Konstantinos **Andreadis**

Associate Professor

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My research has primarily focused on the intersection between applied hydrologic modeling and remote sensing and in-situ observations, data assimilation, as well as the study of large-scale hydrology as it relates to climate change and environmental monitoring.

Education

2009 **Ph.D., Civil and Environmental Engineering, University of Washington**, Seattle, WA, USA (A remote sensing data assimilation system for cold land pro- cesses hydrologic estimation)

2004 **M.S.E., Civil and Environmental Engineering, University of Washington**, Seattle, WA, USA (Assimilating remotely sensed snow observations into a macroscale hydrology model)

2002 **Engineering Diploma, Environmental Engineering, Technical University of Crete**, Chania, Greece (Statistical methods and software development for oil spill source identication)

Research and Teaching Experience

Sep 2024 – Present

Associate Professor, Civil and Environmental Engineering, University of Massachusetts, Amherst, MA

- Hydrologic modeling with remotely sensed observations
- Scientific machine learning for hydrology
- Deep learning for super-resolution of earth observations
- Development of GNSS-R technologies for natural disasters
- Stochastic modeling of hydrologic extremes
- Teaching Probability and Statistics, Fluid Mechanics, Computational Methods in Civil Engineering

Sep 2018 – Aug 2024

Assistant Professor, Civil and Environmental Engineering, University of Massachusetts, Amherst, MA

- Development of algorithms for the SWOT satellite mission
- Scientific machine learning for hydrology
- Deep learning for land cover classification
- Assessment of the value of GNSS-R satellite observations for mapping wetland dynamics
- Impact of urbanization on flood risks globally
- Teaching Probability and Statistics, Fluid Mechanics, Computational Methods in Civil Engineering

Jun 2011 – Aug 2018

Research Scientist, Jet Propulsion Laboratory, Pasadena, CA

Leading and working on multiple projects with an overall focus on the merging of observations and water resources models. In addition to mentoring post-doctoral researchers at JPL, I am responsible for securing funding (either as a PI or Co-I).

- Data assimilation of remotely sensed observations into hydrologic, hydrodynamic and agricultural models
- Development of data product algorithms for the SWOT satellite mission
- Development of seasonal drought forecasting system in East Africa and Southeast Asia
- Streamflow forecasting in support of reservoir operations using airborne snow observations
- Impact of deforestation on drought severity
- Assessing the role of climate teleconnections in flooding over Australia
- Development of a coupled human and natural water resources model
- Mentored undergraduate students through the JPL Internship Program

Sep 2009 – Jun 2011 | **Post-doctoral Researcher, Byrd Polar Research Center, Ohio State University, Columbus, OH**
Worked on a number of different projects, revolving around the SWOT proposed satellite mission science team, including:
- Data assimilation of remotely sensed river measurements over the Ohio River basin
- Large-scale hydraulic modeling of the Ohio River basin
- Congo River basin hydrological processes from gravimetric remote sensing

Mar 2011 – Jan 2011 | **Adjunct Professor, Ohio State University, Columbus, OH**
- Taught the "Water Resources Engineering" undergraduate class (CIVILEN562) at the Department of Civil and Environmental Engineering and Geodetic Science

Aug 2002 – Sep 2009 | **Research Assistant, University of Washington, Seattle, WA**
Worked on a number of different projects along with the pursuit of the M.S.E. and Ph.D.:
- MODIS and AMSR-E snow data assimilation
- Coupled microwave emission-snow hydrology model development
- Surface water swath altimetry virtual mission
- JCSDA radiative transfer model inter-comparison
- Twentieth century US and global drought
- Real-time drought monitoring
- Short and long-term hydrologic predictability
- Streamflow sensitivity to climatic change over the Colorado River basin

Apr 2007 – Apr 2009 | **Guest Lecturer, University of Washington, Seattle, WA**
- Taught classes on Remote sensing of snow (CEE599 Snow Hydrology, Prof. Jessica Lundquist), and Applied optimal estimation (CEE599 Hydrologic Data Analysis, Prof. Dennis Lettenmaier)

Sep 2006 – Nov 2006 | **Visiting Scientist, NASA Goddard Space Flight Center, Greenbelt, MD**
- Examined the sensitivity of passive microwave emission model predictions to snow microphysical parameters in coupled modeling experiments

