

## Research Scientist I Department of Forest and Wildlife Ecology University of Wisconsin–Madison

### Contact Information

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ResearcherID: [K-9286-2013](https://www.researcherid.com/K-9286-2013)  
Google Scholar: <http://goo.gl/YI9Lgx>  
GitHub: <https://github.com/megarcia>  
ResearchGate: [www.researchgate.net/profile/Matthew\\_Garcia3](http://www.researchgate.net/profile/Matthew_Garcia3)  
LinkedIn: <http://www.linkedin.com/in/matthewgarcia>

### Refereed Publications in Review/Revision

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**Garcia, M.**, B.R. Sturtevant, Y. Boulanger, and J. Régnière, *in review*: "Modeling weather-driven long-distance dispersal of spruce budworm moths (*Choristoneura fumiferana*). Part 2: Flight model calibration using radar data." *Agricultural and Forest Meteorology*.

### First-author Refereed Scientific Publications

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- Garcia, M.**, B.R. Sturtevant, R. Saint-Amant, J.J. Charney, J. Delisle, Y. Boulanger, P.A. Townsend, and J. Régnière, 2022: "Modeling weather-driven long-distance dispersal of spruce budworm moths (*Choristoneura fumiferana*). Part 1: Model description." *Agricultural and Forest Meteorology*, v. 315, paper no. 108815, doi: [10.1016/j.agrformet.2022.108815](https://doi.org/10.1016/j.agrformet.2022.108815).
- Garcia, M.**, B. Zuckerberg, J.M. LaMontagne, and P.A. Townsend, 2021: "Landsat-based detection of mast events in white spruce (*Picea glauca*) forests." *Remote Sensing of Environment*, v. 254, paper no. 112278, doi: [10.1016/j.rse.2020.112278](https://doi.org/10.1016/j.rse.2020.112278).
- Garcia, M.**, and P.A. Townsend, 2016: "Recent climatological trends and potential influences on forest phenology around western Lake Superior, USA." *Journal of Geophysical Research–Atmospheres*, v. 121, pp. 13,364–13,391, doi: [10.1002/2016JD025190](https://doi.org/10.1002/2016JD025190). Code and data supplement at <https://matthewgarcia.tech/WxCD>.
- Garcia, M.**, M. Ozdogan, and P.A. Townsend, 2014: "Impacts of forest harvest on cold season land surface conditions and land-atmosphere interactions in northern Great Lakes states." *Journal of Advances in Modeling Earth Systems*, v. 6, pp. 923–937, doi: [10.1002/2014MS000317](https://doi.org/10.1002/2014MS000317).
- Garcia, M.**, C.D. Peters-Lidard, and D.C. Goodrich, 2008: "Spatial interpolation of precipitation in a dense gauge network for monsoon storm events in the southwestern U.S." *Water Resources Research*, v. 44, paper no. W05S13, doi: [10.1029/2006WR005788](https://doi.org/10.1029/2006WR005788).

### Other Refereed Scientific Publications

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- Liu, N., **M. Garcia**, A. Singh, J.D.J. Clare, J.L. Stenglein, B. Zuckerberg, E.L. Kruger, and P.A. Townsend, 2021: "Trail camera networks provide insights into satellite-derived phenology for ecological studies." *International Journal of Applied Earth Observations and Geoinformation*, v. 97, paper no. 102291, doi: [10.1016/j.jag.2020.102291](https://doi.org/10.1016/j.jag.2020.102291).
- Régnière, J., **M. Garcia**, and R. Saint-Amant, 2019: "Modeling migratory flight in the spruce budworm: Circadian rhythm." *Forests*, v. 10, 877, doi: [10.3390/f10100877](https://doi.org/10.3390/f10100877).
- Régnière, J., J. Delisle, B.R. Sturtevant, **M. Garcia**, and R. Saint-Amant, 2019: "Modeling migratory flight in the spruce budworm: Temperature constraints." *Forests*, v. 10, 802, doi: [10.3390/f10090802](https://doi.org/10.3390/f10090802).
- Tian, Y., C.D. Peters-Lidard, J.B. Eylander, R.J. Joyce, G.J. Huffman, R.F. Adler, K.-L. Hsu, F.J. Turk, **M. Garcia**, and J. Zeng, 2009: "Component analysis of errors in satellite-based precipitation estimates." *Journal of Geophysical Research–Atmospheres*, v. 114, paper no. D24101, doi: [10.1029/2009JD011949](https://doi.org/10.1029/2009JD011949).
- Peters-Lidard, C.D., D.M. Mocko, **M. Garcia**, J.A. Santanello, Jr., M. Tischler, M.S. Moran, and Y. Wu, 2008: "The role of precipitation uncertainty in the estimation of hydrologic soil properties using remotely-sensed

