

# James B. Shope, Ph.D.

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## **Assistant Extension Specialist in Climate Services**

Rutgers University, New Jersey Agricultural Experiment Station &  
Department of Environmental Sciences  
School of Environmental and Biological Sciences  
14 College Farm Rd, New Brunswick, NJ 08901

### SUMMARY

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I am a geoscientist and applied climatologist whose work addresses climate change hazards and community impacts. Over 10 years conducting applied, multidisciplinary research, my work has guided coastal risk reduction for more than 5,000 km of U.S. coastline and quantified climate hazards in New Jersey. My technical specialties include applied climatology, hydrodynamic modeling, statistical data analysis, scientific programming, and geospatial analysis. I am passionate about engaging with climate resiliency and management challenges facing government and community decision makers. I regularly give invited talks and trainings regarding climate change science and online climate adaptation tools.

### EDUCATION

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| <b>University of California Santa Cruz</b> , Santa Cruz, CA<br>Ph.D., Earth and Planetary Sciences<br>Dissertation: " <i>Modeling Pacific atoll island shorelines' response to climate change</i> "<br>Advisor: Gary B. Griggs | 2016 |
| <b>Emory University, College of Arts and Sciences</b> , Atlanta, GA<br>B.Sc., Environmental Studies, Magna Cum Laude<br>Minor: English<br>Advisor: William B. Size   | 2011 |
| <b>Oxford College of Emory University</b> , Oxford, GA<br>A.A.   | 2009 |

### RESEARCH AND PROFESSIONAL EXPERIENCE

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**Assistant Extension Specialist in Climate Services** September 1, 2023–pres.  
Department of Environmental Sciences, New Jersey Agricultural Experiment Station, Rutgers University,  
New Brunswick, NJ

- Generate externally funded research relating to climate data and projections for applications across Multiple applied sectors (e.g., agriculture, public health)

- Teaching courses in the undergraduate program in meteorology and the graduate program in Atmospheric Science
- Generate extension programming to serve New Jersey communities to address climate effects on agriculture, extreme heat and heat island effects, coastal challenges, climate change impacts on environmental justice communities, and related topics.

**Research Associate**

May 2021– September 2023

Department of Environmental Sciences, Climate Change Resource Center, Rutgers University, New Brunswick, NJ

- Analyze climate data and projections for applications in multiple sectors (e.g., agriculture, public health)
- Educate and communicate with diverse stakeholders regarding climate change impacts in NJ
- Collaborate with other NJ institutions on applied climate change research, education programs, and integration of research findings into state climate change adaptation, mitigation, and resilience efforts

**Coastal Scientist**

2019–2021

Jacobs Engineering, Philadelphia PA

- Developed technical proposals for coastal monitoring and flooding resilience
- Coordinated with clients and teammates to develop a report on climate change adaptation for ports
- Led the development, population, and management of a port infrastructure GIS database
- Designed a financial and sequencing tool to guide wharf reconstruction in New York and New Jersey

**Postdoctoral Researcher**

2017–2019

University of California Santa Cruz, Santa Cruz, CA & U.S. Geological Survey

- Led research to quantify overtopping risk and extreme water level recurrence along U.S. West Coast
- Ran numerical wave models to determine high water level impacts at 20,000 distinct locations
- Developed a methodology to process geospatial data and evaluate coastal overtopping risk; this method is the foundation for planned USGS projects quantifying nation-wide overtopping risk
- Generated data for the USGS Coastal Change Hazards Portal, an open-source reference for managers

**Postdoctoral Researcher/Contractor**

2017–2018

The Nature Conservancy, Santa Cruz, CA

- Team research quantifying the economic and social impact of flooding protection from all U.S. reefs
- Coordinated across organizations including USGS, The Nature Conservancy, and UC Santa Cruz
- Generated and managed numerical model results for 30,000 locations along U.S. reef-lined coasts
- These results are guiding multi-million-dollar FEMA post-hurricane reef restoration efforts in Puerto Rico

**Independent Contractor**

January–August 2017

Revell Coastal, Santa Cruz, CA

- Coastal consulting re-evaluating FEMA flood data and processing erosion magnitudes from LiDAR data
- Assisted in coordinating with and presenting results to clients, including a municipal government
- Produced a technical review of applied methods to calculate base flood elevations and erosion

**Graduate Student Researcher**

2011–2016

University of California, Santa Cruz & USGS Pacific Coastal and Marine Sciences Center, Santa Cruz, CA  
*Advisors: Curt D. Storlazzi (USGS) and Gary B. Griggs (UCSC)*

- Assessed how large wave events impact tropical Pacific islands due to sea-level rise and climate change
- Cultivated a deep understanding of physical processes underlying coastal flooding and erosion hazards
- Developed project proposals and secured \$130,000 in grant funding to support this work
- Communicated results and impacts at 7 professional conferences and through 5 scientific publications

**Undergraduate Researcher**

2010–2011

Emory University, Atlanta, GA

- Conducted field research, thin-section petrography, and data analysis

**Long Term Ecological Research: Intern and Field Technician**

Summer 2010

Coweeta Hydrologic Laboratory, Otto, NC

- Field work including: water sampling, tree census, and field site maintenance; Water quality data analysis

## PUBLICATIONS

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**Shope J.B.**, Robinson D., Gerbush M., Muldowney R., Oudemans P. "Predictive models of highbush blueberry development from winter chilling and spring warming." *In prep.*

**Shope J.B.**, McDonnell, J., Kociolek, B., Kaplan, M. "Building Interdisciplinary Climate Connections (BICC): a subject-spanning and inquiry-based approach to climate change." *The Science Teacher*. *Submitted.*

Cornish A., Alguera A.\*, **Shope J.**, Broccoli, A., Yates, J. "Diverse Indicators of Climate Change for New Jersey and Southeastern New York State." *Journal of Applied Meteorology and Climatology*. *In Review.*

Storlazzi CD, Reguero BG, Alkins KC, **Shope JB**, Gaido-Lassarre C, Viehman TS, Beck MW. 2025. "Hybrid coral reef restoration can be a cost-effective nature-based solution to provide protection to vulnerable coastal populations." *Sci Adv*. 2025 Jan 17;11(3). doi: 10.1126/sciadv.adn4004

**Shope J.**, Salazar-Mendoza, P., Ben-Zvi, Y., Rodriguez-Saona C., 2024 "Refining Degree-Day Models for Sparganothis Fruitworm in Cranberry by Biofix and Variety." *Horticulturae*, 10, 1346.  
<https://doi.org/10.3390/horticulturae10121346>.

