

# Jeremy M. Klavans

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## EDUCATION

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- University of Miami Rosenstiel School of Marine and Atmospheric Science** Miami, FL  
2015 – 2020
- Ph.D. in Meteorology and Physical Oceanography
  - Thesis: The Principal Role of External Forcing in Multidecadal North Atlantic Climate Variability
  - Committee: Professors Amy C. Clement (advisor), Mark A. Cane, Ben P. Kirtman, M. Susan Lozier, and Brian J. Soden
- University of Chicago Harris School of Public Policy** Chicago, IL  
2012 – 2014
- M.S. in Environmental Science and Policy with Honors
  - Thesis: The Influence of Model Resolution on Temperature Variability
  - Advisors: Professors Elisabeth J. Moyer and Robert Rosner
- University of Miami** Coral Gables, FL  
2007 – 2011
- B.A., *cum laude*, in Ecosystem Science and Policy & Political Science with Departmental Honors

## RESEARCH EXPERIENCE

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- University of Colorado, Boulder** Boulder, CO  
2020 - Present
- Postdoctoral Associate
- Investigated the influence of external forcing on key modes of Pacific climate variability
  - Appraised forced ENSO responses in new large ensembles of climate models
- University of Miami Rosenstiel School of Marine and Atmospheric Science** Miami, FL  
2015 – 2020
- Graduate Researcher
- Quantified role of external forcing in North Atlantic climate variability in large ensembles of climate models, observations, and proxy reconstructions
  - Experimented with CESM to identify the influence of ocean model complexity on the AMV
  - Estimated the impact of the externally forced AMV on local climate impacts
- Center for Robust Decision Making on Climate and Energy Policy** Chicago, IL  
2013 – 2015
- Research Assistant
- Assessed the influence of model resolution on the statistics of both local and global climate at all timescales
  - Developed decision-maker/citizen support tools focusing on climate and energy policy (e.g. [RPS Calculator](#))
  - Contextualized and clarified scientific and economic models into content for a general audience (e.g. [webDICE](#))
- Bulletin of the Atomic Scientists** Chicago, IL  
2013 – 2015
- Research Assistant
- Compiled country-level data on the cost of n<sup>th</sup>-of-a-kind advanced fuel cycle reactors
  - Designed [online tool](#) to model and compare electricity costs of each fuel cycle for each country

## SELECTED PROFESSIONAL EXPERIENCE

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- Maryland Department of the Environment, Water Management Administration** Baltimore, MD  
2012
- Compliance and Policy Analyst
- Collaborated with Compliance Engineers to ensure adequate drinking water quality
  - Distilled water policy for Marcellus Shale Safe Drilling Initiative and the Interstate Commission on the Potomac River Basin
- Beta Analytic** Miami, FL  
2011
- Laboratory Technician
- Assisted in the chemical preparation of samples for both the Accelerator Mass Spectrometry and Liquid Scintillation Counting methods of radiocarbon dating
  - Analyzed bio-based samples used to determine the renewable carbon content of submitted products

## TEACHING EXPERIENCE

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<b>University of Miami Rosenstiel School of Marine and Atmospheric Science</b>	Miami, FL
Teaching Assistant, Climate and Global Change (Professors Lisa Beal and Igor Kamenkovich)	2017
• Lectured on paleoclimate, climate models, and climate policy. Led laboratory work. Evaluated student performance.	
Teaching Assistant, Department of Meteorology (Professor Anthony Hynes)	2016
• Counseled Meteorology undergraduates on coursework, research, and professional advancement	
<b>University of Chicago Harris School of Public Policy</b>	Chicago, IL
Teaching Assistant, Decisions and Organizations (Professor Pablo Montagnes)	2014
• Lectured weekly and hosted review sessions for graduate level course	

