

# BERNARDO A. BASTIEN-OLVERA

CURRICULUM VITAE

NOVEMBER 2023

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

## EDUCATION

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- 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*
- 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 in University of California Berkeley and  
Ecole Polytechnique de Montreal.

## PROFESSIONAL APPOINTMENTS

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- Institutional Postdoctoral Fellow** 2022 - Present  
Scripps Institution of Oceanography  
University of California San Diego

## PUBLICATIONS

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### *Refereed Journal Articles*

- In Press **Bastien-Olvera, B.A.**, Conte, M.N., Dong, X., Briceno, T., Batker, D.,  
Tavoni, M., Emmerling, J., Granella, F. & Moore, F.C. (Forthcoming)  
Unequal Climate Impacts on Global Values of Natural Capital. *Nature*.
- 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 5<sup>th</sup> 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 preparation***

- In Prep. Bastien-Olvera, B.A., Aburto, O., Favoretto, F., Amaya, D., Paolo, E. & Ricke K. (In Preparation) Climate Change Projected to Increase Mangrove Internal Degradation Despite Reduced Area Loss.
- In Prep. Bastien-Olvera, B.A. & Ricke K. (In Preparation) Climate Change Impacts on the World’s Ocean-based Economies and Services.

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 Preparation)  
GeoTraductores: a Collaborative Initiative Democratizing Science Communication in Latin America

#### **AWARDS AND HONORS**

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- 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.
- 2023 **Candidato a Investigador Nacional**  
Sistema Nacional de Investigadores, Consejo Nacional de Ciencia y Tecnología, Mexico.
- 2022 **National Geographic Explorer**  
National Geographic Society
- 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.

## MENTORSHIP 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

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- 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

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##### *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 32<sup>nd</sup> - June 1<sup>st</sup>, 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**

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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**

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- 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**

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- 2023 **“TierraFest” - Earth Day science, art and film festival** (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

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- 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**

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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**

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**Equilibrium Economics**

Winter 2023

Climate and Oil-industry Impacts on Human Populations

**Interamerican Development Bank**  
Climate Impacts on Human Health in Central America

Fall 2023

**LANGUAGES**

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Spanish (native)

English (fluent)

**AFFILIATIONS**

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National Geographic Society

American Geophysical Union

American Association of Environmental and Resource Economists

Unión Geofísica Mexicana

Red de Resistencia Climática