- soil moisture in a semi-arid environment.” *Water Resources Research*, v. 44, paper no. W05S18, doi: [10.1029/2007WR005884](https://doi.org/10.1029/2007WR005884).
- Tian, Y., C.D. Peters-Lidard, B. Choudhury, and **M. Garcia**, 2007: “Multitemporal analysis of TRMM-based satellite precipitation products for land data assimilation applications.” *Journal of Hydrometeorology*, v. 8, pp. 1165-1183, doi: [10.1175/2007JHM859.1](https://doi.org/10.1175/2007JHM859.1).
- Santanello, J.A., Jr., C. Peters-Lidard, **M.E. Garcia**, D. Mocko, M. Tischler, M.S. Moran, and D.P. Thoma, 2007: “Using remotely-sensed estimates of soil moisture to infer soil texture and hydraulic properties across a semi-arid watershed.” *Remote Sensing of Environment*, v. 110, pp. 79-97, doi: [10.1016/j.rse.2007.02.007](https://doi.org/10.1016/j.rse.2007.02.007).
- Tischler, M., **M. Garcia**, C. Peters-Lidard, M.S. Moran, S. Miller, D. Thoma, S. Kumar, and J. Geiger, 2006: “A GIS framework for surface-layer soil moisture estimation combining satellite radar measurements and land surface modeling with soil physical property estimation.” *Environmental Modelling and Software*, v. 22, pp. 891-898, doi: [10.1016/j.envsoft.2006.05.022](https://doi.org/10.1016/j.envsoft.2006.05.022).
- Schubert, W.H., S.A. Hausman, **M. Garcia**, K.V. Ooyama, and H.-C. Kuo, 2002: “Potential vorticity in a moist atmosphere.” *Journal of the Atmospheric Sciences*, v. 58, pp. 3148-3157, doi: [10.1175/1520-0469\(2001\)058<3148:PVIAMA>2.0.CO;2](https://doi.org/10.1175/1520-0469(2001)058<3148:PVIAMA>2.0.CO;2).