Awards

- NASA Early Career Achievement Medal (2015)
- NASA Group Achievement Award (2014, 2017)
- AGU Fall Meeting Outstanding Student Paper Award (2008)
- Andy Studebaker Fellowship, Center for Water and Watershed Studies, University of Washington (2006)

Publications

1. R. Pradhan, **K. Andreadis**, T. Langhorst, 2025: Assimilating SWOT Level-4 river discharge into a macroscale hydrologic model, Remote Sens. Environ., in review
2. X. He, **K. Andreadis**, T. Langhorst, 2025: Mind the Cloud: Propagation of Cloud-Induced Bias in Lake Surface Water Temperature Remote Sensing and Modeling, Water Resour. Res., in review
3. N. Maddahi, S. Papalexiou, M. Zaerpour, **K. Andreadis**,2025: Toward Cleaner Extremes: A GEV-Based Framework for Identifying and Removing Implausible Annual Maxima in Climate Projections. J. Hydrometeorology, in review
4. D. Feng, X. Yang, T. Pavelsky, G. Allen, P. Bates, C. Gleason, J. Gardner, B. Lehner, J. Wang, S. Cooley, A. Tarpanelli, T. Battin, D. Yamazaki, M. Durand, P. Raymond, P. Lin, **K. Andreadis**, 2025: Remote sensing and the new global river science, Nature Water, in review
5. T. Langhorst, **K. Andreadis**, X. He, E. Friedmann, J. Gardner, T. Pavelsky, 2025: Estimating Daily Suspended Sediment Flux from Multiple Data Sources using Deep Learning, J. Geophys. Res., in review
6. P. Filippucci, **K. Andreadis**, C. David, A. Tarpanelli, 2025: A Tool for Surface Reflectance Retrieval from Google Earth Engine for the estimation of river flow variation, Water Resour. Res., in review
7. A. Cerbelaud, C. David,..., **K. Andreadis**, 2025: Progress towards satellite requirements to capture water propagation in Earth's rivers, Rev. Geophys., accepted
8. A. DelSanto, M. Bhuiyan, R. Palmer, **K. Andreadis**, 2025: Machine Learning based 100-year flood flow prediction

model using basin characteristics and multiple meteorological datasets in the northeast United States, Artif. I. Earth Systems, accepted

