

# JACOB STUIVENVOLT-ALLEN

jacob.stu.allen@gmail.com | Phone: (801) 856-5597 | [Website](#)

## EDUCATION

### Ph.D. in Climate Science

08/2018 – 04/2022

### Utah State University

Advisor: Shih-Yu Simon Wang

Dissertation: *Impacts of the Changing Pacific on North American Drought, Atmospheric Rivers, and Explosive Cyclones*

### B.S. in Environmental Science

08/2012 – 05/2016

### Loyola Marymount University

Focus on Earth Science, *Cum laude*

## PUBLICATIONS

### IN PREPARATION:

**Stuivenvolt-Allen, J.**, Chikamoto, Y., Wang, S.-Y. (2022). Emergence of decadal hydroclimate regime in the western United States. *Geophysical Research Letters*.

### IN REVIEW:

Pokharel, B., **Stuivenvolt-Allen, J.**, Wang, S.-Y. (Simon), Sharma, S., LaPlante, M., Gillies, R. R., Khanal, S., Wehner, M. F., Rhoades, A. M., Hamal, K., Liu, W.-Y., Mukherjee, S., & Aryal, D. (2021). Climate change and drought amplify the potential for uncontrollable fires in Nepal. *Climatic Change*.

**Stuivenvolt-Allen, J.**, Wang, S.-Y., Chikamoto, Y., Meyer, J.D., Johnson, Z.F. and Deng, L. (2021). Growing Pacific linkage with the interannual variability of explosive cyclogenesis in the North Atlantic: *Climate Dynamics*. DOI: [10.21203/rs.3.rs-1157480/v1](https://doi.org/10.21203/rs.3.rs-1157480/v1)

Dalanhese, L., **Stuivenvolt-Allen, J.**, LaPlante, M., Wang, S.-Y. (2021). An inter-comparison of South American extratropical cyclogenesis using Brazilian Navy data and ERA5: *International Journal of Climatology*.

**Stuivenvolt-Allen, J.**, Wang, S.-Y. (2021) North American fire weather catalyzed by the extratropical transition of tropical cyclones: *Climate Dynamics*. <https://doi.org/10.21203/rs.3.rs-740651/v1>

### PUBLISHED:

**Stuivenvolt-Allen, J.**, Wang, S.-Y. S., Johnson, Z., & Chikamoto, Y. (2021). Atmospheric rivers impacting Northern California exhibit a quasi-decadal frequency. *Journal of Geophysical Research: Atmospheres*, 126, e2020JD034196. <https://doi.org/10.1029/2020JD034196>

Morgan, B., Spangler, K., **Stuivenvolt-Allen, J.**, Morrisett, C. N., Brunson, M. W., Wang, S.-Y. S., & Huntly, N. (2021). Water Availability for Cannabis in Northern California: Intersections of Climate, Policy, and Public Discourse. *Water*, 13(1). <https://doi.org/10.3390/w13010005>

**Stuivenvolt-Allen, J.**, Wang, S.-Y. S., LaPlante, M. D., & Yoon, J.-H. (2021). Three Western Pacific Typhoons Strengthened Fire Weather in the Recent Northwest U.S. Conflagration. *Geophysical Research Letters*, 48(3), e2020GL091430. <https://doi.org/10.1029/2020GL091430>

**Stuivenvolt-Allen, J.**, & Wang, S.-Y. S. (2019). Data-mining climate variability as an indicator of U.S. natural gas: *Frontiers in Big Data: Integrating Big Data with Earth System Models of Natural and Human Systems*. <https://doi.org/10.3389/fdata.2019.00020>

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## RELEVANT PROFESSIONAL EXPERIENCE

<b>Graduate Research Assistant</b> 08/2018 – 07/2022	<b>Utah State University</b> See following section
<b>Teacher's Assistant</b> 01/2019 – 05/2021	<b>Loyola Marymount University</b> Meteorology, Climate and Climate Change
<b>Research Intern</b> 05/2019 – 06/2020	<b>N.O.A.A. Climate Prediction Center</b> Empirical prediction of wintertime teleconnections
<b>Field Guide and Intern</b> 06/2016 – 09/2016	<b>Campanario Biological Station</b> Tropical ecology guide and educator for student groups and tourists
<b>Intern</b> 06/2015 – 05/2016	<b>Center for Urban Resilience</b> Assisted in student projects researching insect biodiversity and behavioral crow studies
<b>Intern</b> 06/2015 – 05/2016	<b>The Santa Monica Bay Foundation</b> Aided in the construction of rain gardens to promote bioremediation and ground water infiltration