### ***First-author Conference and Workshop Oral Presentations***

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- Garcia, M.**, B.R. Sturtevant, T.M. Poland, C.J. Morrow, B.T. Wilson, S.J. Burr, S.J. Crocker, R.P. Hanavan, A. Liebhold, P.A. Townsend, 2024: “Forest pest detection and monitoring in the Upper Great Lakes through remote sensing of phenology and ancillary data synthesis.” Symposium on Remote Sensing of Landscape Change and Disturbance, 2024 Annual Meeting of the International Association for Landscape Ecology–North America (IALE–NA), 1–4 April 2024, Oklahoma City, Oklahoma.
- Garcia, M.**, B.R. Sturtevant, T.M. Poland, B.T. Wilson, S.J. Burr, S.J. Crocker, R.P. Hanavan, A. Liebhold, P.A. Townsend, 2023: “Forest disturbance detection and tracking in the U.S. Upper Great Lakes through a synthesis of meteorology and remotely sensed phenology.” Symposium on Remote Sensing of Landscape Change and Disturbance, 2023 Annual Meeting of the International Association for Landscape Ecology–North America (IALE–NA), 19–23 March 2023, Riverside, California.
- Garcia, M.**, J. Régnière, B.R. Sturtevant, and Y. Boulanger, 2022: “Differences in weather-driven dispersal patterns between spruce budworm males and females and their potential effects on nearby populations.” 2022 North American Forest Ecology Workshop (NAFEW), 20–24 June 2022, virtual. Abstract available at <https://cef-cfr.uqam.ca/nafew2022/index.php#schedule>.
- Garcia, M.**, B.R. Sturtevant, J. Régnière, R. Saint-Amant, Y. Boulanger, and P.A. Townsend, 2022: “Weather-Driven Insect Dispersal Simulations using Workflows that Combine HTC and HPC Resources.” HTCondor Week 2022, 23-26 May 2022, University of Wisconsin–Madison, Madison, Wisconsin. Summary and slides available at <https://agenda.hep.wisc.edu/event/1733/contributions/24771/>, recorded presentation available at <https://www.youtube.com/watch?v=EFYMwxAnA44>.
- Garcia, M.**, B.R. Sturtevant, J. Régnière, Y. Boulanger, R. St-Amant, B.J. Cooke, G. Achtemeier, J.J. Charney, and P.A. Townsend, 2019: “Modeling Aerial Dispersal of Eastern Spruce Budworm Moths During Summer Migration.” 2019 Joint Meeting of the Canadian Society for Ecology and Evolution (CSEE), the Entomological Society of Canada (ESC), and the Acadian Entomological Society (AES), 18-21 August 2019, Fredericton, New Brunswick, Canada.
- Garcia, M.**, B.R. Sturtevant, J. Régnière, Y. Boulanger, R. Saint-Amant, B.J. Cooke, G. Achtemeier, J.J. Charney, and P.A. Townsend, 2019: “Modeling Aerial Dispersal of Eastern Spruce Budworm Moths During Summer Migration.” 2019 Annual Meeting of the Ecological Society of America (ESA), 11-16 August 2019, Louisville, Kentucky.
- Garcia, M.**, B.R. Sturtevant, J. Régnière, Y. Boulanger, R. Saint-Amant, B.J. Cooke, G. Achtemeier, J.J. Charney, and P.A. Townsend, 2019: “Modeling Aerial Dispersal of Eastern Spruce Budworm Moths During Summer Migration.” 2019 meeting of IUFRO Sections 7.03.06 and 7.03.07 regarding “Population Dynamics and Integrated Management of Forest Insects,” 8 July 2019, Québec City, Québec, Canada.
- Garcia, M.**, B.R. Sturtevant, and P.A. Townsend, 2019: “Spatiotemporally Explicit Modeling of Forest Phenology Using Weather and Climatology.” 2019 North American Forest Ecology Workshop (NAFEW), 23-27 June 2019, Flagstaff, Arizona.
- Garcia, M.**, B.R. Sturtevant, J. Régnière, Y. Boulanger, R. Saint-Amant, B.J. Cooke, G. Achtemeier, J.J. Charney, and P.A. Townsend, 2019: “Modeling Aerial Dispersal of Eastern Spruce Budworm Moths During Summer Migration.” 2019 North American Forest Ecology Workshop (NAFEW), 23-27 June 2019, Flagstaff, Arizona.

