

# J. MICHAEL JOHNSON

*Curriculum Vitae · December 28, 2019*

University of California, Santa Barbara, California · Department of Geography

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## EDUCATION:

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<b>2020 (Expected)</b>	<b>University of California, Santa Barbara, California (UCSB)</b> <ul style="list-style-type: none"><li>&gt; <b>Degree:</b> PhD Candidate in Geography</li><li>&gt; <b>Advisor:</b> Dr. Keith C. Clarke</li><li>&gt; <b>Committee:</b> Dr(s) Hugo Loaiciga, Kelly Caylor, Jeroen Aerts</li><li>&gt; <b>Dissertation:</b> Physical, human, and methodological aspects of modeling California's Water Resources: Implications for 2100</li></ul>
<b>2015</b>	<b>California Polytechnic State University, San Luis Obispo, CA</b> <ul style="list-style-type: none"><li>&gt; <b>Degree:</b> B.S. Anthropology &amp; Geography</li><li>&gt; <b>Honors:</b> Cum Laude</li><li>&gt; <b>Minors:</b> Geographic Information Systems (GIS) for Agriculture Statistics Water Science (Watershed Management Emphasis) Environmental Studies Economics</li></ul>

## AWARDS AND FELLOWSHIPS:

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### Awards And Fellowships

Year	Purpose	Funding Source	Amount
2019	Jack & Laura Dangermond Fellowship	Jack and Laura Dangermond	\$5,000
2019	Visiting Scholar Research Grant	Vrije Universiteit Amsterdam	\$2,500
2019	Excellence in Teaching Award (Nominated)	UCSB Geography	
2018	Summer Support Research Grant	UCSB Geography	\$2,400
2015	Disciplines Fellowship	University of California Regents	\$30,000
2015	Top Undergraduate Paper	California Geographical Society	\$500
2015	Outstanding Senior	Cal Poly Department of Geography	

## Travel Grants

Year	Purpose	Funding Source	Amount
2019	American Geophysical Union	Dangermond Fund	\$500
2018	American Geophysical Union	Graduate Student Association	\$200
2017	American Geophysical Union	Dangermond Fund	\$800
2017	WRF-Hydro Training	CUAHSI	\$500
2016	HAZUS Conference	Dangermond Fund	\$700

## FUNDED RESEARCH PROJECTS:

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- [5] **Team Member:** *Urban Flooding Open Knowledge Network Convergence Project: Phase 1*, NSF (PI at the University of Cincinnati) (2019-2020) \$NA
- [4] **Principal Investigator:** *Programmatic and GUI-driven retrieval and visualization of streamflow for all CONUS rivers*, CUASHI (In Review) \$5,000
- [3] **Co-Principal Investigator:** *A National Water Model R Package: Improving access and application of model output*, UCAR COMET (2018-2019) \$15,000
- [2] **Contributor:** *FOSSFlood: The LivingFlood Application Build on Free Open Source Software*, UCAR COMET (2017-2018) \$5,000
- [1] **Co-Principal Investigator:** *Integrating farmers' adaptive behaviors in California's Central Valley to assess water and food security risks under climate change*, UCGHI Planetary Health Seed Grant (2017-2018) \$10,000

## RESEARCH:

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### Peer-Reviewed Journal Articles

- [6] **J.M. Johnson**, Dinuke Munasinghe, Damilola Eyelade, Sagy Cohen. (2019). "An Integrated Evaluation of the National Water Model (NWM) Height Above Nearest Drainage (HAND) Flood Mapping Methodology". *Natural Hazards and Earth System Sciences*. <https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2019-82/>.
- [5] **J.M. Johnson\***, Marthe Wens\*, Cecilia Zagaria, T.I.E Veldkamp. (2019). "Integrating human behavior dynamics into drought risk assessment - A socio-hydrologic, agent-based approach". *WIREs Water* \* co-first author. <https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1345>.
- [4] Keith C. Clarke, **J.M. Johnson**, Tim Trainor. (2019). "Contemporary American Cartographic Research: A Review and Prospective". *Cartography and Geographic Information Science*. <https://www.tandfonline.com/doi/full/10.1080/15230406.2019.1571441>.
- [3] **J.M. Johnson**, Jim M. Coll, Paul J. Ruess, and Jordan T. Hastings. (2018). "Challenges and Opportunities for Creating Intelligent Hazard Alerts: The 'FloodHippo' Prototype". *Journal of the American Water Resources Association (JAWRA)*. <https://doi.org/10.1111/1752-1688.12645>.