9. **K. Andreadis**, S. Coss, M. Durand, C. Gleason, T. Simmons, N. Tebaldi, et al., 2025: A first look at river discharge from SWOT satellite observations, Geophys. Res. Lett., doi:10.1029/2024GL114185
10. K. Kim, **K. Andreadis**, F. O'Loughlin, 2025: Predicting annual peak daily streamflow in natural basins using quantile regression forests, J. Hydrol., doi:10.1016/j.jhydrol.2025.133233
11. X. He, **K. Andreadis**, A. Roy, T. Langhorst, A. Kumar, C. Butler, 2025: Modeling daily ice cover in Northern Hemisphere lakes with a Long Short-Term Memory neural network, Geophys. Res. Lett., doi:10.1029/2024GL113544
12. S. Papalexiou, G. Mascaro, A. Pendergrass, A. Mamalakis, M. de Brito, **K. Andreadis**, K. Schiro, M. Zaerpour, S. Hatami, Y/ Gavasso-Rita, A. Ballarin, M. Godoy, S. Nerantzaki, H. Abdelmoaty, M. Martin, K. Madani, 2025: Sustainability Nexus AID - Storms, In Sustainability Nexus Forum, vol. 33, no. 1, p. 1. Berlin/Heidelberg: Springer Berlin Heidelberg
13. T. Langhorst, **K. Andreadis**, G. Allen, 2024: Global Cloud Biases in Optical Satellite Remote of Rivers, Geophys. Res. Lett., doi:10.1029/2024GL110085
14. A. Nanda, N. Das, G. Singh, R. Bindlish, **K. Andreadis**, S. Jayasinghe, 2024: Harnessing SMAP Satellite Soil Moisture Product to Optimize Soil Properties to Improve Water Resource Management for Agriculture, Agric. Water Manag., in review
15. **K. Andreadis**, D. Meason, P. Lad, B. Höck, N. Das, 2024: Hydrologic Consistency of Multi-Sensor Drought Observations in Forested Environments, Remote Sens., Remote Sensing, doi:10.3390/rs16050852
16. A. Kumar, A. Roy, **K. Andreadis**, X. He, C. Butler, 2024: A multi-sensor approach to characterize winter water level drawdown patterns in lakes, Remote Sens., doi:10.3390/rs16060947
17. P. Das, F. Hossain, S. Minocha, G. Darkwah, H. Lee, **K. Andreadis**, M. Laverde, P. Oddo, 2024: ResORR: A Globally Scalable and Satellite Data-driven Algorithm for River Flow Regulation due to Reservoir Operations, Environ. Model. Softw., doi:10.1016/j.envsoft.2024.106026
18. S. Suresh, F. Hossain, S. Minocha, P. Das, S. Khan, H. Lee, **K. Andreadis**, P. Oddo, 2024: Satellite-based tracking of reservoir operations for flood management during the 2018 extreme weather event in Kerala, India, Remote Sens. Environ., doi:10.1016/j.rse.2024.114149
19. A. DelSanto, R. Palmer, **K. Andreadis**, 2024: Fuzzy C-Means clustering for physical model calibration and 7-day, 10-year low flow estimation in ungaged basins: comparisons to traditional, statistical estimates, Front. Water, doi:10.3389/frwa.2024.1332888
20. L. Ellenburg, S. Miller, V. Mishra, L. Ndungu, E. Adams, N. Das, **K. Andreadis**, A. Limaye, 2024: Evaluation of a regional crop model implementation for sub-national yield assessments in Kenya, Agric. Syst., doi:10.1016/j.agsy.2023.103819
21. A. Abhishek, M. Phanikumar, A. Sendrowski, **K. Andreadis**, M. Hashemi, S. Jayasinghe, V. Prasad, R. Brent, N. Das, 2023: Dryspells and minimum air temperatures influence rice yields and their forecast uncertainties in rainfed systems, Agric. For. Meteorol., doi:10.1016/j.agrformet.2023.109683
22. A. DelSanto, E. Bhuiyan, R. Palmer, **K. Andreadis**, 2023: Low-Flow (7-Day, 10-Year) Classical Statistical and Improved Machine Learning Estimation Methodologies, Water, doi:10.3390/w15152813
23. S. Minocha, F. Hossain, P. Das, S. Suresh, S. Khan, G. Darkwan, H. Lee, S. Galelli, **K. Andreadis**, P. Oddo, 2023: Reservoir assessment tool version 3.0: A scalable and user-friendly software platform to mobilize the global water management community, Geosci. Model Dev., in review
24. X. He, **K. Andreadis**, A. Roy, A. Kumar, C. Butler, 2023: Developing a stochastic hydrological model for informing lake water level drawdown management, J. Environ. Manage., doi:10.1016/j.jenvman.2023.118744
25. A. DelSanto, E. Bhuiyan, **K. Andreadis**, R. Palmer, 2023: Low-flow (7-day, 10-year) classical statistical and improved machine learning estimation methodologies, Water, doi:10.3390/wr15152813
26. **K. Andreadis**, O. Wing, E. Colven, C. Gleason, P. Bates, C. Brown, 2022: Urbanizing the floodplain: Global changes of imperviousness in flood-prone areas, Environ. Res. Lett., doi:10.1088/1748-9326/ac9197

27. M. Hashemi, A. Abhishek, E. Jalilvand, S. Jayasinghe, **K. Andreadis**, P. Siqueira, N. Das, 2022: Assessing the impact of Sentinel-1 derived planting dates on rice crop yield modeling, Int. J. Appl. Earth Obs. Geoinf., doi:10.1016/j.jag.2022.103047

28. **K. Andreadis**, D. Meason, B. Hock, P. Lad, N. Das, 2022: Evaluation of Multi-scale SMAP Soil Moisture Products in Forested Environments, IEEE Geosci. Remote Sens. Lett., doi:10.1109/LGRS.2022.3184177

29. R. Pradhan, Y. Markonis, A. Villalba-Pradas, M. Rodrigo, V. Godoy, A. Rahim, **K. Andreadis**, E. Nikolopoulos, S. Papalexiou, F. Tapiador, M. Hanel, 2022: Review of GPM IMERG performance: A global perspective, Remote Sens. Environ., doi:10.1016/j.rse.2021.112754