- Garcia, M.,** B.R. Sturtevant, and P.A. Townsend, 2019: “Spatiotemporally explicit forest phenoclimatology in northeastern Minnesota, USA.” Symposium on Remote Sensing of Landscape Ecology: State of the Art/Science, 2019 Annual Meeting of the U.S. Regional Association of the International Association for Landscape Ecology (IALE), 7-11 April 2019, Fort Collins, Colorado.
- Garcia, M.,** B.R. Sturtevant, J. Régnière, Y. Boulanger, R. Saint-Amant, B.J. Cooke, G. Achtemeier, J.J. Charney, and P.A. Townsend, 2018: “Using Landsat, Aerial Surveys, Weather Modeling, and Agent-based Models of Outbreak Insect Phenology and Migration to Explore the Topographic Concentration Hypothesis.” ForestSAT 2018, 1-5 October 2018, University of Maryland–College Park, College Park, Maryland.
- Garcia, M.,** and P.A. Townsend, 2018: “Landsat Image Time Series Processing using HTCondor on UW-CHTC and OSG Resources.” HTCondor Week 2018, 21-24 May 2018, University of Wisconsin–Madison, Madison, Wisconsin. Slides available at <https://agenda.hep.wisc.edu/event/1201/other-view>.
- Garcia, M.,** P.A. Townsend, and B.R. Sturtevant, 2018: “Identifying Defoliation-based Disturbances in Forests Around Western Lake Superior Using a 30-year Landsat-based Phenoclimatology Analysis.” Symposium on State-of-the-Art Techniques for Remote Sensing of Disturbed Landscapes, 2018 Annual Meeting of the U.S. Regional Association of the International Association for Landscape Ecology (IALE), 8-12 April 2018, Chicago, Illinois. Abstract available at <http://sched.co/DeMf>.
- Garcia, M.,** P.A. Townsend, and B.R. Sturtevant, 2018: “Identifying moderate-severity disturbances in forests around western Lake Superior using a 30-year Landsat-based phenoclimatology record.” Symposium on Forest Entomology, 2018 North Central Branch Meeting of the Entomological Society of America, 18-21 March 2018, Madison, Wisconsin. <https://esa.confex.com/esa/2018ncb/meetingapp.cgi/Paper/128215>.
- Garcia, M.,** and P.A. Townsend, 2017: “HTCondor Workflow Development for Statistical Modeling of Satellite Image Time Series with Ancillary Data.” HTCondor Week 2017, 2-5 May 2017, University of Wisconsin–Madison, Madison, Wisconsin.
- Garcia, M.,** 2016: “Changes in Climate, Forest Phenology, and Forest Disturbances around Western Lake Superior.” Wisconsin Space Conference, 11 August 2016, Superior, Wisconsin.
- Garcia, M.,** and K.K. Hirschboeck, 2009: “Integrating a Flood Hydroclimatology Database with the Arizona Hydrologic Information System (AHIS).” *Arizona Hydrological Society and American Institute of Hydrology*, 2009 Annual Water Symposium on Managing Hydrologic Extremes, 30 August - 2 September 2009, Scottsdale, Arizona.
- Garcia, M.,** K. Jacobs, G.C. Woodard, C. Gries, W.-D. Otte, R. Vazquez, and J. McGill, 2009: “Ground Water-Related Data Services for the Arizona Hydrologic Information System (AHIS).” *National Ground Water Association*, 2009 Ground Water Summit, 20-23 April 2009, Tucson, Arizona.
- Garcia, M.,** C.D. Peters-Lidard, J.B. Eylander, C. Daly, Y. Tian, and J.L. Zeng, 2008: “Development and evaluation of climatologically-downscaled AFWA AGRMET precipitation products over the continental U.S.” *American Geophysical Union*, Joint Assembly, 27-30 May 2008, Fort Lauderdale, Florida. *Eos Trans. AGU*, v. 89, no. 23, Jt. Assem. Suppl., Abstract H24A-01.
- Garcia, M.,** C.D. Peters-Lidard, J.B. Eylander, C. Daly, Y. Tian, and J. Zeng, 2007: “Use of climatological downscaling for evaluation of satellite-based precipitation analyses over the continental U.S.” 1st Workshop on the Evaluation of High-Resolution Precipitation Products, 3-5 December 2007, Geneva, Switzerland.
- Garcia, M.,** C.D. Peters-Lidard, and D. Goodrich, 2006: “Spatial interpolation of precipitation in a dense gauge network for monsoon storm events in southeastern Arizona.” *American Geophysical Union*, Joint Assembly, 23-26 May 2006, Baltimore, Maryland. *Eos Trans. AGU*, v. 87, no. 36, Jt. Assem. Suppl., Abstract H21C-04.
- Garcia, M.,** 2005: “NOAA-NWS Quantitative Precipitation Estimation—a NASA perspective.” NOAA-NWS-NSSL Next-Generation QPE (Q2) Science Workshop, 28–30 June 2005, Norman, Oklahoma.
- Garcia, M.,** 2000: “Characteristics of convective development in simulated squall lines.” *American Meteorological Society*, 24th Conference on Hurricanes and Tropical Meteorology, 29 May – 2 June 2000, Ft. Lauderdale, Florida.

### ***First-author Conference and Workshop Poster Presentations***

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- Garcia, M.,** and P.A. Townsend, 2018: “Landsat-based Upper Great Lakes Forest Phenoclimatology, 1984-2013.” ForestSAT 2018, 1-5 October 2018, University of Maryland–College Park, College Park, Maryland, doi: [10.6048/m9.figshare.7172807.v1](https://doi.org/10.6048/m9.figshare.7172807.v1).

