

# J. MICHAEL JOHNSON

*Curriculum Vitae · October 20, 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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- [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: Implications for Environmental Modeling". 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] David Blodgett, Mark Sondheim, **J.M. Johnson**, Michael Wieczorek. (2020). "Mainstems and drainage basins: the organizing principles of surface water". In preparation<sup>1</sup>.

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

## SCIENTIFIC SOFTWARE:

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### Creator

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

### 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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|------|------------|--|-----------------|
| [15] | Dec 2018   | <b>American Geophysical Union Fall Meeting</b><br><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><br><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><br><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><br><i>Simulating dynamic drought adaptation behavior of agricultural stakeholders using Agent-Based Models</i> | presentation    |
| [11] | April 2018 | <b>European Geophysical Union</b><br><i>Integrating Adaption behavior in drought risk analysis</i>   | poster          |
| [10] | Dec 2017   | <b>American Geophysical Union Fall Meeting</b><br><i>HydroData: Discover Earth Systems Data with R</i>   | eLightning talk |
| [9]  | July 2017  | <b>CUAHSI Hydroinformatics Conference</b><br><i>Real-time Discharge-to-Damage Flood Mapping 'Anywhere, USA'</i>  | presentation    |
| [8]  | May 2017   | <b>@Spatial Tech Talk UCSB Spatial Center</b><br><i>Accessing National Water Model Output</i>  | presentation    |
| [7]  | Nov 2016   | <b>UCGIS Webinar</b><br><i>2017 CUAHSI SI: Collaborative Problem Solving at the National Water Center</i>  | presentation    |
| [6]  | Nov 2016   | <b>HAZUS Users Conference</b><br><i>Reimagining Disaster Alert Systems: OPERA</i>  | presentation    |
| [5]  | Oct 2016   | <b>UCSB-SDSU Retreat</b><br><i>The Five Meanings of Water Security</i>   | presentation    |
| [4]  | July 2016  | <b>CUAHSI Biennial Conference</b><br><i>Densified Radar Measurement and Flow Modeling</i>  | poster          |
| [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    |

## TEACHING ASSISTANT, DEPARTMENT OF GEOGRAPHY, UCSB:

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

<sup>1</sup>Grader

## SERVICE:

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

## EXPERIENCE:

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<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  
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**Krzysztof Janowicz, PhD**

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**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*