MATTHEW BONNEMA
Curriculum Vitæ

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EDUCATIONAL HISTORY

University of Washington, Seattle, WA
Ph.D. in Civil Engineering
December 2019

University of Washington, Seattle, WA
M.S. in Civil Engineering
December 2016

University of Minnesota Twin Cities, Minneapolis, MN
B.S. in Civil Engineering
Minor in Mathematics
May 2014

EMPLOYMENT HISTORY

NASA Jet Propulsion Laboratory
Pasadena, CA
Postdoctoral Researcher, October 2019-Present

University of Washington
Seattle, WA
Graduate Research Assistant, September 2014-October 2019

University of Minnesota Twin Cities
Minneapolis, MN
Undergraduate Teaching Assistant, September 2013 - May 2014

AWARDS AND HONORS

NASA Earth and Space Science Fellowship (NESSF): September 2017-December 2019
Combining Future SWOT Observations with Current Array of Earth Observing Satellites
to Better Understand Global Reservoir Dynamics

Refereed archival journal publications

1. **Bonnema, M.,** F. Hossain, B. Njissen and G. Holtgrieve (2020), Hydropower's Hidden Transformation of Rivers in the Mekong, Environmental Research Letters (in review).
2. Beveridge, C., **M. Bonnema** and F. Hossain (2019) Impacts of Dam Development and Landscape Changes on Suspended Sediment Concentrations in the Mekong River Basin's 3S Tributaries: a Satellite Remote Sensing Perspective, Remote Sensing of the Environment (in review).
3. Daly, K., F. Hossain, S. Ahmad, **M. Bonnema**, C. Beveridge, B. Nijssen, G. Holtgrieve (2019), Recent Warming of Tonle Sap Lake, Cambodia: Implications for one of the World's Most Productive Inland Fisheries, Lakes and Reservoirs (in review).
4. **Bonnema, M.,** and F. Hossain (2019), Assessing the potential of the Surface Water and Ocean Topography mission for reservoir monitoring in the Mekong River Basin. Water Resour. Res., 55. https://doi.org/10.1029/2018WR023743.
5. Hossain, F., **M. Bonnema**, N. Biswas, S. Ahmad, B. Duong, and N. D. Luong (2019), When floods cross borders, satellite data can help, Eos, 100, https://doi.org/10.1029/2019EO115775.
6. Biswas, N, F. Hossain, **M. Bonnema**, M. Okeowo, H. Lee (2019), An altimeter height extraction technique for dynamically changing rivers of South and South-East Asia, Remote Sensing of Environment, 221, pp. 24-37, https://doi.org/10.1016/j.rse.2018.10.033.
7. **Bonnema, M.** and F. Hossain. (2017). Inferring Reservoir Operating Pattern via Residence Time across the Mekong Basin using only Space Observations. Water Resources Research, 53, 3791–3810, (http://dx.doi.org/10.1002/2016WR019978).
8. **Bonnema, M.,** S. Sikder, Y. Mao, X. Chen and F. Hossain, I.A. Pervin, S.M. M. Rahman and H. Lee. (2016). Understanding Satellite-based Monthly-to-Seasonal Reservoir Outflow Estimation as a function of Hydrologic Controls, Water Resources Res. vol. 52(5), pp. 4095-4115 (https://doi.org/10.1002/2015WR017830).
9. Hossain, F., S. Sikder, N. Biswas, **M. Bonnema**, H. Lee, N.D Luong, N.H. Hiep, B. D. Duong and D. Long (2016) How well can Water Availability of the Mekong River Basin be represented by Physical Models and Satellite Observations? Asian Journal of Water and Environmental Pollution, 14(3), pp. 39-48, http://doi.org/10.3233/AJW-170024
10. **Bonnema, M**., S. Sikder, F. Hossain, D. Bjerklie, M. Durand and C. Gleason (2016). Benchmarking wide swath altimetry-based river discharge estimation algorithms for the Ganges river system Water Resources Res. Vol. 52(4), pp. 2439–2461 (https://doi.org/10.1002/2015WR017296).

Conference proceedings and other non-journal articles
1. **American Geophysical Union 2015 Fall Meeting**, San Francisco CA Poster Presentation: Understanding Satellite-based Monthly-to-Seasonal Reservoir Outflow Estimation as a Function of Hydrologic Controls, Bonnema, M., S. Sikder, Y. Mao, X. Chen and F. Hossain, I.A. Pervin, S.M. M. Rahman and H. Lee
2. **American Geophysical Union 2016 Fall Meeting**, San Francisco CA Poster Presentation: Evaluating the Benefits Provided by SWOT Data towards Estimating Reservoir Residence Time in the Mekong River Basin, Bonnema, M., F. Hossain
3. **American Geophysical Union 2017 Fall Meeting**, New Orleans LA Poster Presentation: Application of the SWOT Mission to Reservoirs in the Mekong River Basin, Bonnema, M., F. Hossain
4. **American Geophysical Union 2018 Fall Meeting**, Washington D.C. Oral Presentation: Assessing the Potential of the Surface Water and Ocean Topography Mission for Reservoir Monitoring in the Mekong River Basin, Bonnema, M., F. Hossain
5. **American Geophysical Union 2019 Fall Meeting**, San Francisco, Poster Presentation: Monitoring Impacts of Hydropower Dam Development on River Temperature in the Mekong River Basin's 3S River Basin using Satellite Remote Sensing, Bonnema, M., F. Hossain, B. Nijssen, G., Holtgrieve
6. **SWOT Science Team Meeting** June 2016, Pasadena CA Poster Presentation: SWOT ST Perpetrations for Ground Truthing, Discharge Product Development, and Water Management Applications in Asian Nations, Hossain, F., M. Bonnema
7. **SWOT Science Team Meeting** June 2017, Toulouse, France Poster Presentation: SWOT ST Perpetrations for Ground Truthing, Discharge Product Development, and Water Management Applications in Asian Nations, Hossain, F., M. Bonnema
8. **American Meteorological Society 97th Annual Meeting** January 2017, Seattle WA Oral Presentation: Estimating Reservoir Residence Time Across the Mekong River Basin: Incorporating Future SWOT Mission Observations with Current Remote Sensing Data, Bonnema, M., F. Hossain

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OTHER SCHOLARLY ACTIVITY

Professional society memberships.
American Meteorological Society 2016-Present
American Geophysical Union 2015-Present

Reviews for Academic Journals
Journal of Hydrometeorology, 2018-Present
Journal of Geophysical Research, 2018-Present

College Courses
University of Washington
>Satellite Remote Sensing for Water Resources, Fall 2018
>Co-Instructor with Professor Faisal Hossain
>Taught introduction to Google Earth Engine geospatial computing platform

University of Washington
>Water Management, Spring 2017, Spring 2018
>Guest Lecturer
>Applications of Remote Sensing for Reservoir Management

University of Washington
>Satellite Remote Sensing for Water Resources, Fall 2016, Fall 2017
>Guest Lecturer
>Reservoir Remote Sensing Hands on Demonstration

Workshops
SWOT Application User Workshop
>Boston, MA, May 2018
>Hands on Demonstration of Satellite-based Reservoir and Water Management:
>Understanding the Potential of SWOT in the Mekong River Basin

Waterhack Week
>University of Washington, E-Science Institute
>Seattle, WA, March 2019
>Introduction to Google Earth Engine

SWOT Application User Workshop
>Paris, France, May 2019
>Hands on Introduction to Google Earth Engine

Outreach
Engineering Discovery Days
>University of Washington, 2015-2018
>Co-organizer of SASWE Research Group booth
>Interactive hydrologic remote sensing demo for visiting K-12 students