- Garcia, M.**, and M. Ozdogan, 2013: “Impacts of forest harvest on cold season land surface conditions and land–atmosphere interactions in northern Great Lakes states.” Center for Climate Research, University of Wisconsin–Madison, Madison, Wisconsin, doi: [10.6084/m9.figshare.900949](https://doi.org/10.6084/m9.figshare.900949).
- Garcia, M.**, C.D. Peters-Lidard, J.B. Eylander, C. Daly, Y. Tian, and J.L. Zeng, 2007: “Climatological downscaling and evaluation of AGRMET precipitation analyses over the continental U.S.” *American Geophysical Union*, Joint Assembly, 22–25 May 2007, Acapulco, Mexico. *Eos Trans. AGU*, v. 88, no. 23, Jt. Assem. Suppl., Abstract H53B-03, doi: [10.6084/m9.figshare.826212](https://doi.org/10.6084/m9.figshare.826212).
- Garcia, M.**, S. Kumar, D. Gochis, D. Yates, J. McHenry, T. Burnet, C. Coats, and J. Condrey, 2006: “Distributed application of the Unified Noah LSM with hydrologic flow routing on an Appalachian headwater basin.” *American Geophysical Union*, Joint Assembly, 23–26 May 2006, Baltimore, Maryland. *Eos Trans. AGU*, v. 87, no. 36, Jt. Assem. Suppl., Abstract H23D-20, doi: [10.6084/m9.figshare.826211](https://doi.org/10.6084/m9.figshare.826211).

### **Other Conference and Workshop Publications**

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- Sturtevant, B.R., **M. Garcia**, J. Régnière, Y. Boulanger, B.J. Cooke, J.J. Charney, G.L. Achtemeier, J. Delisle, M. Rhoads, and R. Saint-Amant, 2018: “Integrating Moth Flight Biophysics with Independent Validation Data to Model Atmospheric Dispersal of the Eastern Spruce Budworm (*Choristoneura fumiferana*).” 2018 Annual Meeting of the U.S. Regional Association of the International Association for Landscape Ecology (IALE), 8–12 April 2018, Chicago, Illinois. Abstract available at <http://sched.co/DeNw>.
- Tian, Y., C. Peters-Lidard, J.B. Eylander, **M. Garcia**, and J. Zeng, 2008: “Quantifying the impact of land surface properties on satellite-based precipitation estimates.” *American Meteorological Society*, 22nd Conference on Hydrology, 88th Annual Meeting of the AMS, 21–24 January 2008, New Orleans, Louisiana, abstract no. 130524.
- Garcia, M.**, S.V. Kumar, D.J. Gochis, D.N. Yates, J. McHenry, T. Burnet, C.J. Coats, and J. Condrey, 2007: “Test application of a distributed hydrologic LSM with subsurface and overland flow routing for a tropical storm event in an Appalachian headwater basin.” *American Meteorological Society*, 21st Conference on Hydrology, 87th Annual Meeting of the AMS, 15–18 January 2007, San Antonio, Texas, abstract no. 120846.
- Garcia, M.**, Y. Tian, C.D. Peters-Lidard, J.B. Eylander, C. Daly, R. Joyce, and J. Janowiak, 2007: “Spatial downscaling and evaluation of CMORPH analyses over the continental U.S.” *American Meteorological Society*, 21st Conference on Hydrology, 87th Annual Meeting of the AMS, 15–18 January 2007, San Antonio, Texas, abstract no. 120856.
- Santanello, J., Jr., C. Peters-Lidard, **M. Garcia**, D. Mocko, M. Tischler, M.S. Moran, and D. Thoma, 2007: “Using remotely-sensed estimates of soil moisture to infer soil texture and hydraulic properties across a semi-arid watershed.” *European Geosciences Union*, General Assembly, 15–20 April 2007, Vienna, Austria. *Geophysical Research Abstracts*, v. 9, paper no. 03098.
- Peters-Lidard, C., Y. Tian, **M. Garcia**, and B. Choudhury, 2007: “Multitemporal analysis and downscaling of TRMM-based satellite rainfall products for land data assimilation applications.” *European Geosciences Union*, General Assembly, 15–20 April 2007, Vienna, Austria. *Geophysical Research Abstracts*, v. 9, paper no. 05846.
- Mocko, D.M., C.D. Peters-Lidard, M.A. Tischler, Y. Wu, **M. Garcia**, and J.A. Santanello, 2006: “The relative roles of soil, land cover, and precipitation uncertainty for watershed-scale soil moisture prediction in a semi-arid environment.” *American Geophysical Union*, Joint Assembly, 23–26 May 2006, Baltimore, Maryland. *Eos Trans. AGU*, v. 87, no. 36, Jt. Assem. Suppl., Abstract H43B-07 (poster).
- Santanello, J.A., C.D. Peters-Lidard, **M. Garcia**, and D. Mocko, 2006: “Using remotely-sensed estimates of soil moisture to infer spatially distributed soil hydraulic properties.” *American Geophysical Union*, Joint Assembly, 23–26 May 2006, Baltimore, Maryland. *Eos Trans. AGU*, v. 87, no. 36, Jt. Assem. Suppl., Abstract H22A-04.
- Tian, Y., C.D. Peters-Lidard, **M. Garcia**, and S.V. Kumar, 2006: “Evaluation of TRMM-based precipitation products in the Southeast U.S. and their impact on hydrological modeling.” *American Geophysical Union*, Joint Assembly, 23–26 May 2006, Baltimore, Maryland. *Eos Trans. AGU*, v. 87, no. 36, Jt. Assem. Suppl., Abstract H23A-03 (poster).
- Garcia, M.**, and C.D. Peters-Lidard, 2005: “The representation of hydrological processes across spatial scales using the NASA-GSFC Land Information System (LIS).” *American Meteorological Society*, Forum on Living with a Limited Water Supply, 85th Annual Meeting of the AMS, 8–14 January 2005, San Diego, California, abstract no. 87615.

