

## Ben Zaitchik

---

Department of Earth and Planetary Sciences  
 Johns Hopkins University  
 Baltimore, MD 21218  
 410-516-4223  
 zaitchik@jhu.edu

---

### Current Employment

Professor	2021-
Associate Professor	2017-2020
Assistant Professor	2008-2016
Dep't of Earth and Planetary Sciences, Johns Hopkins University	

### Previous Employment

AAAS Diplomacy Fellow Office of Global Change, U.S. Department of State Description: Foreign Affairs Officer for climate change issues	2008-2010
--	-----------

Research Associate NASA GSFC Hydrological Sciences Branch / University of Maryland Supervisor: Matt Rodell	2006-2008
--	-----------

### Education

PhD: Regional drivers of aridity in the Middle East and beyond Yale University, Department of Geology and Geophysics <i>Elias Loomis Prize</i> for excellence in studies in the physics of the Earth Primary advisor: Ron Smith	2006
--	------

MS: Managing landslide risk in Central Honduras Cornell University, Department of Crop and Soil Sciences <i>NSF Graduate Student Fellowship</i> Primary advisor: Harold van Es	2001
---	------

AB: Department of Biology, Harvard University Undergraduate thesis: Phylogenic and ontogenetic studies of tribe <i>Andropogoneae</i> (Poaceae). <i>Summa cum laude</i> , <i>Hoopes Prize</i> for excellence in undergraduate research Primary advisor: Elizabeth Kellogg	1998
---	------

### Courses Taught

*Climate Science and Policy*: Interdisciplinary course on theory, history, and current directions in climate policy

*Present and Future Climate*: Upper level undergraduate / introductory graduate level course on climate dynamics and current research challenges.

*The Water, Energy, Food Nexus*: Graduate level course on interdisciplinary science and policy issues, taught at the JHU School for Advanced International Studies (SAIS).

*Atmospheric science*: Upper level undergraduate / introductory graduate course on atmospheric processes.

*Introduction to Global Environmental Change*: Introductory survey of Earth systems and dynamics of change in the modern era.

*Remote Sensing of Environment*: Advanced undergraduate / graduate student course in the physical foundations and practical applications of satellite remote sensing of Earth.

*Climate and Health*: Advanced undergraduate course on connections between climate change and health, focusing on understanding process and identifying policy solutions.

*Modeling the Hydrological Cycle*: Graduate level course on the use of physically-based computational tools and statistical analysis to study the movement of water from watershed to continental scales.

*Regional Climate Analysis*: Graduate research seminar

*Topics in African Climate*: Graduate research seminar

*Capstone Research in Water, Climate and Health*: Field course held on the Chesapeake Bay and in the Blue Nile Highlands (Ethiopia)

*Advanced Remote Sensing*: Graduate research seminar

## **Competitively Funded Research**

PI: *The Baltimore Social-Environmental Collaborative Integrated Field Lab*. DOE. 2022-2027

PI: *Subseasonal-to-Seasonal Forecast of Hydro-Ecological Extremes in the Amazon Basin*. NASA. 2023-2025

PI: *Vegetation as a Mediator of Flash Drought Development and Predictability on S2S Time Scales*. NASA. 2022-2025

PI: *Seeing Heat Risk Through an Equity Lens: Putting High Resolution Temperature Data to Work for Urban Environmental Justice*. NOAA. 2021-2023

PI: *GMELT Ahead: leveraging Earth Observations for improved climate projections in High Mountain Asia*. NASA. 2020-2023

PI: *PREEVENTS/T2: Multi-scale prediction of flash drought in the United States*. NSF. 2019-2023

PI: *Achieving Actionable Dengue Early Warning Systems*. JHU Discovery Award. 2022-2024

PI: *The Africa Cholera Early Warning System (ACREWS)*. NASA Applied Sciences Program. 2018-2021

PI: *INFEWS/T1: Understanding multi-scale resilience options for climate-vulnerable Africa*. NSF. 2016-2020

PI: *Environmental Determinants of Enteric Infectious Disease: a GEO platform for analysis and risk assessment*. NASA. 2017-2021

PI: *Subseasonal to Seasonal Prediction of Hindu Kush – Himalaya Hydrological Extremes with the South Asia Land Data Assimilation System*. NASA. 2016-2019

PI: *NILE-NEXUS: Opportunities for a sustainable food-energy-water future in the Blue Nile Mountains of Ethiopia*. Belmont Forum. 2016-2019

PI: *Keeping up with GRACE: Model Improvements to Support GRACE Data Assimilation in an Age of Freshwater Appropriation*. NASA. 2016-2021

PI: *CNH: Agroecosystem-based Climate Resilience Strategies in the Blue Nile Headwaters of Ethiopia*. NSF. 2012-2016

PI: *Food Energy Water Supplemental Award for CNH*. NSF. 2015-2016

PI: *Project Nile: Distributed Hydrological Information for Water Management in the Nile Basin*. NASA. 2009-2014

PI: *Development of a Detection and Early Warning System for Malaria Risk in the Amazon*. NASA. 2011-2013

Co-I: *Equity, Environmental Justice, and Extreme Heat: Leveraging Earth Observations to Strengthen Community Driven Climate Mitigation Strategies*. NASA. 2022-2024

Co-I: *Getting to Zero: Satellite-Informed Tools to support Malaria Elimination*. NASA. 2022-2025

Co-I: *Quantifying distributional health costs during extreme weather events*. NASA. 2022-2025

Co-I: *From Forecasts to Action (F2A): Enabling proactive societal responses to hydrological extremes*. NASA. 2022-2024

Co-I: *R01 - A Malaria Early Warning System for the Western Amazon*. NIH. 2021-2026

Co-I: *Mid-Atlantic Regional Sciences and Assessments (MARISA) 2.0: Continuity and Expansion of Climate-Relevant and Community-Based Engagement and Support*. NOAA. 2021-2026

Co-I: *MAP-Coupling an advanced coupled surface-subsurface hydrologic modeling and data assimilation system using LIS and ParFlow*. NASA. 2020-2024

Co-I: *HMA-reanalysis: Development of a multidecadal land reanalysis over High Mountain Asia*. NASA. 2020-2023

Co-I: *From Space to Front Porch: connecting Earth Observations to health outcomes with an environmental exposure modeling system*. NASA. 2018-2021

Co-I: *In Hot Water and Harm's Way: Modeling to Promote Regional Resilience to Repeated Heat Waves and Hurricanes*. NSF. 2013-2018