30. G. Schumann, D. Moller, L. Croneborg-Jones, **K. Andreadis**, 2022: Reviewing applications of remote sensing techniques to hydrologic research in Sub-Saharan Africa, with a special focus on the Congo basin. Congo Basin Hydrology, Climate, and Biogeochemistry: A Foundation for the Future, AGU Monograph, doi:10.1002/9781119657002.ch16

31. S. Papalexiou, C. Rajupalati, **K. Andreadis**, E. Foufoula-Georgiou, M. Clark, K. Trenberth, 2021: Probabilistic Evaluation of Drought in CMIP6 Simulations, Earths Future, doi:10.1029/2021EF002150

32. A. Abhishek, N. Das, A. Ines, **K. Andreadis**, S. Jayasinghe, S. Granger, W. Ellenburg, R. Dutta, N. Quyen, A. Markert, V. Mishra, M. Phanikumar, 2021: Evaluating the impacts of drought on rice productivity over Cambodia in the Lower Mekong Basin, J. Hydrol., doi:10.1016/j.jhydrol.2021.126291

33. J. Kravits, J. Kasprzyk, K. Baker, **K. Andreadis**, 2021: Screening Tool for Dam Hazard Potential Classification Using Machine Learning and Multi-Objective Hyperparameter Tuning, J. Water Resour. Plan. Manag., doi:10.1061/(ASCE)WR.1943-5452.0001414

34. Y. Ishitsuka, C. Gleason, M. Hagemann, E. Beighley, G. Allen, D. Feng, P. Lin, M. Pan, **K. Andreadis**, T. Pavelsky, 2021: Combining optical remote sensing, McFLI discharge estimation, global hydrologic modeling, and data assimilation to improve daily discharge estimates across an entire large watershed, Water Resour. Res., doi:10.1029/2020WR027794

35. R. Frasson, M. Durand, K. Larnier, C. Gleason, **K. Andreadis**, M. Hagemann, R. Dudley, D. Bjerklie, H. Oubanas, P. Garambois, P. Malaterre, P. Lin, T. Pavelsky, J. Monnier, C. Brinkerhoff, C. David, 2021: Exploring the factors controlling the performance of the Surface Water and Ocean Topography mission discharge algorithms, Water Resour, Res., doi:10.1029/2020WR028519

36. **K. Andreadis**, C. Brinkerhoff, C. Gleason, 2020: Constraining the assimilation of SWOT observations with hydraulic geometry relations, Water Resour. Res., doi:10.1029/2019WR026611

37. D. Li, **K. Andreadis**, S. Margulis, D. Lettenmaier, 2020: A data assimilation framework for generating space-time continuous SWOT river discharge data products, Water Resour. Res., doi:10.1029/2019WR026999

38. C. Emery, C. David, **K. Andreadis**, M. Turmon, J. Reager, J. Hobbs, M. Pan, J. Famiglietti, E. Beighley, M. Rodell, 2020: Underlying fundamentals of Kalman filtering of river network modeling, J. Hydromet., doi:10.1175/JHM-D-19-0084.1

39. D. Li, D. Lettenmaier, S. Margulis, **K. Andreadis**, 2019: The value of accurate high-resolution and spatially continuous snow information to streamflow forecasts, J. Hydromet., doi:10.1175/JHM-D-18-0210.1

40. D. Li, D. Lettenmaier, S. Margulis, **K. Andreadis**, 2019: The role of rain-on-snow in flooding over the conterminous United States, Water Resour. Res., doi:10.1029/2019WR024950

41. H. Tran, P. Nguyen, M. Ombadi, K. Hsu, S. Sorooshian, **K. Andreadis**, 2019: Improving hydrologic modeling using cloud-free MODIS flood maps, J. Hydromet., doi:10.1175/JHM-D-19-0021.1

42. D. Stampoulis, J. Reager, C. David, **K. Andreadis**, J. Famiglietti, T. Farr, A. Trangsrud, R. Basillio, P. Lundgren, Z. Liu, 2019: Assimilation of GRACE terrestrial water storage observations to estimate changes in water table depth, Adv. Water Resour., doi:10.1016/j.advwatres.2019.04.004

43. S. Margulis, Y. Fang, D. Li, **K. Andreadis**, 2019: The utility of infrequent snow depth images for deriving continuous space-time estimates of seasonal snow water equivalent, Geophys. Res. Lett., doi:10.1029/2019GL082507