**Shope J.B.**, Polk D., Mansue Denson C., Rodriguez-Saona C., 2023. "The role of climate variation on the phenological shifts of a native and an invasive insect pest." *PLOS ONE* 18(4): e0284600.  
<https://doi.org/10.1371/journal.pone.0284600>

**Shope J.B.**, L.H. Erikson, P. Barnard, C.D. Storlazzi, K. Serafin, K.J. Doran, H.F. Stockdon, B.G. Reguero, F. Mendez, S. Castanedo, A. Cid, L. Cagigal, P. Ruggiero, 2022. "Characterizing Storm-Induced Coastal Change Hazards Along the United States West Coast." *Nature Scientific Data*, 9(224). [https://doi-org.proxy.libraries.rutgers.edu/10.1038/s41597-022-01313-6](https://doi.org.proxy.libraries.rutgers.edu/10.1038/s41597-022-01313-6)

Reguero B.G., C.D. Storlazzi, A.E. Gibbs, **J.B. Shope**, A.D Cole, K.A. Cumming, M.W. Beck, 2021. "The value of US coral reefs for flood risk reduction." *Nature Sustainability*. <https://doi.org/10.1038/s41893-021-00706-6>

**Shope J.B.** and C.D. Storlazzi, 2019. "Assessing morphologic controls on atoll island alongshore sediment transport gradients due to future sea-level rise." *Frontiers in Marine Science*, 6(245). <https://doi.org/10.3389/fmars.2019.00245>

**Shope J.B.**, C.D. Storlazzi, R.K. Hoeke, 2017. "Projected atoll shoreline and run-up changes in response to sea-level rise and varying large wave conditions at Wake and Midway Atolls, Northwestern Hawaiian Islands." *Geomorphology*, 295: 537–550. <https://doi.org/10.1016/j.geomorph.2017.08.002>

**Shope J.B.**, C.D. Storlazzi, L.H. Erikson, C.A. Hegermiller, 2016. "Changes to extreme wave climates of islands within the Western Tropical Pacific throughout the 21st century under RCP 4.5 and RCP 8.5, with implications for island vulnerability and sustainability." *Global and Planetary Change*, 141. <https://doi.org/10.1016/j.gloplacha.2016.03.009>

**Shope, J.B.**, Storlazzi, C.D., Erikson, L.H., Hegermiller, C.A., 2015. "Modeled Changes in Extreme Wave Climates of the Tropical Pacific over the 21st Century: Implications for U.S. and U.S.-Affiliated Atoll Islands" in Wang, P., Rosati, J.D., and Cheng, J., eds., *Proceedings of the Coastal Sediments 2015*, v. 1: Hackensack, N.J., World Scientific Publishing, 13 p. doi: 10.1142/9789814689977\_0247

**Peer-reviewed scientific reports:**

Davies, K.\*, **Shope J.**, Broccoli A., Gerbush M., Kaplan M., Robinson, D., Nikolopoulos, E., Araujo, D., Kopp, R., Herb, J. & Spector, A. 2025. "State of the Climate: New Jersey 2024." Rutgers, The State University of New Jersey, New Brunswick, NJ.

Wamsher, I.\*, **Shope J.**, Broccoli A., Gerbush M., Herb J., Kaplan M., Kohut, J., Saba, G., Garzio, L., Nazzaro, L., Robinson, D. 2024. "State of the Climate: New Jersey 2023." Rutgers, The State University of New Jersey, New Brunswick, NJ.

**Shope J.**, Alguera A., Broccoli A., Gerbush M., Herb J., Kaplan M., Marxen L., Rodriguez-Saona, C., Robinson D. 2023. "State of the Climate: New Jersey 2022." Rutgers, The State University of New Jersey, New Brunswick, NJ.

**Shope J.**, Broccoli A., Frei B., Gerbush M., Herb J., Kaplan M., Langer E., Marxen L., Robinson D. 2022. "State of the Climate: New Jersey 2021." Rutgers, The State University of New Jersey, New Brunswick, NJ.

Storlazzi C.D., B.G. Reguero, K.A. Cumming, A.D. Cole, **J.B. Shope**, C.L. Gaido, T.S. Viehman, B.A. Nickel, M.W. Beck, 2021. "Rigorously valuing the coastal hazard risks reduction provided by coral reef restoration in Florida and Puerto Rico." U.S. Geological Survey Open-File Report. <https://doi.org/10.3133/ofr20211054>

Storlazzi C.D., B.G. Reguero, T.S. Viehman, K.A. Cumming, A.D. Cole, **J.B. Shope**, S.H. Groves, C.L. Gaido, B.A. Nickel, M.W. Beck, 2021. "Rigorously valuing the impact of Hurricanes Irma and Maria on coastal hazard risks in Florida and Puerto Rico." U.S. Geological Survey Open-File Report. <https://doi.org/10.3133/ofr20211056>

Storlazzi C.D., B.G. Reguero, K.K. Yates, K.A. Cumming, A.D. Cole, **J.B. Shope**, C.L. Gaido, D.G. Zawada, S.R. Arsenault, Z.W. Fehr, B.A. Nickel, M.W. Beck, 2021. "Rigorously Valuing the Impact of Coral Reef Degradation on Coastal Hazard Risk in Florida." U.S. Geological Survey Open-File Report <https://doi.org/10.3133/ofr20211055>

Storlazzi C.D., B.G. Reguero, A.D. Cole, E. Lowe, **J.B. Shope**, A.E. Gibbs, B.A. Nickel, R.T. McCall, A.R. van Dongeren, M.W. Beck, 2019. "Rigorously valuing the role of U.S. coral reefs in coastal hazard risk reduction" U.S. Geological Survey Open-File Report 2019–1027. <https://doi.org/10.3133/ofr20191027>

Storlazzi C.D., **J.B. Shope**, L.H. Erikson, C.A. Hegermiller, P.L. Barnard, 2015. "Future wave and wind projections for United States and United States-affiliated Pacific Islands." U.S. Geological Survey Open-File Report 2015–1001. <https://dx.doi.org/10.3133/ofr20151001>

### **Other scientific reports:**

**Shope J.B.**, R. Kopp, M. Kaplan, J. Herb, A. Spector, 2024. "Background and Comparison of New Jersey's Greenhouse Gas Reduction Targets with the United States' Targets and Projected Global Reduction Pathways Consistent with the Paris Agreement." New Jersey climate Change Resource Center, Rutgers, The State University of New Jersey, New Brunswick, NJ.