Co-I: *Seasonal Prediction of Hydro-Climatic Extremes in the Greater Horn of Africa under Evolving Climate Conditions to Support Adaptation Strategies*. NASA. 2013-2016

Co-I: *Integrating GRACE and GRACE Follow On Data into Flood and Drought Forecasts for the Continental U.S.* NASA. 2015-2019

Co-I: *Predicting Middle Eastern and African Seasonal Water Deficits using NASA Data and Models*. NASA. 2015-2019

Co-I: *An Early Warning System for Vector-borne disease risk in the Amazon*. NASA. 2015-2018

Co-I: *Environmental exposures across urban and rural communities in the Deep South*. NIH. 2015-2019

Co-I: *Downscaling of GRACE Terrestrial Water Storage Observations and Application to Global Drought Monitoring*. NASA. 2014-2016

Co-I: *Integrated Modeling at Satellite Resolved Scales*. NASA. 2010-2014

Co-I: *Extreme Heat Events – Evolving Risk Patterns in Urban and Rural Communities*. NIH. 2011-2013

Co-I: *IGERT: Water, Climate, and Health*. NSF. 2011-2016

Co-I: *Multisensor snow data assimilation*. NASA. 2011-2014

Co-I: *Modeling the Effects of Climate Change on the Global Food System*. JHU Discovery Award. 2015-2016

Lead US Partner: *Bringing seasonal forecasts to the farmer: participatory climate smart villages in Ethiopia*. USAID PEER. 2016-2019

Lead US Partner: *Transboundary water management adaptation in the Amudarya basin to climate change uncertainties*. USAID PEER. 2015-2018

### **Articles in Refereed Journals**

221. Recalde-Coronel, G. C., Zaitchik, B., Pan, W., Zhou, Y., & Badr, H. (2024). Contributions of initial conditions and meteorological forecast to subseasonal-to-seasonal hydrological forecast skill in Western Tropical South America. *Journal of Hydrometeorology*.

220. Stowell, J. D., Anenberg, S., Zaitchik, B. F., Tong, D. Q., Horwell, C. J., Stolle, D. P., ... & McEntee, C. (2024). Health-damaging climate events highlight the need for interdisciplinary, engaged research. *GeoHealth*, 8(2), e2024GH001022.
219. Colston, J. M., Fang, B., Houpt, E., Chernyavskiy, P., Swarup, S., Gardner, L. M., Nong, M. K., Badr, H. S., Zaitchik, B. F., Lakshmi, V. & Kosek, M. N. (2024). The Planetary Child Health & Enterics Observatory (Plan-EO): A protocol for an interdisciplinary research initiative and web-based dashboard for mapping enteric infectious diseases and their risk factors and interventions in LMICs. *Plos one*, 19(2), e0297775.
218. Gunderson, A. K., Recalde-Coronel, C., Zaitchick, B. F., Yori, P. P., Pinedo, S. R., Olortegui, M. P., ... & Pan, W. K. (2023). A prospective cohort study linking migration, climate, and malaria risk in the Peruvian Amazon. *Epidemiology & Infection*, 151, e202.
217. Yasanayake, C. N., Zaitchik, B. F., & Gnanadesikan, A. (2023). Seasonal modulation of the Madden–Julian Oscillation’s impact on rainfall in Sri Lanka. *Journal of Climate*, 36(20), 7231–7255.
216. Kim, J., Zaitchik, B., & Waugh, D. (2023). How Does Climate Change Affect the Upper Airway?. *Otolaryngologic Clinics of North America*.
215. Miller, D. L., Wolf, S., Fisher, J. B., Zaitchik, B. F., Xiao, J., & Keenan, T. F. (2023). Increased photosynthesis during spring drought in energy-limited ecosystems. *Nature Communications*, 14(1), 7828.
214. Waugh, D. W., Zaitchik, B., Scott, A. A., Ibsen, P. C., Jenerette, G. D., Schatz, J., & Kucharik, C. J. (2023). Limited Role of Absolute Humidity in Intraurban Heat Variability. *Journal of Applied Meteorology and Climatology*, 62(12), 1845-1854.
213. Gashaw, T., Wubaye, G. B., Worqlul, A. W., Dile, Y. T., Mohammed, J. A., Birhan, D. A., ... Zaitchik, B., ,,, & Seid, A. (2023). Local and regional climate trends and variabilities in Ethiopia: Implications for climate change adaptations. *Environmental Challenges*, 13, 100794.
212. Ademe, D., Tesfaye, K., Simane, B., Zaitchik, B. F., Alemayehu, G., & Adgo, E. (2024). Optimizing agronomic practices to harness climate change impacts on potato production in tropical highland regions. *European Journal of Agronomy*, 152, 127021.
211. Badr, H. S., Zaitchik, B. F., Kerr, G. H., Nguyen, N. L. H., Chen, Y. T., Hinson, P., ... & Gardner, L. M. (2023). Unified real-time environmental-epidemiological data for multiscale modeling of the COVID-19 pandemic. *Scientific Data*, 10(1), 367.
210. Aune, K. T., Zaitchik, B. F., Curriero, F. C., Davis, M. F., & Smith, G. S. (2023). Agreement in extreme precipitation exposure assessment is modified by race and social vulnerability. *Frontiers in Epidemiology*, 3, 1128501.