## *Education and Professional Experience*

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- October 2022  
to present
- Research Scientist I  
Department of Forest and Wildlife Ecology, University of Wisconsin–Madison,  
Madison, Wisconsin  
Project: Forest Pest Detection and Monitoring through Harmonized Remote Sensing and  
Data Synthesis  
Funding: USDA Forest Service, Northern Research Station  
Role: Principal Scientist and Developer (co-PI)
- January 2018  
to September 2022
- Postdoctoral Research Associate  
Department of Forest and Wildlife Ecology, University of Wisconsin–Madison,  
Madison, Wisconsin  
Project: *Spruce Budworm Atmospheric Transport Modeling to Support the Early  
Intervention Strategy*  
Funding: Natural Resources–Canada, Canadian Forest Service, via Forest Protection  
Limited, on behalf of SERG-International  
Role: Principal Scientist and Model Developer  
Principal Investigator: Prof. Philip A. Townsend
- September 2011  
to January 2018
- Ph.D., Forestry (concentration in Remote Sensing)  
College of Agriculture and Life Sciences, University of Wisconsin–Madison,  
Madison, Wisconsin  
Advisor: Prof. Philip A. Townsend  
Thesis: *Climatology and Forest Phenology during 1984-2013 around Western Lake  
Superior, USA*  
Awards: 2015-16 Wisconsin Space Grant Consortium, Graduate & Professional  
Research, Graduate Fellowship Award
- August 2008  
to August 2010
- Project Manager, Arizona Hydrologic Information System  
Arizona Water Institute and SAHRA  
Assistant Research Professor of Informatics  
Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona
- July 2008
- Expert witness in the field of Hydrology, in testimony for the defendant  
Case no. 01 CV 1290, State of Colorado, 4<sup>th</sup> Judicial District  
Judge Kirk S. Samelson  
Ruled in favor of the defendant on 31 July 2008
- October 2004  
to July 2008
- Research Associate  
University of Maryland–Baltimore County, Catonsville, Maryland  
Goddard Earth Science and Technology Center  
Hydrological Sciences Branch (Code 614.3)  
NASA Goddard Space Flight Center, Greenbelt, Maryland
- May 2004  
to September 2004
- Research Associate  
Caelum Research Corporation, Rockville, Maryland  
NASA Hydrological Sciences Branch (Code 974)  
NASA Goddard Space Flight Center, Greenbelt, Maryland
- January 2002  
to December 2003
- M.S., Civil Engineering (concentration in Hydrology and Water Resources)  
College of Engineering, Colorado State University, Fort Collins, Colorado  
Advisor: Prof. Larry A. Roesner  
Thesis: *Estimation of Ungauged Rainfall from Measured Streamflow  
for the Simulation of a Colorado Front Range Flood Event*
- January 2000  
to December 2001
- Ph.D. Student and Candidate, Atmospheric Science  
College of Engineering, Colorado State University, Fort Collins, Colorado