Simon, J.E., D.K. Seidel, R. Govindasamy, O. Schofield, M. Balick, E. Merchant, S. Arumugan, M. Kostka, H. K. Yamada, E. Ioanis, E. Joseph, F. Sohl Obispo, A. George, E. Gomes, E. Schoolman, H. Floyd, M.R. Nakayama, S. Courtney Stinnett-Benito, G. Poll-Serious, T. Mondale, C. Yowbalaw, M. Wiencek, W. Mudong, M. Tiningmow, N. Khanna, L. Brindisi, **J. Shope**, M. Seidel, M. Zorde, D. Hoffman, M. De Luca, 2023. "Baseline Assessment in Support of Climate Resilient Food Security for Farming Households across the Federated States of Micronesia. Technical Report" submitted by Rutgers, The State University of New Jersey. to the Micronesia Conservation Trust, Federated States of Micronesia and the Green Climate Fund. January 30, 2024. 481 pages

## GRANTS & AWARDS

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### **Funded:**

Lead PI: Rodriguez-Saona, C., Co-PIs: Polashock, J., Wells-Hansen, L., Shope, J. "Investigations on degree-day models, chemical controls, and disease transmission to better manage insect pest." New Jersey Cranberry Research Council Inc., Cape Cod Cranberry Growers Association, and Ocean Spray Cranberries, Inc. January 1, 2024 - January 1, 2025. \$19,000. 5% time.

Lead PI: Ferguson, B., Co-PIs: Rodriguez-Saona, C., Shope, J. "Improving blueberry yields through targeted honey bee arrival." New Jersey Cranberry Research Council Inc., Cape Cod Cranberry Growers Association, and Ocean Spray Cranberries, Inc. June 1, 2024 - May 31, 2025. \$6,000. 2.5% time.

Lead PI: Cohen E., Co-PIs: Kociolek B., Shope J., Shernoff D., Desai M., Ferraro C, Kaplan M., Shendel D., Marcone J., Marte C., Duncan R., Shendell D. M. Award Number: AWD00013528. Expanding Access to Climate Change Education and the New Jersey Student Learning Standards through Climate Change Learning Collaboratives. April 1, 2024 - March 31, 2025. \$324,699. 5% time.

Shope, J. Co-PI; with Co-PIs: C. Rodriguez-Saona, B. Ferguson, P. Oudemans, and R. Govindasamy. "Improving Management of Plum Curculio and Blueberry Diseases Through Optimization of Pollination Services." Crop Protection and Pest Management Competitive Grants Program USDA-NIFA-CPPM-010315. September 01, 2024 – August 31, 2026. \$199,783. 5.4% time.

Shope, J. Co-investigator; with PIs: R. Govindasamy, J.E. Simon, D.K. Seidel and O. Schofield. "Strengthening Food Security in the Federated States of Micronesia: An Innovative Approach to Enhancing Information Systems, Establishing a FSM Food Innovation Center and Supporting Local Capacity Building". FSM Food Systems Solutions Project. Government of the Federated States of Micronesia. January 01, 2024-December 31, 2024. \$554,138. 10% time.

Shope, J. Co-investigator; with PI: J. Grabosky. "Forestland Conservation Needs Assessment and Program Design." New Jersey Agricultural Experiment Station USDA-NIFA McIntire-Stennis Forestry Research Program FY 2024 Capacity Grant. October 01, 2023-September 30, 2026. \$742,131.15. 10% yearly (3 months over project timeline).

Lead PI: Linter B., Co-PIs: Shope J., Savage A., Laurent-Cedeño J., Wang H. "Nexus of extreme heat and human and natural community health in urban areas." Rutgers Research Incubator in Climate and Health Seed Funding Initiative. April 01, 2023-April 01, 2024. \$141,333. 15% time.

**Submitted:**

Lead PI: Oudemans, P., Co-PIs: Shope, J. Marxen, L., Jin, Y., Murphy, S., Spies, J. "Data to Table: Advancing Digital Infrastructure for Sustainable and Competitive Specialty Crop Farming." USDA-NIFA. Submitted August 6, 2025. \$951,163 requested. 17% effort. *Pending*.

Lead PI: Giaudrone, C., CO-I, Shope J. "Empowering Matriarchs for Family-Centered Heat Health Resilience in Spanish-Speaking Camden Communities." South Jersey Institute for Population Health. Submitted July 7, 2025. \$ 24,968 requested. 5% effort. *Pending*.

Lead PI: Hussain, S., Co-Is: Shope, J., Ammari, T., Heinert, S., Andres, T. "INNOVATE-MOM: INNOVative TEchnology to Improve Maternal and Obstetric Metrics." ARPA-H Health care Rewards to Achieve Improved OutcomES (HEROES). Submitted December 10, 2024. \$14,850,811.31 requested. 8% effort. *Denied*.

Lead PI: Shope J., Co-Is: Hondros, E., Sayre, J., Lintner, B. "Urban Heat Risk and Environmental Messaging for Camden City, New Jersey's Latinx Community." Rutgers Research Council Collaborative Multidisciplinary Award Program. Submitted November 4, 2024. \$24,641 requested. 10% time. *Denied*.

Lead PI: Spies J., Co-PIs: Shope J., Muehlbauer, M., Marxen, L., Quinn, K. "How Farmers Can Use Web-based Modeling Tools to Improve Pest Management and Reduce Pesticide Use." 2025 Northeast SARE Research and Education Grant Program Full Proposal. Submitted October 29, 2024. \$249,996 requested. 0.8% time. *Denied*.

Lead PI: Savage A., Co-PIs: Shope J., Laurent-Cedeño J., Wang H. "The synergistic effects of urbanization and extreme heat on natural and human health in cities." Burroughs Wellcome Fund Program: Climate and Health Interdisciplinary Award. Submitted November 01, 2023. \$374,475 requested. *Denied*.

Lead PI: Marsooli, R., Co-PIs: Shope, J., McKenna, K., Miller, J., Orton, P., Barr, J., Grothues, T., Archer, A. Co-Is: Lowrie, K., Auermuller, L., Reguero, B., Kwakkel, J., Zemeckis, D., Andrews, C., Ding, Y. "Projection and Nature-Based Mitigation of Sea Level Rise Effects on Coastal Erosion and Flooding of Barrier Islands in New Jersey." NOAA ESLR 2024 General Coastal Resilience. September 01, 2024 – August 31, 2028. \$1,595,579. 10% time. *Denied*.

Lead PI: Marsooli, R., Co-PIs: Shope, J., Lathrop, R., Haaf, L., Maxwell-Doyle, M. "Quantifying Salt Marsh Resilience and the Importance of its Drivers 2024 US EPA Coastal Ecosystems Climate Resilience. February 01, 2025 – January 31, 2028. \$1,134,339. 10% time. *Denied*.