209. Zaitchik, B.F., Rodell, M., Biasutti, M., & Seneviratne, S.I. (2023). Wetting and drying trends under climate change. *Nature Water*. <https://doi.org/10.1038/s44221-023-00073-w>
208. Brower, A. E., Ramesh, B., Islam, K. A., Mortveit, H. S., Hoops, S., Vullikanti, A., Marathe, M. V., Zaitchik, B., Gohlke, J. M. & Swarup, S. (2023). Augmenting the Social Vulnerability Index using an agent-based simulation of Hurricane Harvey. *Computers, Environment and Urban Systems*, 105, 102020.
207. Ramesh, B., Callender, R., Zaitchik, B. F., Jagger, M., Swarup, S., & Gohlke, J. M. (2023). Adverse Health Outcomes Following Hurricane Harvey: A Comparison of Remotely-Sensed and Self-Reported Flood Exposure Estimates. *GeoHealth*, 7(4), e2022GH000710.
206. Kerr, G. H., Badr, H. S., Barbieri, A. F., Colston, J. M., Gardner, L. M., Kosek, M. N., & Zaitchik, B. F. (2023). Evolving Drivers of Brazilian SARS-CoV-2 Transmission: A Spatiotemporally Disaggregated Time Series Analysis of Meteorology, Policy, and Human Mobility. *GeoHealth*, 7(3), e2022GH000727.
205. Juturu, P., Conlon, T., Zhang, Y., Avraam, C., Siddiqui, S., Simane, B., & Zaitchik, B. (2023). Optimal grid expansion under future electricity demand for groundwater irrigation in Ethiopia. *Energy for Sustainable Development*, 72, 351-377.
204. Janko, M. M., Recalde-Coronel, G. C., Damasceno, C. P., Salmón-Mulanovich, G., Barbieri, A. F., Lescano, A. G., Zaitchik, B. F., & Pan, W. K. (2023). The impact of sustained malaria control in the Loreto region of Peru: a retrospective, observational, spatially-varying interrupted time series analysis of the PAMAFRO program. *The Lancet Regional Health—Americas*, 20.
203. Badr, H. S., Colston, J. M., Nguyen, N. L. H., Chen, Y. T., Burnett, E., Ali, S. A., ... Zaitchik, B. F., & Kosek, M. N. (2023). Spatiotemporal variation in risk of Shigella infection in childhood: a global risk mapping and prediction model using individual participant data. *The Lancet Global Health*, 11(3), e373-e384.
202. Colston, J. M., Hinson, P., Nguyen, N. L. H., Chen, Y. T., Badr, H. S., Kerr, G. H., ... & Zaitchik, B. F. (2023). Effects of hydrometeorological and other factors on SARS-CoV-2 reproduction number in three contiguous countries of Tropical Andean South America: a spatiotemporally disaggregated time series analysis. *IJID regions*, 6, 29-41.
201. Wubaye, G. B., Gashaw, T., Worqlul, A. W., Dile, Y. T., Taye, M. T., Hailelassie, A., Zaitchik, B.F., ... & Srinivasan, R. (2023). Trends in Rainfall and Temperature Extremes in Ethiopia: Station and Agro-Ecological Zone Levels of Analysis. *Atmosphere*, 14(3), 483.
200. Kim, J., Waugh, D. W., Zaitchik, B. F., Luong, A., Bergmark, R., Lam, K., ... & Mullings, W. (2022, December). Climate Change, The Environment, And Rhinologic Disease. In *International Forum of Allergy & Rhinology*.

199. Brower, A. E., Corpuz, B., Ramesh, B., Zaitchik, B., Gohlke, J. M., & Swarup, S. (2022). Predictors of Evacuation Rates During Hurricane Laura: Weather Forecasts, Twitter, and COVID-19. *Weather, Climate, and Society*.
198. Colston, J., Kosek, M., Zaitchik, B., & Badr, H. (2022). Spatiotemporal variation and environmental sensitivity of childhood enteric pathogen infection risk: a Planetary Health approach to predictive modelling and risk mapping. *The Lancet Planetary Health*, 6, S13.
197. Nie, W., Kumar, S. V., Peters-Lidard, C. D., Zaitchik, B. F., Arsenault, K. R., Bindlish, R., & Liu, P. W. (2022). Assimilation of remotely sensed leaf area index enhances the estimation of anthropogenic irrigation water use. *Journal of Advances in Modeling Earth Systems*, 14(11), e2022MS003040.
196. Hoffman-Hall, A., Gorris, M. E., Anenberg, S., Bredder, A. E., Dhaliwal, J. K., Diaz, M. A., ... & Zaitchik, B. F. (2022). A GeoHealth Call to Action: Moving Beyond Identifying Environmental Injustices to Co-Creating Solutions. *GeoHealth*, 6(11), e2022GH000706.
195. Fetene, Z. A., Zaitchik, B. F., Zeleke, T. T., Yeshita, B. D., & Vashisht, A. (2022) Coupled Model Intercomparison Project phase 5 and 6 representation of peak and end of rainy season over Upper Blue Nile basin. *International Journal of Climatology*.
194. Recalde-Coronel, G.C.\*, Zaitchik, B., Pan, W., & Getirana, A. (2022). Influence of Vegetation on Simulation of the Water Balance and Hydrological Response to the El Niño Southern Oscillation in Western Tropical South America. *Journal of Hydrometeorology*.
193. Fu, J., Wang, W., Zaitchik, B., Nie, W., Fei, E. X., Miller, S., & Harman, C. J. (2022). Critical role of irrigation efficiency for cropland expansion in western China arid agroecosystems. *Earth's Future*, e2022EF002955.
192. Osman, M., Zaitchik, B. F., & Winstead, N. S. (2022). Cascading drought-heat dynamics during the 2021 Southwest United States Heatwave. *Geophysical Research Letters*, e2022GL099265.
191. Zaitchik, B. F., Omumbo, J., Lowe, R., van Aalst, M., Anderson, L. O., Fischer, E., ... & Luterbacher, J. (2022). Planning for compound hazards during the COVID-19 pandemic: the role of climate information systems. *Bulletin of the American Meteorological Society*, 103(3), E704-E709.
190. Nie, W., Kumar, S. V., Arsenault, K. R., Peters-Lidard, C. D., Mladenova, I. E., Bergaoui, K., Hazra, A., Zaitchik, B.F., ... & Navari, M. (2022). Towards effective drought monitoring in the Middle East and North Africa (MENA) region: implications from assimilating leaf area index and soil moisture into the Noah-MP land surface model for Morocco. *Hydrology and Earth System Sciences*, 26(9), 2365-2386.