## PUBLICATIONS

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17. **Klavans, Jeremy M.**, Pedro N. DiNezio, Amy C. Clement, Clara Deser, Timothy M. Shanahan. "Human Emissions Drive the Pacific Decadal Oscillation." *Accepted in Nature*.
16. Chengfei He, Amy C. Clement, Mark A. Cane, Alex Gonzalez, Young-Oh Kwon, Jai-Rui Shi, **Jeremy M. Klavans**, Lisa N. Murphy. "Climate models exaggerate the impact of greenhouse gases on recent interhemispheric temperature contrast and tropical climate." *In Review at Nature Geosciences*.
15. Kay McMonigal, Sarah M. Larson, Melissa Gervais, **Jeremy M. Klavans**, Chengfei He, Mark A. Cane, Susanna Corti, Katinka Bellomo. "Fingerprints of AMOC Decline are Sensitive to External and Mechanistic Forcing." *Accepted in GRL*.
14. **Klavans, Jeremy M.**, Amy C. Clement, Mark A. Cane, Lisa N. Murphy, Chengfei He, Charles Ogle, Pedro N. Dinezio. "The Breakup of the North Atlantic Atmosphere and Ocean Due to Human Affairs." *In prep*.
13. Clement, Amy C., Mark A. Cane, **Jeremy M. Klavans**, Chengfei He, Lisa N. Murphy. "The Signal-to-Noise Problem in Climate Change." *In Review at Journal of Climate*.
12. Dinezio, Pedro N., Clara Deser, Chang Ping, Nan Rosenbloom, Carolina Vera, Julia Mindlin, Sol Osman, **Jeremy M. Klavans**, Nicola Maher, Robert Jnglin Wills. "Anthropogenic Forcing of Recent Pacific Climate Change via Tropical-Extratropical Coupled Ocean-Atmosphere Interactions." *In Prep*.
11. Todd, Victoria L., Timothy M. Shanahan, Pedro N. DiNezio, **Jeremy M. Klavans**, Peter J. Fawcett, R. Scott Anderson, Gonzalo Jiménez-Moreno, Allegra N. LeGrande, Francesco S.R. Pausata, Alexander J. Thompson, Jiang Zhu. "North Pacific response to hemispheric warming forces Holocene drought." *Accepted in Nature Geosciences*.
10. He, Chengfei, Amy C. Clement, Sydney M. Kramer, Mark A. Cane, **Jeremy M. Klavans**, Tyler M. Fenske, Lisa N. Murphy. "Tropical Atlantic Multidecadal Variability is Dominated by External Forcing." 2023. *Nature*. <https://doi.org/10.1038/s41586-023-06489-4>
9. Maher, Nicola, Robert C. Jnglin Wills, Pedro N. DiNezio, **Jeremy M. Klavans**, Sebastian Milinski, Sara C. Sanchez, Samantha Stevenson, Malte F. Steucker, and Xian Wu. 2022. "The future of the El Niño-Southern Oscillation: Using large ensembles to illuminate time-varying responses and inter-model differences." *Earth System Dynamics*. <https://doi.org/10.5194/esd-14-413-2023>
8. He, Chengfei, Amy C. Clement, Mark A. Cane, Lisa N. Murphy, **Jeremy M. Klavans**, Tyler M. Fenske. 2022. "A North Atlantic warming hole without ocean circulation." *Geophysical Research Letters*. <https://doi.org/10.1029/2022GL100420>
7. **Klavans, Jeremy M.**, Amy C. Clement, Mark A. Cane, Lisa N. Murphy. 2022. "The Evolving Role of External Forcing in North Atlantic SST Variability Over the Last Millennium." *Journal of Climate*. <https://doi.org/10.1175/JCLI-D-21-0338.1>
6. **Klavans, Jeremy M.**, Mark A. Cane, Amy C. Clement, Lisa N. Murphy. 2021. "NAO Predictability Due to External Forcing." *npj Climate and Atmospheric Science*. <https://doi.org/10.1038/s41612-021-00177-8>
5. Murphy, Lisa N., **Jeremy M. Klavans**, Amy C. Clement, Mark A. Cane. 2021. "Investigating the Roles of External Forcing and Ocean Circulation on the Atlantic Multidecadal SST Variability in a Large Ensemble Climate Model Hierarchy." *Journal of Climate*. <https://doi.org/10.1175/JCLI-D-20-0167.1>
4. Waite, Amanda, **Jeremy M. Klavans**, Lisa N. Murphy, Amy C. Clement, Anton Eisenhauer, Volker Liebetrau, Peter K. Swart. 2020. "Observational and Model Evidence for an Important Role in Volcanic Forcing in Driving Atlantic Multidecadal Variability

Over the Last 600 years.” *Geophysical Research Letters* 47. <https://doi.org/10.1029/2020GL089428>