Lead PI: Shope, J., Co-PIs: Giaudrone, C., Villacis, C. "Improving Urban Heat and Health Monitoring and Messaging in Camden City, New Jersey." Burroughs Wellcome Fund Program: Climate Change and Human Health Seed Grants. Submitted July 01, 2024. \$49,627 requested. *Denied*.

Lead PI: McDonnell A., Co-PIs: Shope J., Kaplan M., Ferraro C., Cohen E., Kociolek B. "Interdisciplinary experiences for high school students demonstrating how the geoscience workforce can help solve climate change challenges." NSF: Pathways into the Earth, Ocean, Polar and Atmospheric & Geospace Sciences (GEOPATHs). Selected for submission through internal Rutgers Application and invited for full proposal. *Opportunity rescinded due to GEOPATHs Program being restructured.*

Lead PI: Shope, J., Co-PIs: Jin, X., Staffen, M., Miller, N. "Assessing extreme heat and air quality vulnerability of Newark, New Jersey communities with youth-led community engagement and solutions." NASA ROSES Earth Action: Supporting Climate Resilient Communities NNH23ZDA001N-CRC. Submitted May 3, 2024. \$615,228 requested. *Denied*.

### ***In preparation:***

Shope, J. Co-investigator; with PI: U. Haque. "Heat-Induced Mortality Dynamics of Vulnerable Populations: A Multiscale Approach to Diagnosing Spatiotemporal Causal Relationships." NIH Exploratory/Developmental Research Grant Award. \$275,000 likely to request.

## PRESENTATIONS & OUTREACH

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**Shope J.B.** July 14, 2025. Climate Change 101. Expanding Access to Climate Change Education and the New Jersey Student Learning Standards through Climate Change Learning Collaboratives Professional Development Session. ~20 in Audience. *Talk*. Evaluated.

**Shope J.B.** June 26, 2025. Climate Change 101. Expanding Access to Climate Change Education and the New Jersey Student Learning Standards through Climate Change Learning Collaboratives Professional Development Session. *Talk*.

**Shope J.B.** June 18, 2025. Climate Change and its Relevance to Warren County NJ. Warren County Environmental Advisory Committee. ~20 in Audience. *Talk (invited)*. Evaluated.

**Shope J.B.** April 8, 2025. Introduction to Climate Change. Rutgers Environmental Stewards. *Talk (invited)*.

**Shope J.B.** and Marxen L. November 18, 2024. Climate Science: What the Models Predict for NJ. For the New Jersey Agricultural Leadership Development Program. ~20 in Audience. *Talk (invited)*.

Cohen E., Kociolek B., **Shope J.B.** November 13, 2024. Climate Change Workshop for Educators Grades 6–12. Center for Mathematics, Science, and Computer Education, Rutgers University. ~15 participants  
*Co-led workshop design, materials development, speaker and subject matter expert*

2024 4-H STEM Ambassadors Sustainability Summit. November 8, 2024.

*Co-led and facilitated day-long workshop design, led table discussion on climate research, designed and co-led climate change and public health activities for students*

**Shope J.B.** October 26, 2024. U.S. Climate Change - Keynote. Rutgers Environmental Stewards Impact Summit. ~50 in Audience. *Talk (invited)*.

**Shope J.B.** October 24, 2024. New Jersey Sea-Level Rise and Coastal Hazards. Rutgers Earth Day Every Day Seminar. ~36 in Audience *Talk (invited)*. *Evaluated*.

Cohen E., Kociolek B., **Shope J.B.** October 16, 2024. Climate Change Workshop for Educators Grades 6–12. Center for Mathematics, Science, and Computer Education, Rutgers University. ~15 participants  
*Co-led workshop design, materials development, speaker and subject matter expert*

McDonnell J., **Shope J.B.**, Cohen E., Kociolek B., Kaplan M., Staffen M., Newman M. August 5–8, 2024. Climate and Data Literacy Summer Institute. Workshop for 24 Middle and High School teachers. (Workshop)

-**Shope J.B.**, "Climate Change in New Jersey" and Building Interdisciplinary Climate Connections Activity (Presentation and guided activity)

-**Shope J.B.**, "Sea-Level Rise in New Jersey" (Presentation)

-Assistance with developing and administering workshop

**Shope J.B.** August 14, 2024. U.S. Climate Change and Health. Centers for Medicare and Medicaid Services National Training Program Workshop, Woodbridge, NJ. ~36 in Audience. *Talk (invited)*.

**Shope J.B.**, Broccoli A., Garzio, L., Robinson, D. July 9, 2024. "State of the Climate: New Jersey 2023." Rutgers, The State University of New Jersey, New Brunswick, NJ. New Jersey Climate Change Resource Center – Climate Academy. ~300 people *Webinar*.

**Shope J.B.** June 9, 2024. Climate Change in New Jersey. Presentation to Metuchen High School. ~20 Students and Teachers. *Talk (invited)*.

**Shope J.B.** May 8, 2024. Climate Change and Health Focus on New Jersey. New Jersey Association of County and City Health Officials Workshop, Galloway, NJ. *Talk (invited)*. ~20 participants

**Shope J.B.** April 3, 2024. New Jersey Climate Change: Past and Projected Changes. Rutgers University, Department of Civil and Environmental Engineering Seminar, Piscataway, NJ. *Talk (invited)*.

**Shope J.B.** March 27, 2024. Interdisciplinary Approaches to Discussing Climate Change. National Extension Climate Initiative Connecting Climate to Communities Webinar Series ~35 attendees. *Talk*.  
<https://www.youtube.com/watch?v=toW6dpYt5hM>

**Shope J.B.** February 27, 2024. Introduction to Climate Change. Rutgers Environmental Stewards Seminar. ~100 attendees. *Talk (invited)*. Evaluations Included.

**Shope J.B.** February 17, 2024. Climate Change and Community Vulnerability. Rutgers Department of Environmental Sciences Weather and Climate Day. *Talk*.

**Shope J.B.** December 9, 2023. Heat Vulnerability across New Jersey: Monitoring of Urban Heat in Camden. Race, Faith, and Climate Change: Recent Scholarship on Environmental Racism and Social Justice. Protecting Human Rights, Human Dignity, and the Environment 75 Years of the Universal Declaration of Human Rights Workshop. Montclair State University. *Talk and Panel (invited)*.