- [2] H.A. Loaiciga, **J.M. Johnson**. (2018). "Infiltration on sloping terrain and its role on runoff generation and slope stability". *Journal of Hydrology*.  
<https://www.sciencedirect.com/science/article/pii/S0022169418302762>.
- [1] **J.M. Johnson**, H.A. Loaiciga. (2017). "Coupled Infiltration and Kinematic-Wave Runoff Simulation in Slopes: Implications for Slope Stability". *Water*.  
<http://www.mdpi.com/2073-4441/9/5/327>.

## Technical Reports

- [3] **J.M. Johnson**, Coll J.M, et al. (2017). "National Water Centers Innovators Program Summer Institute Report". *Consortium of Universities for the Advancement of Hydrologic Science, Inc. Technical Report 14*.  
[https://www.cuahsi.org/uploads/library/CUAHSI\\_2017SI\\_TR14V102\\_DOI.pdf](https://www.cuahsi.org/uploads/library/CUAHSI_2017SI_TR14V102_DOI.pdf).
- [2] **J.M. Johnson**, Coll J.M, Ruess P.J.. (2016). "OPERA-Operational Platform for Emergency Response and Awareness: Reimagining Disaster Alerts". *National Water Center Innovators Program Summer Institute Report. Consortium of Universities for the Advancement of Hydrologic Science, Inc. Technical Report 13, Ch 11*.  
[https://www.cuahsi.org/uploads/library/cuahsi\\_tr13\\_8.20.16.pdf](https://www.cuahsi.org/uploads/library/cuahsi_tr13_8.20.16.pdf).
- [1] Coll J.M, **J.M. Johnson**, Ruess P.J.. (2016). "Radar Measurement and Flow Modeling: Methods". *National Water Center Innovators Program Summer Institute Report. Consortium of Universities for the Advancement of Hydrologic Science, Inc. Technical Report 13, Ch 1*. [https://www.cuahsi.org/uploads/library/cuahsi\\_tr13\\_8.20.16.pdf](https://www.cuahsi.org/uploads/library/cuahsi_tr13_8.20.16.pdf).

## Cartography

- [3] **J.M. Johnson**. (2017). "Peoples and Regions of Africa [map]. Scale not given". *Cole, Herbert M. Maternity: Mothers and Children in the Arts of Africa, CT: Yale University Press*.
- [2] **J.M. Johnson**. (2017). "Rising Sea Levels: Hawaii [map]. Scale not given". *Water: An Atlas. Oakland, CA: Guerrilla Cartography*.
- [1] **J.M. Johnson**. (2017). "Map of Staats-Brabant indicating territories and boundaries c. 1648 [map]. Scale not given". *van de Meerendonk et al. Striving for Unity: The Significance and Original Context of Political Allegories by Theodoor van Thulden for 's-Hertogenbosch Town Hall. Early Modern Low Countries. Figure 6*.  
<https://www.emlc-journal.org/articles/10.18352/emlc.26/>.

## In Review Articles

- [2] **J.M. Johnson**, Keith C. Clarke. (2019). "AOI: An R package for fast and flexible geocoding, boundary query, and AOI generation". *Journal of Open Source Software*<sup>1</sup>. [https://github.com/mikejohnson51/AOI/blob/master/paper/output/2019-09-06\\_paper.pdf](https://github.com/mikejohnson51/AOI/blob/master/paper/output/2019-09-06_paper.pdf).
- [1] **J.M. Johnson**, Keith C. Clarke. (2019). "What is Water Security?" *Suggest transfer from Journal of Hydrology Editor to Environmental Science and Policy*<sup>1</sup>.

<sup>1</sup>Preprint available upon request.

## Working Papers

- [5] Coll J.M, **J.M. Johnson**. (2019). "Free and Open Source Software for Mapping Flood Inundation Impacts using HAND and National Water Model Outputs". In preparation<sup>1</sup>.
- [4] **J.M. Johnson**, Shraddhanand Shukla, Keith C. Clarke. (2020). "The impact of the last two decades of California fires on evapotranspiration as seen from space". In preparation<sup>1</sup>.
- [3] **J.M. Johnson**, Keith C. Clarke. (2020). "A New Method for Categorical Raster Resampling". In preparation.
- [2] **J.M. Johnson**, Patrick W. Johnson, Keith C. Clarke. (2020). "A National Scale System for Local Streamflow Visualization". In preparation<sup>1</sup>.  
<https://mikejohnson51.github.io/mikejohns51.github.io/FlowFinder/>.
- [1] Damiola Eyelade, **J.M. Johnson**. (2020). "Parametrizing Roughness Coefficients for CONUS Scale Synthetic Rating Curves". In preparation.