3. **Klavans, Jeremy M.**, Amy C. Clement, Lisa N. Murphy, Honghai Zhang. 2020. “Identifying the Externally-forced Atlantic Multidecadal Variability Signal through Florida Rainfall.” *Geophysical Research Letters* 47 (20). <https://doi.org/10.1029/2020GL088361>

2. **Klavans, Jeremy M.**, Amy C. Clement, and Mark A. Cane. 2019. “Variable External Forcing Obscures the Weak Relationship between the NAO and North Atlantic Multidecadal SST Variability.” *Journal of Climate* 32 (13): 3847–64. <https://doi.org/10.1175/JCLI-D-18-0409.1>

1. **Klavans, Jeremy M.**, Andrew Poppick, Shanshan Sun, and Elisabeth J. Moyer. 2017. “The Influence of Model Resolution on Temperature Variability.” *Climate Dynamics* 48 (9–10): 3035–45. [doi:10.1007/s00382-016-3249-6](https://doi.org/10.1007/s00382-016-3249-6)

## INVITED PRESENTATIONS

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- Klavans, Jeremy M., Pedro N. DiNezio, Amy C. Clement, Clara Deser, Timothy M. Shanahan. “The Signal-to-Noise Error in Decadal Climate Modes.” Invited presentation at A Session Honoring Mark Cane’s Legacy and Reflecting on the Future of Climate Science, American Meteorological Society Annual Meeting, New Orleans, LA, 2025.
- Klavans, Jeremy M., Pedro N. DiNezio, Amy C. Clement, Clara Deser, Timothy M. Shanahan. “The Signal-to-Noise Error in Decadal Climate Modes.” Invited presentation at the US CLIVAR Workshop on Confronting Earth System Model Trends with Observations: the Good, the Bad, and the Ugly, Boulder, CO, 2024.
- Klavans, Jeremy M., Pedro N. DiNezio, Amy C. Clement, Clara Deser, Timothy M. Shanahan. “Human Emissions Drive the Pacific Decadal Oscillation”. Invited talk at Colorado State University, Ft. Collins, CO. 2023.

## SELECTED PRESENTATIONS

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- Klavans, Jeremy M., Pedro N. DiNezio, Amy C. Clement, Clara Deser, Timothy M. Shanahan. “Human Emissions Drive the Pacific Decadal Oscillation”. American Meteorological Society Annual Meeting, Denver, CO, 2023.
- Klavans, Jeremy M. and Pedro N. DiNezio. “Human Emissions Drive the Pacific Decadal Oscillation”. CLIVAR Climate Dynamics Panel Annual Workshop. Virtual. 2022.
- Klavans, Jeremy M., Mark A. Cane, Amy C. Clement, Lisa N. Murphy, Chengfei He, and Pedro DiNezio. “The Divorce of the North Atlantic Ocean and Atmosphere Attributed to Human Affairs”. US AMOC Team Meeting. Woods Hole, MA, 2022.
- Klavans, Jeremy M., Mark A. Cane, Amy C. Clement, Lisa N. Murphy. “NAO Predictability Due to External Forcing”. Multi-annual to Decadal Climate Predictability in the North Atlantic-Arctic Sector. Copenhagen, Denmark, 2021.
- Klavans, Jeremy M., Amy C. Clement, Lisa N. Murphy, Mark A. Cane. “The Roles of External Forcing and Ocean Circulation on Atlantic Multidecadal Variability Amplitude”. Ocean Sciences Meeting, San Diego, CA, 2020.
- Klavans, Jeremy M., Amy C. Clement, and Lisa N. Murphy. “The Evolving Role of Volcanic Forcing in the AMV”. The Large Ensembles Workshop, Boulder, CO, 2019.
- Klavans, Jeremy M., Amy C. Clement, and Lisa N. Murphy. “The AMO and Florida Precipitation”. Development of Unified Rainfall Scenarios for Florida Workshop, Miami, FL, 2019.
- Klavans, Jeremy M., Amy C. Clement, and Mark A. Cane. “Variable External Forcing Obscures the Weak Relationship between the NAO and North Atlantic Multi-decadal SST Variability”. Held Symposium, Princeton, NJ, 2018.
- Klavans, Jeremy M., Amy C. Clement, and Mark A. Cane. “Variable External Forcing Obscures the Weak Relationship between the NAO and North Atlantic Multi-decadal SST Variability”. 2018 International AMOC Science Meeting, Miami, FL, July 2018.
- Klavans, Jeremy M., and Amy C. Clement. “The Contribution of Ocean Dynamics to Interannual North Atlantic Climate Variability.” Model Hierarchy Workshop, Princeton, NJ, 2016.