**Shope J.B.** November 29, 2023. Heat Vulnerability across New Jersey: Monitoring of Urban Heat in Camden. Cooling Urban Heat: Strategies for a Resilient Future session. New York - New Jersey Harbor & Estuary Program 2023 State of the Estuary Conference. *Talk (invited)*.

2023 4-H STEM Ambassadors Sustainability Summit. November 10, 2023.

*Co-led and facilitated day-long workshop design, provided high school stem ambassadors with climate change overview, designed and co-led climate change and agriculture engagement activities for students*

**Shope J.B.** November 8, 2023. Valuing U.S. Coral Reefs for Coastal Hazard Risk Reduction and an Introduction to the New Jersey Climate Change Resource Center. Stevens Institute of Technology, Department of Civil, Environmental, and Ocean Engineering Seminar, Hoboken, NJ. *Talk (invited)*.

Cohen E., Kociolek B., **Shope J.B.** June 2023. Climate Change Workshop for Educators Grades 6–12. Center for Mathematics, Science, and Computer Education; New Jersey Climate Change Resource Center Science Engineering & Technology, Rutgers University.

*Co-led workshop design, materials development, speaker and subject matter expert*

Cohen E., Kociolek B., **Shope J.B.**, Ferraro C., McDonnell J, Kaplan M. April 2023. Climate Change Workshop for Educators Grades 6–12. Center for Mathematics, Science, and Computer Education; New Jersey Climate Change Resource Center; Math & Science Learning Center; Institute of Marine and Coastal Sciences Science Engineering & Technology, Rutgers University.

*Workshop design, materials development, speaker coordination, speaker and subject matter expert, day-of coordination*

**Shope J.B.** March 2023. New Jersey Climate Change Training. New Jersey Envirothon. *Training (invited)*.

**Shope J.B.** and Bamhrah P. March 2023. The New Jersey Heat Vulnerability Index. New Jersey Climate Change Resource Center – Climate Academy. *Webinar*.

**Shope J.B.** and Rodriguez-Saona C. March 2023. Climate Effects on Two Blueberry Insect Pests. Blueberry Open House, Rutgers New Jersey Agricultural Experiment Station. *Talk*.

**Shope J.B.** March 2023. Climate Change in New Jersey. Coasts, Oceans, Ports & Rivers Institute – American Society of Civil Engineers, North Jersey Meeting. *Talk (invited)*.

Kociolek B. and **Shope J.B.** Feb 2023. Climate Change for All: Climate Change and Science Professional Development for K-12 Teachers. Bergen County Technical Schools. *Training (invited)*.

**Shope J.B.** Jan 2023. New Jersey Climate 101. Climate Change Resilience 101 - An introduction to climate change resilience principles and planning for local decision-makers. New Jersey Climate Change Resource Center Resiliency Training. *Talk and Training (invited)*.

Kociolek B. and **Shope J.B.** Jan 2023. Climate Change for All: Climate Change and Science Professional Development for K-12 Teachers. Holmdel Township Public Schools. *Training (invited)*.

**Shope J.B.** and Rodriguez-Saona C. Jan 2023. Refining a Degree-Model for Sparganothis Fruitworm. American Cranberry Growers Association Winter 2023 Meeting. *Talk (invited)*.

**Shope J.B.** Dec 2022. New Jersey Climate Change. Rotary Metro Club of New Jersey, December 19 Meeting. *Talk (invited)*.

**Shope J.B.**, Marxen L. Nov 2022. New Jersey Climate Change and Projected Impacts on Agriculture. New Jersey Agricultural Leadership Development Program Nov 14<sup>th</sup> Seminar. *Talk (invited)*.

**Shope J.B.** Oct 2022. Adapting to Climate Change in New Jersey: Tools at the New Jersey Climate Change Resource Center. American Water Works Association, New Jersey Section Fall 2022 Meeting. *Talk (invited)*.

**Shope J.B.** Oct 2022. State of the Climate: New Jersey 2021. New Jersey Volunteer Organizations Active in Disaster 2022 Inspiring Engagement – From the Ground Up Conference. *Talk (invited)*.

Ferraro C., **Shope J.B.**, and Dooley L. Oct 2022 ABCs of Climate Change. New Jersey Science Convention 2022. *Co-presenter*.

Marxen L., **Shope J.B.**, Herb J., Kaplan M., Tropiano V., Bamhrah P., Fogliano J., Stuart M., Lathrop R. Sep 2022. Rutgers University Public Health NJADAPT Training. New Jersey Climate Change Resource Center. *Training*.

Marxen L., **Shope J.B.**, Herb J., Kaplan M., Tropiano V., Bamhrah P., Fogliano J., Stuart M., Auermuller L. Sep 2022. NJADAPT County Planner Training. New Jersey Climate Change Resource Center. *Training*.

**Shope J.B.** Sep 2022. Helping NJ Adapt to a Changing World: Overview on the Climate Resource Center at Rutgers University. NJ Water Environment Association 2022 Technology Transfer Seminar. *Talk (invited)*.

Marxen L., **Shope J.B.**, Herb J., Kaplan M., Bamhrah P., Fogliano J., Stuart M., Lathrop R. Aug 2022. NJADAPT New Jersey Association of Floodplain Managers Training. New Jersey Climate Change Resource Center. *Training*.

Marxen L., **Shope J.B.**, Herb J., Kaplan M., Bamhrah P., Fogliano J., Stuart M., Lathrop R. Jul 2022. NJADAPT Training – Association of NJ Environmental Commissioners and Green Team Members. New Jersey Climate Change Resource Center. *Training*.

**Shope J.B.** Jul 2022. Climate Change and Hurricanes: New Jersey. New Jersey Hurricane Season - a Virtual Panel on Impacts, Costs, and Cost Recovery. Leaders for Climate Accountability. *Panelist (invited)*.

**Shope J.B.** May 2022. The State of the Climate: New Jersey 2022. American Council of Engineering Companies of New Jersey, 2nd Annual Climate Change Summit. Keynote Speaker. *Talk (invited)*.

**Shope J.**, Broccoli A, Robinson D. May 2022. State of the Climate: New Jersey 2021. New Jersey Climate Change Resource Center – Climate Academy. *Webinar*.

**Shope J.B.** Apr 2022. The State of the Climate in 2022. USDA – Natural Resources Conservation Service, Technical Tuesday. *Talk (invited)*.

**Shope J.B.** Mar 2022. Sea-Level Rise and New Jersey. Sierra Club New Jersey Chapter, Jersey Shore Group Science Monday meeting. *Talk (invited)*.

**Shope J.B.** Feb 2022. The State of the Climate in 2022. Suburban Woman’s Club of South Plainfield monthly meeting. *Talk (invited)*.