## RESEARCH EXPERIENCE

<b>Hydroclimate</b>	<b>Atmospheric Rivers and Drought</b> Low-frequency variability and dynamics of atmospheric rivers and multi-year droughts in the western US
<b>Climate Dynamics</b>	<b>Ocean-atmosphere interactions</b> Impacts of ENSO and tropical teleconnections on North American weather and climate
<b>Fire Weather</b>	<b>Typhoons to fires</b> Responses of North American fire weather to perturbations associated with western North Pacific tropical cyclones
<b>Climate Prediction</b>	<b>Empirical prediction</b> Prediction of winter teleconnections at 1-2 months lead time. Statistical prediction tools for Nepal fire occurrences from meteorological variables
<b>Climate Modeling</b>	<b>Diagnostics with model data</b> Use of partial assimilation experiments, the Community Earth System Model Large Ensemble, and CMIP6 models.

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## FELLOWSHIPS

**Southwest Climate  
Adaptation Science  
Fellowship**  
2020-2021

**SW Climate Adaptation Science Center**  
Research topic: Landscape regeneration in a changing climate after large and destructive fires.

**Campbell Scientific Graduate  
Fellowship**  
2019 and 2020

**AGRI Apogee Instruments**  
Awarded to a student in the Plants, Soils, and Climate department for quality, hypothesis driven research.

**Climate Adaptation Science  
Fellowship**  
2018-2020

**NSF Research Traineeship**  
Research topic: Intersections of Climate, Policy, and Public Discourse in Northern California

## SOFTWARE, PROGRAMMING, AND TECHNOLOGY

**Python**

**Analysis:** EOF, spherical harmonics, Fourier, Wavelet, statistics, regression modeling, composite, correlation, event tracking

**Packages:** MetPy, Scipy/Numpy, Xarray, Matplotlib, eofs, windspharm, pyCWT, Sci-Kit Learn, Pandas,

**GrADS**

**Analysis:** Composite, correlation, event tracking

**Climate Data Operators**

Netcdf file management and manipulation

**Linux/Unix**

Netcdf file management, basic shell scripting

**High Performance Computing**

Experience working on Cheyenne, Casper and other Linux based HPCs

## SERVICE AND OUTREACH

**Peer Review**

**Journals**

Geophysical Research Letters, Frontiers in Earth Science

**Scientific Journalism**

**The Butterfly and the Blaze – Eugene Weekly**

<https://eugeneweekly.com/2020/12/10/the-butterfly-and-the-blaze/>

**Utah Water Issues**

<https://Utahwaterissues.blogspot.com>

**Weather forecasting**  
2016-2020

**Utah Public Radio**

**Ignatians Service  
Organization**  
2012-2016

**Community Service in Los Angeles**

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## CONFERENCE PRESENTATIONS

<b>Yosemite Hydroclimate Workshop</b>	<b>Oral:</b> <i>Long-term cycles of water availability and atmospheric rivers in Northern California</i> <b>Oral:</b> <i>Connecting extremes: Typhoons catalyze fire weather in the western United States</i>
<b>American Geophysical Union</b>	<b>Poster:</b> <i>Water availability for cannabis in Northern California: Intersections of Climate, Policy, and Public Discourse</i>
<b>American Meteorological Society Annual Meeting</b>	<b>Oral:</b> <i>The modulation of natural gas through winter climate and cyclone variability</i>
<b>Southeast Asian Paleo Environments Consortium</b>	<b>Oral:</b> <i>Climate dynamics and climate data</i> <b>Workshop:</b> <i>Climate data analysis and stewardship</i>
<b>NSF Research Traineeship Annual Meeting</b>	<b>Poster:</b> <i>Partnerships to enable science that is useful and used</i>
<b>Southern California Academy of Science</b>	<b>Poster:</b> <i>Measuring runoff fecal indicator bacteria removal efficiency in the Ballona Creek rain garden</i>

## AWARDS AND CERTIFICATIONS

2022	Doctoral Researcher of the Year: Plants, Soils, and Climate Department
2021	Top Award for Science Writing from the American Society of Journalists and Authors: <i>The Butterfly and the Blaze</i>
2020	Graduate Enhancement Award
2019	Best Research Presentation: Plant, Soils and Climate Departmental Showcase
2017	Utah Master Naturalist: Wetlands Certification
2017	Utah Master Naturalist: Mountains Certification
2016	Sigma Xi National Research Honor Society Member