44. G. Schumann, J. Muhlhausen, **K. Andreadis**, 2019: Rapid Mapping of Small-Scale River-Floodplain Environments Using a UAV Structure from Motion Point Cloud, Remote Sens., doi.org/10.3390/rs11080982

45. C. Oaida, J. Reager, **K. Andreadis**, C. David, S. Levoe, T. Painter, K. Bormann, A. Trangsrud, M. Girotto, J. Famiglietti, 2019: A high-resolution data assimilation framework for snow water equivalent estimation across the Western United States and validation with the Airborne Snow Observatory, J. Hydrometeorology, doi:0.1175/JHM-D-18-0009.1

46. **K. Andreadis**, 2018: Data assimilation and river hydrodynamic modeling over large scales. In: Schumann, G., Bates, P., Aronica, G., and Apel, H. (eds). Global Flood Hazard: applications in modeling, mapping and forecasting. American Geophysical Union

47. **K. Andreadis**, G. Schumann, D. Stampoulis, P. Bates, G.R. Brakenridge, and A. Kettner, 2017: Can atmospheric reanalysis datasets be used to reproduce flooding over large scales?, *Geophys. Res. Lett.*, doi:10.1002/2017GL075502

48. G. Allen, C. David, **K. Andreadis**, F. Hossain, J. Famiglietti, 2017: Global estimates of river flow wave travel times and implications for low-latency satellite data, *Geophys. Res. Lett.*, doi:10.1029/2018GL077914

49. **K. Andreadis**, N. Das, D. Stampoulis, A. Ines, J. Fisher, S. Granger, J. Kawata, E. Han, and A. Behrangi, 2017: The Regional Hydrologic Extremes Assessment System: A GIS-enabled software framework for hydrologic modeling and data assimilation, *PLoS ONE*, 12(5): e0176506, doi:10.1371/journal.pone.0176506

50. **K. Andreadis**, 2017: Data assimilation and river hydrodynamic modeling over large scales. In: Schumann, G., Bates, P., Aronica, G., and Apel, H. (eds). Global Flood Hazard: applications in modeling, mapping and forecasting. American Geophysical Union, in press

51. D. Moller, **K. Andreadis**, K. Bormann, S. Hensley, and T. Painter, 2017: Mapping snow depth from Ka-band interferometry: Proof of concept and comparison with scanning lidar retrievals, *IEEE Geosci. Remote Sens. Lett.*, 14, 886-890

52. G. Schumann, D. Stampoulis, A. Smith, C. Sampson, **K. Andreadis**, J. Neal, and P. Bates, 2016: Rethinking flood risk at the global scale, *Geophys. Res. Lett.*, 43, 10.1002/2016GL070260

53. G. Schumann, and **K. Andreadis**, 2016: A method to assess localized impact of better floodplain topography on flood risk prediction, *Adv. Meteorol.*, 2016, 1–8

54. D. Stampoulis, **K. Andreadis**, S. Granger, J. Fisher, F. Turk, A. Behrangi, N. Das, and A. Ines, 2016: Assessing the hydrologic vulnerability and adaptive capacity at regional scales from space, *Remote Sens. Environ.*, 184, 58–72

55. Y. Chao, J. Farrara, G. Schumann, **K. Andreadis**, and D. Moller, 2015: Sea surface salinity variability in response to the Congo River discharge, *Continental Shelf Res.*, 99, 34–45

56. **Andreadis, K.**, and G. Schumann, 2014: Estimating the impact of satellite observations on the predictability of large-scale hydraulic models, *Adv. Water Resour.*, 73, 44–54

57. Schumann, G., P. Bates, J. Neal, **K. Andreadis**, 2014: Measuring and mapping flood processes. In Paolo Paron, Giuliano Di Baldassarre and J. F. Shroder Jr. (eds). Hydro-meteorological hazards, risks and disasters. Elsevier: Hazards and Disasters Series, p. 306, pp. 35-64

58. Fisher, J.B. and **Andreadis, K.**, 2014: Drought - Roles of Precipitation, Evapotranspiration, and Soil Moisture. In: Wang, Y. (Ed) Encyclopedia of Natural Resources: Air. Taylor and Francis, New York, pp 1015-1017

59. Schumann, G., Bates, P.D., Neal, J.C. and **Andreadis, K.**, 2014. Measuring and Mapping Flood Processes. Hydro-Meteorological Hazards, Risks, and Disasters, p.35