**Shope J.B.** Nov 2021. Climate Change in New Jersey and Action by 2030. New Jersey Higher Education Partnership for Sustainability. *Talk (invited)*.

**Shope J.B.** Oct 2021. Climate Change in New Jersey and Classroom Resources. New Jersey Association of Independent Schools. *Talk and Panel Discussion (invited)*.

**Shope J.B.** Oct 2021. The State of the Climate in 2021. Sierra Club New Jersey Chapter monthly meeting. *Talk (invited)*.

**Shope J.B.** Sep 2021. Soil health and climate change. NJAES/NRCS Soil and Health Field Day. Rutgers New Jersey Agricultural Experiment station. *Talk (invited)*.

**Shope J.B.** Feb 2019. Rigorously valuing the role of U.S. coral reefs in coastal hazard risk reduction. Temple Earth & Environmental Science Department Seminar, Philadelphia, PA. *Talk (invited)*.

## CONFERENCE ABSTRACTS & PRESENTATIONS

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**Shope J.**, Salazar-Mendoza P., Ben-Zvi, Y., Rodriguez-Saona, C., November 2024. “Refining Degree-Day Models for Sparganothis Fruitworm in Cranberry by Biofix and Variety.” Rutgers Climate and Energy institute Climate Symposium 2023. *Poster*.

Shope J.B. September 25, 2024. “Climate Change in New Jersey.” Sustainable Planning in the Age of Climate Change Conference, Rutgers Camden. *Presentation and Panel Discussion*.

McDonnell J., **Shope J.B.**, Staffen M., Zemeckis, D., Kohut, J., Newman, M. December 14, 2023. “How to Build Data Literacy Skills in your Climate Change Program(s).” Rutgers Cooperative Extension Annual Conference 2023. *Workshop*.

**Shope J.**, Robinson D., Gerbush M., Muldowney R., Oudemans P., November 2023. “Predictive models of highbush blueberry development with implications for future climate change.” Rutgers Climate and Energy institute Climate Symposium 2023. *Poster*.

Storlazzi C.D., Reguero B.G., Alkins K.C., **Shope J.B.**, Gaido-Lassarre C.L., Viehman T.S., Beck M.W. February 2024. "Coral reef restoration can be cost-effective strategy to provide protection to vulnerable coastal populations" 2024 Ocean Sciences Meeting.

**Shope J.B.**, September 20, 2023. "A Heat Vulnerability Index for New Jersey, USA and other Climate Change Tools," in Tools to Assist Planners to Achieve Urban Heat Resilience session, ISOCARP 59<sup>th</sup> World Planning congress and 5<sup>th</sup> urban Economy Forum. *Talk*.

**Shope J.B.** and Bamhrah, P., June 2, 2023. "A New Heat Vulnerability Index for New Jersey." New Jersey Climate Change Research Symposium 2023. *Talk and Panelist*.

**Shope J.**, Polk D., Mansue C., Rodriguez-Saona C., 2022. The contrasting role of climate variation on the population dynamics of a native and an invasive blueberry insect pest. Rutgers Climate Institute Symposium 2022. *Poster*.

Reguero B., Menendez Fernandez P., Erikson, L.H., **Shope J.B.**, 2020. "Future wave climate in nearshore California: new insights into the need for nearshore projections in local coastal hazard assessments" American Geophysical Union Fall 2020 Meeting.

**Shope J.B.** and Storlazzi C.D., 2017. "Assessing morphologic controls on atoll island shoreline stability due to sea-level rise" Geological Society of America, Cordilleran Section Meeting. *Poster*.

**Shope J.B.**, Storlazzi C.D., Hoeke R.K., 2016. "Modeled atoll shoreline and run-up changes in response to sea-level rise and varying large wave conditions at Wake and Midway Atolls, Northwestern Hawaiian Islands" American Geophysical Union Fall 2016 Meeting. *Poster*.

**Shope J.B.**, Storlazzi C.D., Hoeke R.K., 2016. "Modeled Atoll Shoreline and Run-up Changes in Response to Sea-level Rise and Changing Wave Directions under Large Wave Conditions: Wake and Midway Atolls, Northwestern Hawaiian Islands" Ocean Sciences 2016 Meeting. *Poster*.

**Shope J.B.**, Storlazzi C.D., Erikson L.H., Hegermiller C.A., 2015. "Modeled Changes in Extreme Wave Climates of the Tropical Pacific over the 21<sup>st</sup> Century: Implications for U.S. and U.S.-Affiliated Atoll Islands" Coastal Sediments 2015 Meeting. *Talk*.

**Shope J.B.**, Storlazzi C.D., Erikson L.H., Hegermiller C.A., 2015. "Modeled changes in extreme wave climates in the Pacific Ocean during the 21<sup>st</sup> century and implications for low-lying U.S. and U.S.-affiliated atoll islands" American Geophysical Union 2014 Fall Meeting. *Poster*.

**Shope J.B.**, Storlazzi C.D., Erikson L.H., Hegermiller C.A., 2014. "Modeled changes in extreme wave climate and run-up for US and US-affiliated Pacific Islands during the 21<sup>st</sup> century" 2014 Ocean Sciences Meeting. *Poster*.

**Shope J.B.**, Storlazzi C.D., Erikson L.H., Hegermiller C.A., 2013. "Modeled changes in extreme wave climate for US and US-affiliated Pacific Islands during the 21<sup>st</sup> century" American Geophysical Union 2013 Fall Meeting. *Poster*.

## Extension Publications

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Kaplan, M.B., Robson, M., **Shope, J.** (Summer 2024) "Climate change and Garden State agriculture" *Association of New Jersey Environmental Commissions Report* 44(3), Summer 2024 issue.

**Shope J.B.**, Barr J., Kopp R. (Autumn 2023) "New Jersey will bear the brunt of sea-level rise more than most places." *Association of New Jersey Environmental Commissions Report* 43(3), Autumn 2023 issue. <https://anjec.org/wp-content/uploads/2023/09/autumn-2023-web-version-copy.pdf>

**Shope J.B.**, Polk D., Mansue Denson C., Rodriguez-Saona C. (July 25, 2023) "Seasonal climate effects on the activity of spotted-wing drosophila and blueberry maggot." *The Blueberry Bulletin*, Rutgers New Jersey Agricultural Experiment Station, Vol. 39, No. 17.

## Extension Activity

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Assist with New Jersey Agriculture in the Classroom develop of classroom materials for Climate and Agriculture – Spring 2024.