<sup>1</sup>Preprint available upon request.

## SCIENTIFIC SOFTWARE:

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### Creator

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|-------------------------|--|
| [7] <b>AOI</b>          | <b>An R package for fast &amp; flexible geocoding, boundary query, and AOI generation</b><br><a href="https://mikejohnson51.github.io/AOI/">https://mikejohnson51.github.io/AOI/</a>                 |
| [6] <b>HydroData</b>    | <b>An R package for finding geospatial and observation data</b><br><a href="https://mikejohnson51.github.io/HydroData/">https://mikejohnson51.github.io/HydroData/</a>                               |
| [5] <b>FlowFinder</b>   | <b>Geovisualization portal for exploring and accessing operational streamflow forecasts</b><br><a href="https://mikejohnson51.github.io/FlowFinder/">https://mikejohnson51.github.io/FlowFinder/</a> |
| [4] <b>NWM</b>          | <b>An R client for the National Water Model</b><br><a href="https://mikejohnson51.github.io/NWM/">https://mikejohnson51.github.io/NWM/</a>   |
| [3] <b>climateR</b>     | <b>An R client for compiling gridded and observation climate data</b><br><a href="https://github.com/mikejohnson51/climateR">https://github.com/mikejohnson51/climateR</a>                           |
| [2] <b>FloodMapping</b> | <b>An R Package for flood mapping using HAND and the National Water Model</b><br><a href="https://mikejohnson51.github.io/FloodMapping/">https://mikejohnson51.github.io/FloodMapping/</a>           |
| [1] <b>nwmRetro</b>     | <b>An R package for supplementing NHD volume estimates using the NWM.</b><br><a href="https://github.com/mikejohnson51/nwmRetro">https://github.com/mikejohnson51/nwmRetro</a>                       |

## Contributor

- [1] **USGS-R nhdplusTools**      **An R API for manipulating hydrographic data using the NHDPlus data model**  
<https://github.com/USGS-R/nhdplusTools>

## PRESENTATIONS:

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[18]	Dec 2019	<b>American Geophysical Union Fall Meeting</b> <i>Representing Landover in the National Water Model</i>	poster
[17]	Dec 2020	<b>American Geophysical Union Fall Meeting</b> <i>Identifying disturbed watersheds using 20 years of MODIS and Google Earth Engine</i>	poster
[16]	Dec 2021	<b>American Geophysical Union Fall Meeting</b> <i>Using Google Earth Engine and MODIS T to detect watershed disturbance</i>	presentation (Google Booth)
[15]	Dec 2018	<b>American Geophysical Union Fall Meeting</b> <i>The National Water Model and R: Providing fast discovery, access, and usability of NWM output and earth systems data</i>	presentation
[14]	Dec 2018	<b>American Geophysical Union Fall Meeting</b> <i>Drought adaptation behavior of agricultural stakeholders: An Agent Based Model for Kenya</i>	presentation
[13]	June 2018	<b>International Congress on Environmental Modelling and Software</b> <i>An agent-based approach to evaluating sustainable drought adaptation policy</i>	presentation
[12]	June 2018	<b>International Congress on Environmental Modelling and Software</b> <i>Simulating dynamic drought adaptation behavior of agricultural stakeholders using Agent-Based Models</i>	presentation
[11]	April 2018	<b>European Geophysical Union</b> <i>Integrating Adaption behavior in drought risk analysis</i>	poster
[10]	Dec 2017	<b>American Geophysical Union Fall Meeting</b> <i>HydroData: Discover Earth Systems Data with R</i>	eLightning talk
[9]	July 2017	<b>CUAHSI Hydroinformatics Conference</b> <i>Real-time Discharge-to-Damage Flood Mapping 'Anywhere, USA'</i>	presentation
[8]	May 2017	<b>@Spatial Tech Talk UCSB Spatial Center</b> <i>Accessing National Water Model Output</i>	presentation
[7]	Nov 2016	<b>UCGIS Webinar</b> <i>2017 CUAHSI SI: Collaborative Problem Solving at the National Water Center</i>	presentation
[6]	Nov 2016	<b>HAZUS Users Conference</b> <i>Reimagining Disaster Alert Systems: OPERA</i>	presentation
[5]	Oct 2016	<b>UCSB-SDSU Retreat</b> <i>The Five Meanings of Water Security</i>	presentation
[4]	July 2016	<b>CUAHSI Biennial Conference</b> <i>Densified Radar Measurement and Flow Modeling</i>	poster

