta el Oxígeno” Short documentary film** (2023). Producer and scriptwriter advisor. A film about the community of Cuajimiloyas, Oaxaca assessing the risks and benefits of protecting their forests within the carbon offsets market. Screened at TierraFilme 2023.
- 2022 **“Chill out, climate!” - Climate change stand-up comedy** (October 2022). *Performer and routine writer*. Presented in Puerto Vallarta, Jalisco public plaza during the Mexican Geophysical Union Meeting.
- 2022 **“Bioguardianes” - Documentary TV-series** (June 2022). *Researcher, scriptwriter and host*. A series about biocultural heritage in Mexico. Aired on the Mexican public TV channel *Canal 14*. [Link to series](#).
Film Festivals Official Selection: San Diego Environmental Film Festival 2023, Muestra Nacional de Imágenes Científicas 2023.
- 2021-2023 **“CliMitología” - Podcast** (3 seasons: 2021, 2022, 2023). *Scriptwriter and host*. Debunking climate change myths. [Spotify Link](#).

INVITED TALKS

- 2023 “Ecosistemas Marinos en Riesgo”
Coordinación Universitaria de Sostenibilidad, Universidad Nacional Autónoma de México. Agosto 2023.
- 2023 “El Valor de los Océanos en el Costo Social del Carbono”
Departamento de Oceanografía Física, Centro de Investigación Científica y de Educación Superior de Ensenada, Junio 2023.
- 2023 “Climate Economics and Communication: Naming and Valuing What Matters”
Lecture Series: Perspectives on Ocean Sciences, Birch Aquarium, Scripps Institution of Oceanography, April 2023.
- 2023 “The economic geography of natural capital in a changing climate”
Co-sponsored by the Economics and Geography Departments, San Diego State University, January 2023.

- 2022 “What do we lose when we lose a biome?”
Earth Science Department, University of Southern California, October 2022.
- 2022 Invited to the “Workshop on New Frontiers on Natural Capital Accounting.”
Cambridge University, UK, September 2022.
- 2022 “Cambio climáticos, ecosistemas y crisis hídricas”
Programa Universitario de Estudios sobre la Ciudad, UNAM, September 2022.
- 2020 “Natural Capital in a Regional Integrated Assessment Model”
Centro Euro-Mediterraneo sui Cambiamenti Climatici, June 2020.
- 2020 “Communicating science to policy makers and the broader public”
Ensenada Center for Scientific Research and Higher Education (CICESE),
February 2020.
- 2019 “Creation of open source integrated assessment models of climate change”
Centro de Ciencias de la Atmósfera, National Autonomous University of
Mexico, March 2019.
- 2019 “Natural Capital and the Social Cost of Carbon”
The Natural Capital Project, Stanford University, November 2019.
- 2017 “Climate change impacts on the energy system”
Instituto de Ciencias Nucleares, National Autonomous University of Mexico,
September 2017.

Campus Talks

- 2022 “What do we lose when we lose a biome?” Climate, Atmospheric Sciences,
and Physical Oceanography. Scripps Institution of Oceanography, University
of California San Diego

SELECTED MEDIA COVERAGE

Basilio, H. Mexico’s Biggest Earth Science Festival Draws Crowds. Eos, American Geophysical Union (2023). <https://eos.org/articles/mexicos-biggest-earth-science-festival-draws-crowds>

CNN International. Cost of Climate Impacts Severely Underestimated. (2022). <https://twitter.com/holmesCNN/status/1561591963949965312>

Duncombe, J. A New Approach to an Unresolved Mystery in Climate Economics. Eos, American Geophysical Union (2022). <https://eos.org/articles/a-new-approach-to-an-unresolved-mystery-in-climate-economics>

Agarwala, M., Coyle, D. Natural capital in climate models. Nat Sustain 4, 81–82 (2021). <https://doi.org/10.1038/s41893-020-00618-x>

Nuccitelli, D. Study: Accounting for value of nature reinforces Paris climate targets. Yale Climate Connections (2021). <https://yaleclimateconnections.org/2021/01/study-accounting-for-value-of-nature-reinforces-paris-climate-targets>

CONSULTING

Equilibrium Economics Winter 2023
Climate and Oil-industry Impacts on Human Populations

Interamerican Development Bank Fall 2023
Climate Impacts on Human Health in Central America

LANGUAGES

Spanish (native)

English (fluent)

ACTIVE MEMBERSHIPS

National Geographic Society

American Geophysical Union

American Association of Environmental and Resource Economists

Unión Geofísica Mexicana

Red de Resistencia Climática