## Resilience and Stakeholder Meetings

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- Shope, J.B. "Climate Change and Agriculture." November 29, 2023  
*TriCounty Sustainability Alliance Meeting*  
*Climate change effects on New Jersey Agriculture and considerations of how to reduce agricultural emissions.*
- Shope, J.B. "Climate Change and Health." September 26, 2023  
*TriCounty Sustainability Alliance Meeting*  
*Climate change effects on human health and considerations of vulnerability across communities.*
- Shope, J.B. "Climate Change and Rainfall in New Jersey." September 26, 2023  
*New Jersey Coastal Resilience Collaborative, Technical Assistance Coffee Chat.*  
*Climate change effects on rainfall and future projections for NJ presented to coastal stakeholders.*
- Meeting with Emma Thebault and Breanna Gribble, STV Engineering June 30, 2023  
*Regarding climate change resources, heat projections primarily, to inform rail line project in Glassboro to Camden NJ.*

## TEACHING EXPERIENCE

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### **Courses Taught**

- Earth's Changing Climate, 11:670:102:01** Spring 2025  
Rutgers University, New Brunswick, NJ. 3 Credits; Enrollment 37; 75% responsibility
- Introduction to Climate Science, 11:670:102:01** Spring 2024  
Rutgers University, New Brunswick, NJ. 3 Credits; Enrollment 25; 100% responsibility
- Strategies to Jumpstart your STEM learning** 2017–2018  
University of California Santa Cruz, Santa Cruz, CA
- Designed and instructed 8 classes, teaching > 120 under-served students how to succeed in STEM fields
  - Focused on applicable skills such as time management, studying, and problem solving
  - Presented material in a framework of metacognition, neuroplasticity, and growth mindset
  - Developed an interactive online version of the course to be taught during summer sessions

### **Guest Lectures**

- Bridging Public Health and Urban Planning, 2022FA October 15, 2024  
Rutgers Bloustein School of Planning and Public Policy – Discussing climate change, health impacts, and equity
- Seminar in Environmental Engineering, 16:116:611 September 18, 2024

Rutgers Dept. of Environmental Sciences – Discussing Shope’s research, climate change background and impacts to New Jersey

Insects and Climate Change Byrne seminar, 11:090:101 October 18, 2023  
Rutgers University – Discussing climate change impacts on native and invasive blueberry insect pests

Bridging Public Health and Urban Planning, 2022FA October 17, 2023  
Rutgers Bloustein School of Planning and Public Policy – Discussing climate change, health impacts, and equity

Seminar in Environmental Engineering, 16:116:611 September 20, 2023  
Rutgers Dept. of Environmental Sciences – Discussing Shope’s research, climate change background and impacts to New Jersey

Spring 2023 Climate Resilience Graduate Planning Studio, CSB472 Spring 2023  
Rutgers Bloustein School of Planning and Public Policy – Discussing climate change impacts to New Jersey and the Meadowlands region

Bridging Public Health and Urban Planning, Rutgers Bloustein, 2022FA Fall 2022  
School of Planning and Public Policy – Discussing climate change, health impacts, and equity

Transdisciplinary Perspectives on Coastal Climate Risk and Resilience Fall 2022  
Rutgers Climate Risk and Resilience Program – Discussing NJADAPT tools and Climate Institute efforts

### **Teaching Assistant**

UC Santa Cruz, Santa Cruz, CA

- Responsible for coordinating and conducting weekly laboratory sessions; held office hours for students
- Developed laboratory course material; trained junior TAs; led field trips; served as a guest lecturer

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|---|--------------------------|
| <b>Grader</b> , EART140: Geomorphology with Lab                                       | Winter 2017              |
| <b>Teaching Assistant</b> , EART146: Groundwater with Lab                             | Spring 2016              |
| <b>Teaching Assistant</b> , EART5: California Geology with Lab                        | Fall 2015                |
| <b>Teaching Assistant</b> , EART105: Coastal Geology with Lab                         | Winter 2016, Spring 2015 |
| <b>Guest Lecturer</b> , EART1: Oceanography   | Spring 2015, 2016        |
| <b>Teaching Assistant and Guest Lecturer</b> , EART3: Geology of National Parks       | Winter 2014              |
| <b>Teaching Assistant and Guest Lecturer</b> , EART9: Earth History and Global Change | Fall 2012                |
| <b>Teaching Assistant</b> , Physical Geology, Oxford College of Emory University      | Fall 2008                |

## TOOLS & DATA DEVELOPMENT

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NJADAPT – Extreme Rainfall, Spring 2024  
*Future extreme rainfall magnitude and frequency change by municipality tool; in development*

NJADAPT – Public HealthADAPT, Spring 2024  
*Heat vulnerability data and tools; Environmental hazard and health data*

NJADAPT – Climate Dashboard, Summer 2022  
*QA/QC and technical documentation*

NJADAPT – Hazard Tools for NJ Office of Emergency Management, Summer 2022  
*Developed NJ heatwave projections and provided technical guidance*

**Shope, J.B.** March 2023. “New Jersey Heat Vulnerability Index” and supporting technical documentation. Rutgers New Jersey Climate Change Resource Center. Available within NJADAPT.  
<https://njhazadapt.rutgers.edu/>

**Shope, J.B.** et al. 2021. “Modeled extreme total water levels along the U.S. west coast.” U.S. Geological Survey data release, <https://doi.org/10.5066/P95FBGZ1>.

## MENTORING

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Stephanie Sharo – Rutgers Atmospheric Sciences PhD Student. September 1, 2024 – Pres.  
*Advisor*

Kaitlin Quinn – Rutgers Plant Biology Master’s Student. September 1, 2024 – Pres.  
*Master’s Thesis Committee Member*

Anju Vijayan Nair – Rutgers Civil and Environmental Engineering PhD Student. September 1, 2024 – Pres.  
*PhD Committee Member*

Kathryn Davies – Rutgers Climate and Energy Institute Climate Corps student intern 2024–2025

Isabella Wamsher – Rutgers Climate Institute Climate Corps student intern 2023–2024

Angel Alguera – Rutgers Climate Institute Climate Corps student intern 2022–2023

## UNIVERSITY SERVICE

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Rutgers Day – Rutgers Climate and Energy Institute and New Jersey Climate Change Research Center April 27, 2024  
*Help organize and lead day of activities on “How Is the Climate Changing?”*

Rutgers Climate and Energy Institute Climate Symposium 2023 November 15, 2023  
*Poster registration, setup, managed/coordinated students, coordination with other departments for materials*

New Jersey Climate Change Research Symposium 2023 Jun 2023  
*Plan, organize, and select presenters and evaluate abstracts; moderate and help run day-of activities*