## UNIVERSITY & ACADEMIC SERVICE

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- Reviewer: NSF Climate and Large-Scale Dynamics Program, Geophysical Research Letters, Journal of Climate, Climate Dynamics, Ocean Sciences, npj Climate and Atmospheric Science, NSF Postdoctoral Fellowship
- Convener: AGU sessions on North Atlantic climate variability (2023, 2024)
- Organizing Committee, Session Chair for Miami Climate Symposium (Miami, FL 2019 – 2020)
- Coordinator of RSMAS Climate Research Group (Miami, FL 2017 – 2020)
  - Planned biweekly seminars and paper discussions for climate-adjacent students, faculty, and staff
- Meteorology and Physical Oceanography Department Student Representative (Miami, FL 2017 – 2020)
- Student Coordinator for prospective graduate student visitation weekend (Miami, FL 2018 - 2019)
- Member of Best Student Seminar Committee (Miami, FL 2017 - 2019)
- Coordinator/Lecturer RSMAS Teaching Assistant training (Miami, FL 2018)
- CaneContact (2016 – 2019)
  - Point of contact for incoming graduate students
- Staff writer for the Chicago Policy Review (Chicago, IL 2012 – 2013)
- Board Member for the Chicago Environmental Policy Association (Chicago, IL 2013 – 2014)

## CIVIC SERVICE

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- Mentor for University of Colorado Boulder's Research Experience for Undergraduates program (2021 – 2023)
- Lab Coach for Frost Museum of Science and Miami-Dade County Public School's IMPACT program (2018 - 2019)
  - Mentored students from under-resourced communities on computer and climate sciences
- Coordinator of RSMAS Climate Research Group Outreach (2017 – 2020)
  - Built outreach infrastructure to connect graduate students with teaching opportunities in local schools
- Science Advisor for PBS's *NOVA* "Prediction by the Numbers" (2018)
- Panelist for premier of PBS's *Changing Seas* "The Fate of Carbon" (2018)
- Lecturer for "Students for Students" (Miami, FL 2019 – 2020)
  - Taught local students and educators on climate change and impacts in South Florida
- 100 Great Ideas Incubator Selections Committee (2018)
  - Evaluated competitive proposals for local resilience projects
- Science Advisor Radical Partners (2018 – 2019)
  - Advised local organization focused on civic and community engagement around climate resilience
- Facilitator for Miami-Dade County's "Sea Level Rise Charrette and Open House" (2019)
- Volunteer at local science education and related events including:
  - ArtSea Ocean Kids (2017, 2018, 2019), Green Education Fair (2017, 2019), Miami Climate Hackathon (2018), Youth Climate Summit (2019), Miami-Dade County Sea Level Rise Workshop (2019)
- Lab Teacher for "Urban Research" at Lindblom Math and Science Academy (Chicago, IL 2014 -2015)

## PROFESSIONAL DEVELOPMENT

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- CESM Tutorial (2018)
  - Week-long training at NCAR on running and modifying CESM2
- RSMAS Writing Workshop (2018)
  - Week-long interactive science writing course
- "Elevating Inclusion at RSMAS" Workshop (2018)
- "Building Professional Relationships that Thrive: Mentoring Actively" Workshop (2019)
- "Mentoring: Making it Count" Workshop (2018)
- "Mentoring as a Two-way Street: A Workshop for Advancing Mentor-Mentee Relationships (2016)
- RSMAS Teaching Assistant training (2016)

## HONORS AND SKILLS

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- 2021 F.G. Walton Smith Prize for outstanding Ph.D. dissertation
- 2017-2018 RSMAS Teaching Assistant Excellence Award
- Travel grants: Held Symposium (2018), Large Ensembles Workshop (2019)
- University of Miami Fellowship (highest award offered by UM Graduate School)
- Academic scholarships at the University of Chicago (M.S.) and University of Miami (B.A.)
- Programming languages: Matlab, Python, NCO, CDO, Bash, LaTeX, HTML, CSS
- Software: MS Office Suite (Word, Excel, Powerpoint), Stata, SPSS, Photoshop, ArcGIS