189. Barnard, M. A., Emani, S. R., Fortner, S. K., Haygood, L., Sun, Q., White-Newsome, J. L., & Zaitchik, B. (2022). GeoHealth perspectives on integrated, coordinated, open, networked (ICON) science. *Earth and Space Science*, e2021EA002157.
188. Dezfuli, A., Razavi, S., & Zaitchik, B. F. (2022). Compound effects of climate change on future transboundary water issues in the Middle East. *Earth's Future*, 10(4), e2022EF002683.
187. Ramesh, B., Jagger, M. A., Zaitchik, B., Kolivras, K. N., Swarup, S., Deanes, L., ... & Gohlke, J. M. (2022). Flooding and emergency department visits: Effect modification by the CDC/ATSDR Social Vulnerability Index. *International Journal of Disaster Risk Reduction*, 102986.
186. Gao, Z., Zaitchik, B. F., Hou, Y., & Chen, W. (2022). Toward park design optimization to mitigate the urban heat Island: Assessment of the cooling effect in five US cities. *Sustainable Cities and Society*, 81, 103870.
185. Perez-Saez, J., Lessler, J., Lee, E. C., Luquero, F. J., Malembaka, E. B., Finger, F., ... Zaitchik, B.F., & Azman, A. S. (2022). The seasonality of cholera in sub-Saharan Africa: a statistical modelling study. *The Lancet Global Health*.
184. Cromar, K. R., Anenberg, S. C., Balmes, J. R., Fawcett, A. A., Ghazipura, M., Gohlke, J. M., ... Zaitchik, B.F., & Ewart, G. (2022). Global Health Impacts for Economic Models of Climate Change: A Systematic Review and Meta-Analysis. *Annals of the American Thoracic Society*, (ja).
183. Ramesh, B., Jagger, M. A., Zaitchik, B. F., Kolivras, K. N., Swarup, S., Yang, B., ... & Gohlke, J. M. (2022). Estimating changes in emergency department visits associated with floods caused by Tropical Storm Imelda using satellite observations and syndromic surveillance. *Health & Place*, 74, 102757.
182. Osman, M., Zaitchik, B. F., Badr, H. S., Otkin, J., Zhong, Y., Lorenz, D., ... & Holmes, T. (2022). Diagnostic classification of flash drought events reveals distinct classes of forcings and impacts. *Journal of Hydrometeorology*.
181. Schulte, J., Policelli, F., & Zaitchik, B. (2022). A waveform skewness index for measuring time series nonlinearity and its applications to the ENSO–Indian monsoon relationship. *Nonlinear Processes in Geophysics*, 29(1), 1-15.
180. Van de Walle, J., Brousse, O., Arnalsteen, L., Brimicombe, C., Byarugaba, D., Demuzere, M., ... Zaitchik, B. F., & van Lipzig, N. P. (2022). Lack of vegetation exacerbates exposure to dangerous heat in dense settlements in a tropical African city. *Environmental Research Letters*.
179. Mhiret, D. A., Dersseh, M. G., Guzman, C. D., Dagnew, D. C., Abebe, W. B., Zimale, F. A., Zaitchik, B. F., ... & Steenhuis, T. S. (2022). Topography Impacts Hydrology in the Sub-Humid Ethiopian Highlands. *Water*, 14(2), 196.

178. Colston, J. M., Zaitchik, B. F., Badr, H. S., Burnett, E., Ali, S. A., Rayamajhi, A., ... & Kosek, M. N. (2021). Associations between 8 Earth Observation-derived climate variables and enteropathogen infection: An Independent Participant Data Meta-Analysis of surveillance studies with broad spectrum nucleic acid diagnostics. *GeoHealth*, e2021GH000452.
177. Vashisht, A. \*, & Zaitchik, B. (2021). Modulation of East African boreal fall rainfall: combined effects of the Madden Julian Oscillation (MJO) and El Niño Southern Oscillation (ENSO). *Journal of Climate*, 1-42.
176. Zaitchik, B. F., & Tuholske, C. (2021). Earth observations of extreme heat events: leveraging current capabilities to enhance heat research and action. *Environmental Research Letters*, 16(11).
175. Pan, W., Fernández, D., Tyrovolas, S., Iago, G. V., Dasgupta, R. R., Zaitchik, B. F., ... & Woods, C. W. (2021). Heterogeneity in the Effectiveness of Non-Pharmaceutical Interventions during the first SARS-CoV2 wave in the United States. *Frontiers in public health*, 1857.
174. Ademe, D., Zaitchik, B. F., Tesfaye, K., Simane, B., Alemayehu, G., & Adgo, E. (2021). Analysis of agriculturally relevant rainfall characteristics in a tropical highland region: An agroecosystem perspective. *Agricultural and Forest Meteorology*, 311, 108697.
173. Lorenz, D. J., Otkin, J. A., Zaitchik, B., Hain, C., & Anderson, M. C. (2021). Predicting Rapid Changes in Evaporative Stress Index (ESI) and Soil Moisture Anomalies over the Continental United States. *Journal of Hydrometeorology*, 22(11), 3017-3036.
172. Birhan, D. A., Zaitchik, B. F., Fantaye, K. T., Birhanu, B. S., Damot, G. A., & Tsegaye, E. A. (2021). Observed and projected trends in climate extremes in a tropical highland region: An agroecosystem perspective. *International Journal of Climatology*.
171. Shi, R. \*, Hobbs, B. F., Zaitchik, B. F., Waugh, D. W., Scott, A. A., & Zhang, Y. (2021). Monitoring intra-urban temperature with dense sensor networks: Fixed or mobile? An empirical study in Baltimore, MD. *Urban Climate*, 39, 100979.
170. Womber, Z. R., Zimale, F. A., Kebedew, M. G., Asers, B. W., DeLuca, N. M., Guzman, C. D., ... & Zaitchik, B. F. (2021). Estimation of Suspended Sediment Concentration from Remote Sensing and In Situ Measurement over Lake Tana, Ethiopia. *Advances in Civil Engineering*, 2021.
169. Nigussie, Y., Zaitchik, B., & Simane, B. (2021). Environmental cost-effectiveness analysis of alternative rural energy programs in Ethiopia. *Biofuels*, 1-9.
168. Ramesh, B., Jagger, M. A., Zaitchik, B., Kolivras, K. N., Swarup, S., Deanes, L., & Gohlke, J. M. (2021). Emergency department visits associated with satellite observed flooding during and following Hurricane Harvey. *Journal of Exposure Science & Environmental Epidemiology*, 1-10.