60. Pavelsky, T., M. Durand, **K. Andreadis**, E. Beighley, R. Paiva, G. Allen, and Z. Miller, 2014: Assessing the global impact of SWOT river observations, *J. Hydrology*, 27, 1516–1525

61. Schumann, G., P. Bates, J. Neal, and **K. Andreadis**, 2014: Technology: Fight floods on a global scale, *Nature*, 507(7491), 169-169

62. Durand, M., J. Neal, E. Rodriguez, **K. Andreadis**, L. Smith, and Y. Yoon, 2014: Estimating reach-averaged discharge for the River Severn from measurements of river water surface elevation and slope, *J. Hydrology*, 511, 92-104

63. Schumann, G., **K. Andreadis**, and P. Bates, 2014: Downscaling coarse grid hydrodynamic simulation over large domains, *J. Hydrology*, 508, 289-298

64. Biancamaria, S., **K. Andreadis**, and S. Ricci, 2014: Using images of continental water surface elevations from upcoming satellite mission, *Eos. Trans. AGU*, 95.12, 105-105

65. **Andreadis, K.**, G. Schumann, and T. Pavelsky, 2013: A simple global river width and depth database, *Water Resour. Res.*, 49, 7164-7168

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67. Livneh, B., E. Rosenberg, C. Lin, V. Mishra, **K. Andreadis**, E. Maurer, and D. Lettenmaier, 2013: Long-term hydrologically based dataset of land surface fluxes and states for the conterminous U.S.: Update and extensions, *J. Climate*, doi:10.1175/JCLI-D-12-00508.1

68. Mersel, M.K., L. Smith, **K. Andreadis**, M. Durand, 2013: Estimation of river depth from remotely sensed hydraulic relationships, *Water Resour. Res.*, 49, 3165-3179

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70. **Andreadis, K.**, D. P. Lettenmaier, 2012: Implications of representing snowpack stratigraphy for the assimilation of passive microwave satellite observations, *J. Hydrometeorology*, 13, 1493-1506

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73. Biancamaria, S., M. Durand, **K. Andreadis**, P.D. Bates, A. Boone, N.M. Mognard, E. Rodriguez, D.E. Alsdorf, D. Lettenmaier, and E. Clark, 2011: Assimilation of virtual wide swath altimetry to improve Arctic river modeling, *Remote Sens. Environ.*, 115, 373-381

74. Xu, X., D. Liang, **K. Andreadis**, L. Tsang, E. G. Josberger, and D. P. Lettenmaier, 2010: Active remote sensing of snow using NMM3D/DMRT and comparison with CLPX II airborne data, *IEEE J. Sel. Topics Earth Obs. and Remote Sens.*, 3, 689-697

75. Biancamaria, S., **K. Andreadis**, M. Durand, E. Clark, E. Rodriguez, N. Mognard, D. Alsdorf, D. Lettenmaier, and Y. Oudin, 2010: Preliminary characterization of SWOT hydrology error budget and global capabilities, *IEEE J. Sel. Topics Earth Obs. and Remote Sens.*, 3, 6-19

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77. Sheffield, J., **K. Andreadis**, E. F. Wood, and D. P. Lettenmaier, 2009: Global and continental drought in the second half of the 20th century: severity-area-duration analysis and temporal variability of large-scale events, *J. Climate*, 22, 1962-1981