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| [3] | May 2016   | <b>California Geography Society 2016 Annual Conference</b><br><i>Rising Temperatures and Water Supply: Tools for Water Security</i>    | presentation |
| [2] | April 2016 | <b>UC Student Lobby Conference</b><br><i>Water Research: Problems with Scale</i>   | presentation |
| [1] | May 2015   | <b>California Geography Society 2015 Annual Conference</b><br><i>Developing a Decision Support System for California Surface Water</i> | presentation |

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## TEACHING ASSISTANT, DEPARTMENT OF GEOGRAPHY, UCSB:

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|-----|-------------------------|--|
| [7] | Summer 2019, 2018, 2016 | <b>Living with Global Warming<sup>1</sup></b><br>Lower-Division - <i>Dr. Catherine Gautier</i>                                 |
| [6] | Spring 2019             | <b>Remote Sensing of the Environment 3</b><br>Upper-Division - <i>Dr. Vena Chu</i>   |
| [5] | Winter 2019, 2017       | <b>Conceptual Modeling and Programming for the Geo-Sciences</b><br>Upper-Division and Graduate - <i>Dr. Krzysztof Janowicz</i> |
| [4] | Fall 2019, 2018, 2017   | <b>Maps and Spatial Reasoning</b><br>Lower-Division - <i>Dr. Keith Clarke</i>  |
| [3] | Spring 2018             | <b>Cartographic Design and Geovisualization</b><br>Upper-Division - <i>Dr. Keith Clarke</i>                                    |
| [2] | Spring 2017             | <b>Environmental Water Quality</b><br>Upper-Division - <i>Dr. Hugo Loaiciga</i>  |
| [1] | Fall 2016               | <b>Oceans and Atmosphere</b><br>Lower-Division - <i>Dr. Tim DeVeries</i>   |

<sup>1</sup>Grader

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## SERVICE:

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| [4] | Chair's Graduate Advisory Committee: <i>2019-2020 Academic Year</i>          |
| [3] | Spatial Data Science Faculty Search Committee: <i>2018</i>                   |
| [2] | Reviewer for: <i>European Journal of Environmental and Civil Engineering</i> |
| [1] | Department Outreach Committee: <i>2015-2017</i>                              |

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## EXPERIENCE:

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| <b>2019</b> | National Science Foundation AEIO       | San Fransisco                |
| <b>2019</b> | Urban Flooding Open Knowledge Net-work | Raligh, North Carolina       |
| <b>2019</b> | Visiting Researcher                    | Vrije Universiteit Amsterdam |
| <b>2019</b> | Spatial Discovery Experts Meeting      | Santa Barbara                |

<b>2018</b>	Visiting Researcher	NCAR Research Applications Laboratory
<b>2018</b>	Visiting Researcher	Vrije Universiteit Amsterdam
<b>2017</b>	Summer Institute Course Coordinator	NOAA National Water Center
<b>2016</b>	Summer Institute Research Fellow	NOAA National Water Center
<b>2016</b>	Head Poster Judge - CGS Annual Conference	California Geographical Society
<b>2015</b>	County GIS Technician	El Paso County, Colorado
<b>2014 - 2015</b>	GIS Peer Assistant	Cal Poly Data Studio
<b>2014 - 2019</b>	Certified Agricultural Irrigation Specialist	Irrigation Association
<b>2014</b>	County GIS Intern	San Luis Obispo County, California
<b>2013</b>	Piedras Blancas Mapping and Restoration	Bureau of Land Management

#### **UNDERGRADUATE RESEARCH MENTORSHIP, UCSB:**

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<b>2018</b>	Dino Korac
<b>2017</b>	Benjamin Sterne, Eric Gunter
<b>2016</b>	Jeremy Neil

#### **REFERENCES:**

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##### **Keith Clarke, PhD**

Department of Geography University of California, Santa Barbara, USA  
*kcclarke@ucsb.edu*

##### **Krzysztof Janowicz, PhD**

Department of Geography University of California, Santa Barbara, USA  
*janowicz@ucsb.edu*

##### **Trey Flowers, PhD**

Director of the Analysis and Prediction Division at the National Water Center  
*trey.flowers@noaa.gov*

##### **David Blodgett**

Project coordinator with the USGS Office of Water Information Center for Integrated Data Analytics  
*dblodgett@usgs.gov*

##### **Aubrey Dugger**

Associate Scientist IV, National Center for Atmospheric Research  
*adugger@ucar.edu*