---

\* JHU student as first author

167. Fetene, Z. A., Zaitchik, B. F., Zeleke, T. T., Yeshita, B. D., & Recalde-Coronel, C. G. (2021). Influence of the Boreal Summer Intra-Seasonal Oscillation on rainfall in the Blue Nile Basin. *Climate Dynamics*, 1-13.
166. Zamora, R. A., Zaitchik, B. F., Rodell, M., Getirana, A., Kumar, S., Arsenault, K., & Gutmann, E. (2021). Contribution of Meteorological Downscaling to Skill and Precision of Seasonal Drought Forecasts. *Journal of Hydrometeorology*.
165. Fang, J.\*, & Zaitchik, B. (2021). Challenges in Reconciling Satellite-Based and Locally Reported Estimates of Wetland Change: A Case of Topographically Constrained Wetlands on the Eastern Tibetan Plateau. *Remote Sensing*, 13(8), 1484.
164. Osman, M.\*, Zaitchik, B. F., Badr, H. S., Christian, J. I., Tadesse, T., Otkin, J. A., & Anderson, M. C. (2021). Flash drought onset over the Contiguous United States: Sensitivity of inventories and trends to quantitative definitions. *Hydrology and Earth System Sciences*, 25(2), 565-581.
163. Yang, G., Zaitchik, B., Badr, H., & Block, P. (2021). A Bayesian adaptive reservoir operation framework incorporating streamflow non-stationarity. *Journal of Hydrology*, 594, 125959.
162. Gorris, M. E., Anenberg, S. C., Goldberg, D. L., Kerr, G. H., Stowell, J. D., Tong, D., & Zaitchik, B. F. (2021). Shaping the future of science: COVID-19 highlighting the importance of GeoHealth. *GeoHealth*, e2021GH000412.
161. Gao, Z., Hou, Y., Zaitchik, B. F., Chen, Y., & Chen, W. (2021). A Two-Step Integrated MLP-GTWR Method to Estimate 1 km Land Surface Temperature with Complete Spatial Coverage in Humid, Cloudy Regions. *Remote Sensing*, 13(5), 971.
160. Kerr, G. H.\*, Badr, H. S., Gardner, L. M., Perez-Saez, J., & Zaitchik, B. F. (2021). Associations between meteorology and COVID-19 in early studies: Inconsistencies, uncertainties, and recommendations. *One Health*, 12, 100225.
159. Sweijid, N., & Zaitchik, B. F. (2021). The 2020 WMO Symposium on Climatological, Meteorological and Environmental factors in the COVID-19 pandemic: A special issue from symposium presentations. *One Health*, 12, 100243.
158. Nie, W.\*, Zaitchik, B. F., Rodell, M., Kumar, S. V., Arsenault, K. R., & Badr, H. S. (2021). Irrigation water demand sensitivity to climate variability across the Contiguous United States. *Water Resources Research*, e2020WR027738.
157. Ewunetu, A., Simane, B., Teferi, E., & Zaitchik, B. F. (2021). Mapping and Quantifying Comprehensive Land Degradation Status Using Spatial Multicriteria Evaluation Technique in the Headwaters Area of Upper Blue Nile River. *Sustainability*, 13(4), 2244.
156. Ewunetu, A., Simane, B., Teferi, E., & Zaitchik, B. F. (2021). Land cover change in the blue Nile river headwaters: Farmers' perceptions, pressures, and satellite-based mapping. *Land*, 10(1), 68.

155. Avraam, C.\*, Zhang, Y., Sankaranarayanan, S., Zaitchik, B., Moynihan, E., Juturu, P., Neff, R., & Siddiqui, S. (2021) Optimization-Based Systems Modeling for the Food-Energy-Water Nexus. *Current Sustainable/Renewable Energy Reports*, 1-13. <https://doi.org/10.1007/s40518-020-00161-5>
154. Solomon, R., Simane, B., & Zaitchik, B. F. (2021). The Impact of Climate Change on Agriculture Production in Ethiopia: Application of a Dynamic Computable General Equilibrium Model. *American Journal of Climate Change*, 10(1), 32-50.
153. Ewunetu, A., Simane, B., Teferi, E., & Zaitchik, B. (2021). Relationships and the Determinants of Sustainable Land Management Technologies in North Gojjam Sub-Basin, Upper Blue Nile, Ethiopia. *Sustainability*, 13(11), 6365.
152. Grace, K., Siddiqui, S. & Zaitchik, B.F. (2020). A framework for interdisciplinary research in food systems. *Nature Food*, <https://doi.org/10.1038/s43016-020-00212-6>
151. Zhou, Y.\*, Zaitchik, B. F., Kumar, S. V., Arsenault, K. R., Matin, M. A., Qamer, F. M., ... & Shakya, K. (2021). Developing a hydrological monitoring and sub-seasonal to seasonal forecasting system for South and Southeast Asian river basins. *Hydrology and Earth System Sciences*, 25(1), 41-61.
150. Zaitchik, B. F., Sweijd, N., Shumake-Guillemot, J., Morse, A., Gordon, C., Marty, A., ... & Lu, Y. (2020). A framework for research linking weather, climate and COVID-19. *Nature Communications*, 11(1), 1-3.
149. Bazzana, D., Gilioli, G., Simane, B., & Zaitchik, B. (2021) Analyzing constraints in the water-energy-food nexus: The case of eucalyptus plantation in Ethiopia. *Ecological Economics*, 180, 106875.
148. Schulte, J., Policielli, F., & Zaitchik, B. (2020). A skewed perspective of the Indian rainfall–El Niño–Southern Oscillation (ENSO) relationship. *Hydrology and Earth System Sciences*, 24(11), 5473-5489.
147. Schulte, J., Policielli, F., & Zaitchik, B. (2021). A Continuum Approach to Understanding Changes in the ENSO-Indian Monsoon Relationship. *Journal of Climate*, 34(4), 1549-1561.
146. Waugh, D. W., He, Z., Zaitchik, B., Peng, R. D., Diette, G. B., Hansel, N. N., ... & Williams, D. (2020). Indoor heat exposure in Baltimore: does outdoor temperature matter?. *International Journal of Biometeorology*, 1-10.
145. Ambikapathi, R.\*, Kosek, M. N., Lee, G. O., Olortegui, M. P., Zaitchik, B., Yori, P. P., ... & Caulfield, L. E. (2020). La Niña weather impacts dietary patterns and dietary diversity among children in the Peruvian Amazon. *Public Health Nutrition*, 1-11.