Advisor: Prof. Wayne H. Schubert

August 1996  
to December 1999  
M.S., Atmospheric Science (concentration in Atmospheric Dynamics)  
College of Engineering, Colorado State University, Fort Collins, Colorado  
Advisor: Prof. Wayne H. Schubert  
Thesis: *Simulated Tropical Convection*

August 1992  
to May 1996  
B.S., Physics and Geosciences (double major)  
College of Science and Mathematics, Montclair State University,  
Upper Montclair, New Jersey  
Awards and Honors: 1996 Outstanding Senior Physics Student

### ***Research Program Participation***

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April 1998  
to June 1998  
Shipboard scientist and instrument technician  
South China Sea Monsoon Experiment (SCSMEX)  
Global Energy and Water Cycle Experiment (GEWEX)  
Asian Monsoon Experiment (GAME)

June 1994  
to August 1994  
National Science Foundation (NSF) Research Experiences for Undergraduates (REU)  
Particulate Systems Engineering Program  
College of Engineering, University of Missouri, Columbia, Missouri

### ***Teaching Assistant Experience***

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August 2003  
to December 2003  
Graduate Teaching Assistant for CE573: Urban Stormwater Management  
Prof. Larry A. Roesner, Dept. of Civil Engineering, Colorado State University

January 2001  
to May 2001  
Graduate Teaching Assistant for AT602: Atmospheric Dynamics II  
Prof. Wayne H. Schubert, Dept. of Atmospheric Science, Colorado State University

August 2000  
to December 2000  
Graduate Teaching Assistant for AT601: Atmospheric Dynamics I  
Prof. Wayne H. Schubert, Dept. of Atmospheric Science, Colorado State University

### ***Other Instructional Experience***

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June and August 2016  
January 2017  
Software Carpentry: beginning Python  
University of Wisconsin–Madison

June 2017  
Software Carpentry: bash (Linux) Shell  
University of Wisconsin–Madison

June 2018  
Software Carpentry: git and GitHub  
University of Wisconsin–Madison

### ***Journals Refereed***

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*Agricultural and Forest Meteorology* (Elsevier, ISSN 0168-1923)  
*Eos, Transactions of the AGU* (American Geophysical Union, ISSN 2324-9250)  
*Forests* (MDPI, ISSN 1999-4907)  
*Geophysical Research Letters* (American Geophysical Union, ISSN 1944-8007)  
*Hydrological Processes* (Wiley, ISSN 0885-6087)  
*International Journal of Climatology* (Wiley/Royal Meteorological Society, ISSN 0899-8418)  
*International Journal of Environmental Research and Public Health* (MDPI, ISSN 1660-4601)  
*Journal of Applied Meteorology and Climatology* (American Meteorological Society, ISSN 1558-8424)  
*Journal of Flood Engineering* (Serials Publications, ISSN 0976-6219)  
*Journal of Geophysical Research–Biogeosciences* (American Geophysical Union, ISSN 2169-8961)



*Journal of Hydroinformatics* (International Water Association, ISSN 1464-7141)  
*Journal of Hydrology* (Elsevier, ISSN 0022-1694)  
*Journal of Hydrometeorology* (American Meteorological Society, ISSN 1525-755X)  
*Land* (MDPI, ISSN 2073-445X)  
*Natural Hazards* (Springer, ISSN 1573-0840)  
*PLOS ONE* (PLOS, ISSN 1932-6203)  
*Regional Environmental Change* (Springer, ISSN 1436-378X)  
*Remote Sensing* (MDPI, ISSN 2072-4292)  
*Scientific Reports* (Nature, ISSN 2045-2322)  
*Theoretical and Applied Climatology* (Springer, ISSN 1434-4483)  
*Water* (MDPI, ISSN 2073-4441)  
*Water Resources Research* (American Geophysical Union, ISSN 1944-7973)

### ***Professional Affiliations***

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Ecological Society of America	January 2019 to present
International Association of Hydrological Sciences	October 2006 to present
Entomological Society of Canada	January 2019 to December 2023
US-International Association for Landscape Ecology	January 2019 to December 2019
American Geophysical Union	April 2004 to December 2016
American Water Resources Association	August 2008 to December 2010
Arizona Hydrological Society	April 2009 to December 2010
American Meteorological Society	September 2008 to December 2009
American Society of Civil Engineers	September 2008 to December 2009