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Grants

1. NASA SWOT Science Team (Co-I), 2025-2029: "SWOT and the global dynamics of water supply, demand, and scarcity" ($1,084,216)
2. USGS Future of Aquatic Flows (PI), 2022-2024: "A data-driven framework to inform projections of aquatic flows in the Northeast" ($284,611)
3. NASA Water Resources Applications (Co-I), 2022-2024: "Improved Reservoir Management with Simultaneous Monitoring of Water Quantity and Quality using Multiple Satellites, SWOT and RAT-WQ2" ($1,024,235)
4. NASA SWOT Science Team (Co-I), 2021-2024: "Development of spatiotemporally continuous runoff using SWOT discharge data products" ($727,687)
5. USGS Northeast Climate Adaptation Science Center (Co-I), 2020-2023: "A Decision Support System for Estimating Changes Due to Climate Change in Extreme Hydrologic Events in the Northeast" ($229,422)
6. USGS Northeast Climate Adaptation Science Center (Co-I), 2020-2023: "Rethinking lake management for invasive-plants under future climate: Sensitivity of lake ecosystems to winter water level drawdowns" ($400,690)
7. NASA SERVIR (Co-I), 2019-2022: "Enhancement of the RHEAS Capabilities for Monitoring and Forecasting of Seasonal Rice Crop Productivity for the Lower Mekong Basin Countries" ($686,634)
8. NASA High-Mountain Asia Program (Co-I), 2020-2023: "Characterizing future changes in glacier melt, snow melt, and regional runoff to inform adaptation decisions in high mountain dependent economies" ($1,080,187)
9. NASA Terrestrial Hydrology Program (PI), 2014-2017: "A multi-sensor hydrologic modeling framework to understand the coupled human and natural feedbacks in the Zambezi basin" ($449,160)
10. NASA SWOT Science Team (PI), 2016-2020: "Developing a global assimilation and modeling framework to produce SWOT data products" ($651,010)
11. NASA SERVIR (PI), 2016-2019: "Monitoring and Forecasting Drought and Crop Yield for the Lower Mekong Basin" ($596,630)
12. NASA INCA (Co-I), 2016-2019: "Managing Vegetation Water Stress Under a Changing Climate" ($812,130)
13. NASA SWOT Science Team (Co-I), 2016-2020: "Integration of SWOT Measurements into global terrestrial hydrologic models" ($621,230)
14. NASA Advanced Information Systems Technology (Co-I), 2015-2017: "Global Flood Risk From Advanced Modeling and Remote Sensing in Collaboration With Google Earth Engine" ($700,936)
15. NASA SERVIR (Co-I), 2012-2016: "East Africa Drought and Agricultural Productivity Assessment and Prediction System" ($985,880)
16. NASA GRACE Science Team (Co-I), 2011-2016: "Enhancement of GRACE Temporal Gravity Field Solutions to Study Terrestrial Water Dynamics in the Congo Basin" ($663,353)
17. NASA SWOT Science Definition Team (Co-I), 2013-2015: "A hydrologically informed terrestrial water classification algorithm for SWOT" ($220,017)

18. NASA SWOT Science Definition Team (Co-I), 2013-2015: “Modeling Channel and Floodplain Hydrodynamics in Support of the SWOT Mission” ($230,269)
19. US Bureau of Reclamation (Co-PI), 2013-2014: “Hydrologic modeling and forecasting in support of the Airborne Snow Observatory” ($100,946)
20. NASA Terrestrial Hydrology Program (Co-I), 2012-2015: “Evaluating SWOT observations of river discharge and their implications for large-scale hydrologic estimation and prediction” ($612,149)
21. NASA Physical Oceanography (Co-I), 2011-2013: “Assessing and Retiring Risk in SWOT Discharge Products:Two Methods for Characterizing Rriver Depth” ($402,951)

Professional Activities

- NSF ADVANCE Fellow (2021-2022)
- Editor (2019-Present) and Associate Editor (2014-2019), Journal of Hydrometeorology
- Member of the American Meteorological Society Committee on Hydrology (2017-Present)
- Reviewer for Water Resources Research, Journal of Hydrometeorology, Journal of Geo- physical Research, Advances in Water Resources, Hydrological Processes, Theoretical Applied Climatology, IEEE Transactions of Geosciences and Remote Sensing, Vadose Zone, Journal of Hydrology, Hydrology and Earth System Sciences
- Reviewer for proposals submitted to NOAA, NSF, NWS, ANR France, Hong Kong RGC, FNR Luxembourg
- Organized “Water Cycle Science” workshop (June 2012, Pasadena, CA)
- Lectured at the NASA Summer School on Satellite Observations and Climate Models (August 2015-2017, Pasadena, CA)
- Organized training workshops at the Regional Center for Mapping of Resources for Development (Nairobi, Kenya), Asian Disaster Preparedness Center (Bangkok, Thailand), Mekong River Commission (Phnom Penh, Cambodia), and Vietnam Academy of Water Resources (Hanoi, Vietnam)

Technical Skills

Programming Languages:	C/C++, Python, Fortran, CUDA C, SQL, Scala, Shell, Julia, Javascript
Technical Software:	R, Matlab, GRASS GIS, ENVI/IDL, ArcGIS
Publishing:	LaTeX, OpenOffice, Microsoft Office
Operating Systems:	Linux, Mac OS, Windows

Languages

English ●●●●●

Greek ●●●●●