Rutgers Day – Rutgers Climate Institute and New Jersey Climate Change Research Center Apr 2023  
*Help organize and lead day of activities on “How Is the Climate Changing?”*

Rutgers Climate Institute Symposium 2022 Nov 2022  
*Poster registration, setup, managed/coordinated students, coordination with other departments for materials*

National Science Foundation Proposal Review Oct 2022

Rutgers Day – Rutgers Climate Institute and New Jersey Climate Change Research Center Apr 2022  
*Help organize and lead day of activities on “How Is the Climate Changing?”*

## PRESS & MEDIA RELATIONS

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- Featured in Rutgers SEBS Newsroom Article – November 27, 2024  
“Rutgers Hosts Leadership from the Federated States of Micronesia”  
*Regarding collaboration with the interdisciplinary food systems science team*
- Featured in Morning AgClips Article – August 19, 2024  
“Rising Temperatures and Poor Air Quality Signal Future Impacts”  
*Regarding the State of the Climate: New Jersey 2023 report*
- Appearance on the New Jersey Morning Show on ONNJ.com August 11, 2024  
*Coordinated by Kaitlyn Giordano. Interview on the State of the Climate: New Jersey 2023*
- Featured in Center for Media Engagement, University of Texas at Austin Article – June 6, 2024  
“Why the New Jersey coasts are at risk from human-caused climate change” by Deborah Abrams Kaplan  
*Regarding sea level rise, flooding, and erosion hazards on the New Jersey Coast*
- Featured in Scripps News Article – “As climate change worsens, Americans September 4, 2023  
struggle to escape its impacts” by Chris Conte  
*Regarding the impact of climate change on various communities and population movement across the U.S.*
- Interviewed by Caitlin Looby from Climate Central in coordination with NJ Spotlight September 1, 2023  
News  
*Regarding resources and topics for stories related to climate change and Ag in New Jersey*
- Featured in NJ Spotlight News Article – “High-tide flooding more frequent at Shore, August 31, 2023  
report says” by Jon Hurdle  
*Regarding strategies for and impact of high tide flooding with SLR*
- Featured in Press of Atlantic City Article – “It Could Be A Matter Of Life And Death,’ July 29, 2023  
Hotter NJ Nights Threaten Vulnerable” by Joe Martucci  
*Regarding warming overnight temperatures, health impacts, and new Jersey heat vulnerability*
- Featured in NJ.com news article – “The disappearing beach,” by Steven Rodas June 22, 2023  
*Regarding beach erosion, beach nourishment, and adaptation strategies in NJ*
- Featured in *Entomology Today* – “Hot Competition: Climate Change, Invasive Fly May 25, 2023  
Displace a Native Blueberry Pest”  
*Article covering “The role of climate variation on the phenological shifts of a native and an invasive insect pest” published in PLOS ONE*
- Interviewed by Steven Rodas, reporter for Star Ledger and NJ.com May 11, 2023  
*Regarding beach nourishment in New Jersey and how it may work in relation to climate change*
- Interviewed by WMBC Apr 27, 2023  
*Regarding Apr 27<sup>th</sup> climate change workshop for NJ teachers and the new climate change standards*
- Interviewed by Tennyson Doneyea, reporter for NPR-WHYA Apr 26, 2023  
*Regarding State of the Climate: New Jersey 2022 report*
- Interviewed by Amira Sweilem, reporter for NJ.com Sep 2022

*Regarding climate change-driven changes in rainfall, sea-level rise, and flooding in New Jersey*

- Interviewed by Amanda Oglesby, reporter for Gannett and Asbury Park Press Oct 2022  
*APP.com article: NJ homeowners are using old flood data to protect their homes, putting 'lives at risk'*
- Interviewed by Susan Phillips, reporter for PBS WHYY, Philadelphia Apr 2022  
*PBS whyy.org article: Rising sea levels and extreme rainfall: Annual report tells New Jersey planners to brace for climate change impacts*
- Quoted in Rutgers Today (*press release*) Apr 2022  
*Title: New Jersey's Temperatures Rise by 4 Degrees Fahrenheit, Twice the Global Average Since 1900*
- Interviewed by Lucy Albright from SUNY Purchase for senior project on climate change Apr 2022  
(*podcast*)
- Featured in the South Plainfield Observer (*newspaper*) Mar 2022  
*Story regarding presentation to Suburban Woman's Club of South Plainfield*

## Fellowship

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- Wells Fargo Coastal Sustainability Fellowship 2016
- Dr. Earl H. Myers & Ethel M. Myers Oceanographic & Marine Biology Trust 2016
- Eugene Cota-Robles Fellowship 2011  
*The Cota-Robles Fellowship is a merit-based fellowship awarded by the University of California on a competitive basis to first-year graduate students who have overcome significant social or educational obstacles to achieve a college education.*

## EXPERTISE AND INTERESTS

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Coastal hazards, climate hazards, climate change resiliency, numerical modeling, sea-level rise, data processing and visualization, communication of hazards and scientific findings, environmental justice, climate and agriculture, climate and public health

## TECHNICAL SKILLS

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*Software:* Matlab, Delft3D Hydrodynamical and Wave Modeling (SWAN), ArcGIS, Python, Adobe Illustrator, and Microsoft Office (including Visual Basic for Applications)

*Modeling:* data visualization, grid design, parameterization, model validation, statistical data analysis, data management

*Other relevant skills:* scientific writing (peer-reviewed papers and technical reports), technical proposal development, project management, collaboration across institutions, public speaking, lecturing, curriculum design

## PROFESSIONAL TRAINING

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- Introduction to Living Shorelines Training, DNREC** 2020

12-hour course introducing living shoreline design and construction approaches. Includes physical and ecological considerations, materials usage and planting, and navigating permitting in Delaware.

**Facilitating Change in Coastal Science and Policy** 2016  
Skills-based, ten-week training in effective leadership; broad communication with media, policy makers, and the public; stakeholder engagement; conflict resolution; team building; and project management

**California Environmental Quality Act (CEQA) Workshop** 2016  
One-day course on the application of CEQA in environmental planning and management. Course taught at California State University, Monterey Bay

## SELECTED HONORS AND AWARDS

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Advanced to candidacy with honors 2013  
Inducted into Phi Beta Kappa honor society 2011  
Magna cum laude distinction in Environmental Studies 2011

## PROFESSIONAL AFFILIATIONS

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National Extension Climate Initiative 2023–pres.  
*Curriculum Committee Member*  
New Jersey Coastal Resilience Collaborative 2021–pres.  
American Geophysical Union: Member 2013–pres.