144. Bazzana, D., Gilioli, G., & Zaitchik, B. (2020) Impact of water and energy infrastructure on local well-being: an agent-based analysis of the water-energy-food nexus. *Structural Change and Economic Dynamics*, 55, 165-176.
143. Wongso, E., Nateghi, R., Zaitchik, B., Quiring, S., & Kumar, R. (2020). A Data-Driven Framework to Characterize State-Level Water Use in the United States. *Water Resources Research*, 56(9), e2019WR024894.
142. Vashisht, A.\*, Zaitchik, B., & Gnanadesikan, A. (2021). ENSO teleconnection to eastern African summer rainfall in global climate models: Role of the Tropical Easterly Jet. *Journal of Climate*, 34(1), 293-312.
141. Osman, M.\*, Zaitchik, B., Badr, H., & Hameed, S. (2020). North Atlantic centers of action and seasonal to subseasonal temperature variability in Europe and eastern North America. *International Journal of Climatology*.
140. DeLuca, N. M.\*, Zaitchik, B. F., Guikema, S. D., Jacobs, J. M., Davis, B. J., & Curriero, F. C. (2020). Evaluation of remotely sensed prediction and forecast models for *Vibrio parahaemolyticus* in the Chesapeake Bay. *Remote Sensing of Environment*, 250, 112016.
139. Bazzana, D., Gilioli, G., & Zaitchik, B. (2020). Impact of hydropower development on rural livelihood: An agent-based exploration. *Journal of Cleaner Production*, 275, 122333.
138. Helman, D., Zaitchik, B. F., & Funk, C. (2020). Climate has contrasting direct and indirect effects on armed conflicts. *Environmental Research Letters*, 15(10), 104017.
137. Colston, J. M., Faruque, A. S., Hossain, M. J., Saha, D., Kanungo, S., Mandomando, I., ... Zaitchik, B. F. & Kosek, M. N. (2020). Associations between Household-Level Exposures and All-Cause Diarrhea and Pathogen-Specific Enteric Infections in Children Enrolled in Five Sentinel Surveillance Studies. *International journal of environmental research and public health*, 17(21), 8078.
136. Rehr, R. C., Bandaragoda, C., Zaitchik, B. F., & Wimberly, M. C. (2020) A GeoHealth Response to a Geoscience Community climate change position statement. *GeoHealth*, e2020GH000265.
135. Helman, D., & Zaitchik, B. F. (2020). Temperature anomalies affect violent conflicts in African and Middle Eastern warm regions. *Global Environmental Change*, 63, 102118.
134. Mhired, D. A., Dagnaw, D. C., Guzman, C. D., Alemie, T. C., Zegeye, A. D., Tebebu, T. Y., Langendoen, E. J., Zaitchik, B.F., Tilahun, S. A. & Steenhuis, T. S. (2020). A nine-year study on the benefits and risks of soil and water conservation practices in the humid highlands of Ethiopia: The Debre Mawi watershed. *Journal of Environmental Management*, 270, 110885.
133. Jordan, A.K.\*, Zaitchik, B.F., Gnanadesikan, A., Kim, D., and Badr, H.S. (2020) Strength of Linkages Between Dust and Circulation Over North Africa: results from a coupled modeling

- system with active dust. *Journal of Geophysical Research-Atmospheres*. DOI:10.1029/2019JD030961.
132. Carter, A.W., Zaitchik, B.F., Gohlke, J.M., Wang, S. and Richardson, M.B. (2020). Methods for estimating Wet Bulb Globe Temperature from remote and low-cost data: a comparative study in central Alabama. *GeoHealth*. DOI:10.1029/2019GH000231
131. Logan, T. M.\*, Zaitchik, B., Guikema, S., & Nisbet, A. (2020). Night and day: The influence and relative importance of urban characteristics on remotely sensed land surface temperature. *Remote Sensing of Environment*, 247, 111861.
130. Shukla, S., Arsenault, K. R., Hazra, A., Peters-Lidard, C., Koster, R. D., Davenport, F., ... Zaitchik, B.F. ... & Getirana, A. (2020). Improving early warning of drought-driven food insecurity in southern Africa using operational hydrological monitoring and forecasting products. *Natural Hazards & Earth System Sciences*, 20(4).
129. Gebreyes, M., Bazzana, D., Simonetto, A., Müller-Mahn, D., Zaitchik, B., Gilioli, G., & Simane, B. (2020). Local Perceptions of Water-Energy-Food Security: Livelihood Consequences of Dam Construction in Ethiopia. *Sustainability*, 12(6), 2161.
128. Sankaranarayanan, S.\*, Zhang, Y., Carney, J., Nigussie, Y., Esayas, B., Simane, B., Zaitchik, B. & Siddiqui, S. (2020). What Are the Domestic and Regional Impacts From Ethiopia's Policy on the Export Ban of Teff?. *Frontiers in Sustainable Food Systems*, 4, 4.
127. Harrower, M. J., Nathan, S., Mazzariello, J. C., Zerue, K., Dumitru, I. A., Meresa, Y., ... Zaitchik, B.F. & Anderson, M. C. (2020). Water, Geography, and Aksumite Civilization: The Southern Red Sea Archaeological Histories (SRSAH) Project Survey (2009–2016). *African Archaeological Review*, 1-17.
126. Arsenault, K. R., Shukla, S., Hazra, A., Getirana, A., McNally, A., Kumar, S. V., Koster, R.D., Peters-Lidard, C.D., Zaitchik, B.F., Badr, H.S. & Jung, H. C. (2020). The NASA hydrological forecast system for food and water security applications. *Bulletin of the American Meteorological Society*.
125. Recalde-Coronel, G. C.\*, Zaitchik, B., & Pan, W. K. (2020). Madden–Julian oscillation influence on sub-seasonal rainfall variability on the west of South America. *Climate Dynamics*, 1-19.
124. Colston, J., Paredes Olortegui, M., Zaitchik, B., Peñataro Yori, P., Kang, G., Ahmed, T., ... & Lima, A. (2020). Pathogen-Specific Impacts of the 2011–2012 La Niña-Associated Floods on Enteric Infections in the MAL-ED Peru Cohort: A Comparative Interrupted Time Series Analysis. *International Journal of Environmental Research and Public Health*, 17(2), 487.
123. Tonn, G.\*, Guikema, S., & Zaitchik, B. (2019). Simulating behavioral influences on community flood risk under future climate scenarios. *Risk analysis*. DOI: 10.1111/risa.13428

122. Taye, M., Simane, B., Zaitchik, B. F., Selassie, Y. G., & Setegn, S. (2019). Rainfall Variability across the Agro-Climatic Zones of a Tropical Highland: The Case of the Jema Watershed, Northwestern Ethiopia. *Environments*, 6(11), 118.
121. Taye, M., Simane, B., F Zaitchik, B., G Selassie, Y., & Setegn, S. (2019). Land Use Evaluation over the Jema Watershed, in the Upper Blue Nile River Basin, Northwestern Highlands of Ethiopia. *Land*, 8(3), 50.
120. Nelson, E. J., Pulla, S. T., Matin, M. A., Shakya, K., Jones, N., Ames, D. P., ... Zaitchik, B.F. & Gatlin, P. (2019). Enabling Stakeholder Decision-Making With Earth Observation and Modeling Data Using Tethys Platform. *Frontiers in Environmental Science*.
119. Mhired, D. A., Dagnaw, D. C., Alemie, T. C., Guzman, C. D., Tilahun, S. A., Zaitchik, B. F., & Steenhuis, T. S. (2019). Impact of Soil Conservation and Eucalyptus on Hydrology and Soil Loss in the Ethiopian Highlands. *Water*, 11(11), 2299.
118. Bedaso, Z. K., DeLuca, N. M., Levin, N. E., Zaitchik, B. F., Waugh, D. W., Wu, S. Y., ... & Shanko, D. (2019). Spatial and temporal variation in the isotopic composition of Ethiopian precipitation. *Journal of Hydrology*, 124364.
117. Getirana, A., Rodell, M., Kumar, S., Beaudoin, H. K., Arsenault, K., Zaitchik, B., ... & Bettadpur, S. (2020). GRACE improves seasonal groundwater forecast initialization over the US. *Journal of Hydrometeorology*, 21(1).
116. Nie, W.\*, Zaitchik, B. F., Rodell, M., Kumar, S. V., Arsenault, K. R., Li, B., & Getirana, A. (2019). Assimilating GRACE into a Land Surface Model in the presence of an irrigation-induced groundwater trend. *Water Resources Research*. DOI: 10.1029/2019WR025363
115. Davis, B. J., Jacobs, J. M., Zaitchik, B., DePaola, A., & Curriero, F. C. (2019). *Vibrio parahaemolyticus* in the Chesapeake Bay: operational in situ prediction and forecast models can benefit from inclusion of lagged water quality measurements. *Applied and environmental microbiology*, 85(17), e01007-19.
114. Colston, J. M.\*, Zaitchik, B., Kang, G., Yori, P. P., Ahmed, T., Lima, A., ... & Peng, R. D. (2019). Use of earth observation-derived hydrometeorological variables to model and predict rotavirus infection (MAL-ED): a multisite cohort study. *The Lancet Planetary Health*, 3(6), e248-e258.
113. Blum, A. G., Zaitchik, B., Alexander, S., Wu, S., Zhang, Y., Shukla, S., ... & Block, P. (2019). A Grand Prediction: Communicating and Evaluating 2018 summertime Upper Blue Nile rainfall and streamflow forecasts in preparation for Ethiopia's new dam. *Frontiers in Water*, 1, 3.
112. Li, B., Rodell, M., Kumar, S., Beaudoin, H. K., Getirana, A., Zaitchik, B. F., ... & Tian, S. (2019). Global GRACE data assimilation for groundwater and drought monitoring: Advances and challenges. *Water Resources Research* 55(9), 7564-7586

111. Bruss, C. B.\*, Nateghi, R., & Zaitchik, B. F. (2019). Explaining National Trends in Terrestrial Water Storage. *Frontiers in Environmental Science*, 7, 85.
110. Yoon, Y., Kumar, S. V., Forman, B. A., Zaitchik, B., Kwon, Y., Qian, Y., ... & Richey, A. (2019). Evaluating the uncertainty of terrestrial water budget components over High Mountain Asia. *Frontiers in Earth Science*, 7, 120.
109. Qamer, F. M., Tadesse, T., Matin, M., Ellenburg, W. L., & Zaitchik, B. (2019). Earth Observation and Climate Services for Food Security and Agricultural Decision Making in South and Southeast Asia. *Bulletin of the American Meteorological Society*, (2019).
108. Wang, S., Richardson, M. B., Wu, C. Y., Cholewa, C. D., Lungu, C. T., Zaitchik, B. F., & Gohlke, J. M. (2019). Estimating Occupational Heat Exposure from Personal Sampling of Public Works Employees in Birmingham, Alabama. *Journal of occupational and environmental medicine*.
107. Stettz, S.\*, Zaitchik, B. F., Ademe, D., Musie, S., & Simane, B. (2019). Estimating variability in downwelling surface shortwave radiation in a tropical highland environment. *PLoS One*, 14(2), e0211220.
106. Eggen, M., Ozdogan, M., Zaitchik, B. F., Ademe, D., Foltz, J., & Simane, B. (2019). Vulnerability of sorghum production to extreme, sub-seasonal weather under climate change. *Environmental Research Letters*.
105. Wu, C. Y., Zaitchik, B. F., Swarup, S., & Gohlke, J. M. (2019). Influence of the Spatial Resolution of the Exposure Estimate in Determining the Association between Heat Waves and Adverse Health Outcomes. *Annals of the American Association of Geographers*, 1-12.
104. Yimanie, T. A.\*, Zaitchik, B. F., Simane, B., & Ambelu, A. (2019). Changing patterns of tree cover in a tropical highland regions and implications for food, energy, and water resources. *Frontiers in Environmental Science*, 7, 1.
103. Taye, M., Simane, B., Zaitchik, B., Setegn, S., & Selassie, Y. (2019). Analysis of the Spatial Patterns of Rainfall across the Agro-Climatic Zones of Jema Watershed in the Northwestern Highlands of Ethiopia. *Geosciences*, 9(1), 22.
102. Mhired, D. A., Dagneu, D. C., Assefa, T. T., Tilahun, S. A., Zaitchik, B. F., & Steenhuis, T. S. (2018). Erosion hotspot identification in the sub-humid Ethiopian highlands. *Ecohydrology & Hydrobiology*.
101. Shortridge, J. E., & Zaitchik, B. F. (2018). Characterizing climate change risks by linking robust decision frameworks and uncertain probabilistic projections. *Climatic Change*, 151(3-4), 525-539.
100. Jordan, A. K.\*, Gnanadesikan, A., & Zaitchik, B. (2018). Simulated Dust Aerosol Impacts on Western Sahelian Rainfall: Importance of Ocean Coupling. *Journal of Climate*, 31(22), 9107-9124.

99. Rougé, C., Tilmant, A., Zaitchik, B., Dezfuli, A., & Salman, M. (2018). Identifying key water resource vulnerabilities in data-scarce transboundary river basins. *Water Resources Research*, 54(8), 5264-5281.
98. Ghatak, D., Zaitchik, B., Kumar, S., Matin, M., Bajracharya, B., Hain, C., & Anderson, M. (2018). Influence of Precipitation Forcing Uncertainty on Hydrological Simulations with the NASA South Asia Land Data Assimilation System. *Hydrology*, 5(4), 57.
97. DeLuca, N. \*, Zaitchik, B., & Curriero, F. (2018). Can Multispectral Information Improve Remotely Sensed Estimates of Total Suspended Solids? A Statistical Study in Chesapeake Bay. *Remote Sensing*, 10(9), 1393.
96. Taye, M., Simane, B., Selssie, Y., Zaitchik, B., & Setegn, S. (2018). Analysis of the Spatial Variability of Soil Texture in a Tropical Highland: The Case of the Jema Watershed, Northwestern Highlands of Ethiopia. *International journal of environmental research and public health*, 15(9), 1903.
95. Milazzo, M. J., Gohlke, J. M., Gallagher, D. L., Scott, A. A., Zaitchik, B. F., & Marr, L. C. (2019). Potential for city parks to reduce exposure to BTEX in air. *Environmental Science: Processes & Impacts*, 21(1), 40-50.
94. Policelli, F., Hubbard, A., Jung, H. C., Zaitchik, B., & Ichoku, C. (2019). A predictive model for Lake Chad total surface water area using remotely sensed and modeled hydrological and meteorological parameters and multivariate regression analysis. *Journal of Hydrology*, 568, 1071-1080.
93. Sivitskis AJ, MJ Harrower, H David-Cuny, IA Dumitru, S Nathan, F Wiig, & B Zaitchik (2018) Hyperspectral satellite imagery detection of ancient raw material sources: Soft-stone vessel production at Aqir al-Shamoos (Oman). *Archaeological Prospection*.  
<https://doi.org/10.1002/arp.1719>
92. Kuwayama Y, A Thompson, R Bernknopf, B Zaitchik, & P Vail (2018) Estimating the Impact of Drought on Agriculture Using the US Drought Monitor. *American Journal of Agricultural Economics*. <https://doi.org/10.1093/ajae/aay037>
91. Nie W\*, BF Zaitchik, M Rodell, SV Kumar, MC Anderson, C Hain (2018) Groundwater Withdrawals Under Drought: Reconciling GRACE and Land Surface Models in the United States High Plains Aquifer. *Water Resources Research*.  
<https://doi.org/10.1029/2017WR022178>
90. Funk C, L Harrison, S Shukla . . . B Zaitchik & J Verdin (2018) Examining the role of unusually warm Indo-Pacific sea surface temperatures in recent African droughts. *Quarterly Journal of the Royal Meteorological Society*. DOI: 10.1002/qj.3266.

89. Bakker C, BF Zaitchik, S Siddiqui, BF Hobbs . . . & CL Parker (2018) Shocks, seasonality, and disaggregation: Modelling food security through the integration of agricultural, transportation, and economic systems. *Agricultural Systems*, 164, 165-184.
88. Scott A\*, DW Waugh and BF Zaitchik (2018) Reduced urban heat island intensity under warmer conditions. *Environmental Research Letters*.
87. Colston JM\*, T Ahmed . . . & B Zaitchik (2018) Evaluating meteorological data from weather stations, and from satellites and global models for a multi-site epidemiological study. *Environmental Research*, 165, 91-109.
86. Weldegerima TM, TT Zeleke, BS Birhanu, BF Zaitchik & ZA Fetene (2018) Analysis of Rainfall Trends and Its Relationship with SST Signals in the Lake Tana Basin, Ethiopia. *Advances in Meteorology*, <https://doi.org/10.1155/2018/5869010>.
85. Wu CYH, BF Zaitchik, & JM Gohlke (2018) Heat waves and fatal traffic crashes in the continental United States. *Accident Analysis and Prevention*, 119, 195-201.
84. Pizzitutti F, W Pan, B Feingold, B Zaitchik, CA Alvarez and CF Mena (2018) Out of the net: An agent-based model to study human movements influence on local-scale malaria transmission. *PloS one*, 13(3), e0193493.
83. Policelli F, A Hubbard, HC Jung, B Zaitchik, & C Ichoku (2018) Lake Chad Total Surface Water Area as Derived from Land Surface Temperature and Radar Remote Sensing Data. *Remote Sensing*, 10(2), 252.
82. Bernknopf R, D Brookshire, Y Kuwayama, M Macauley, M Rodell, A Thompson . . . & B Zaitchik (2017) The Value of Remotely Sensed Information: The Case of a GRACE-Enhanced Drought Severity Index. *Weather, Climate, and Society*, 10, 187-203.
81. Alemu, ZA, AA Ahmed, AW Yalew, BS Birhanu, & BF Zaitchik (2017) Individual and community level factors with a significant role in determining child height-for-age Z score in East Gojjam Zone, Amhara Regional State, Ethiopia: a multilevel analysis. *Archives of Public Health*, 75(1), 27.
80. Moore SM, AS Azman, BF Zaitchik, ED Mintz, J Brunkard, D Legros, . . . & J. Lessler (2017) El Niño and the shifting geography of cholera in Africa. *Proceedings of the National Academy of Sciences*, 201617218.
79. Ghatak D, B Zaitchik, C Hain and M Anderson (2017) The role of local heating in the 2015 Indian Heat Wave. *Scientific Reports*, 7(1), 7707.
78. Wilusz DC\*, BF Zaitchik, MC Anderson, CR Hain, MT Yilmaz & IE Mladenova (2017) Monthly flooded area classification using low resolution SAR imagery in the Sudd wetland from 2007 to 2011. *Remote Sensing of Environment*, 194, 205-218.

77. Satti S\*, BF Zaitchik, HS Badr and T Tadesse (2017) Enhancing dynamical seasonal predictions through objective regionalization. *Journal of Applied Meteorology and Climatology*, DOI: <http://dx.doi.org/10.1175/JAMC-D-16-0192.1>
76. Russell A\*, A Gnanadesikan and B Zaitchik (2017) Are the Central Andes Mountains a warming hot spot? *Journal of Climate*. <http://dx.doi.org/10.1175/JCLI-D-16-0268.1>.
75. Shortridge J\*, S Guikema and B Zaitchik (2017) Robust decision making in data scarce contexts: addressing data and model limitations for infrastructure planning under transient climate change. *Climatic Change*, 140(2), 323-337.
74. Zaitchik BF (2017) Madden-Julian Oscillation impacts on tropical African precipitation. *Atmospheric Research*. DOI: 10.1016/j.atmosres.2016.10.002
73. Dezfuli AK, BF Zaitchik, HS Badr, J Evans and CD Peters-Lidard (2017) The role of low-level terrain-induced jets in rainfall variability in Tigris-Euphrates Headwaters. *Journal of Hydrometeorology* DOI: <http://dx.doi.org/10.1175/JHM-D-16-0165.1>
72. Nie W\*, BF Zaitchik, G Ni and T Sun (2017) Impacts of Anthropogenic Heat on Summertime Rainfall in Beijing. *Journal of Hydrometeorology*, 18(3), 693-712.
71. Zeleke TT, F Giorgi, GT Diro and BF Zaitchik (2017) Trend and periodicity of drought over Ethiopia. *International Journal of Climatology*. DOI:10.1002/joc.5122
70. Badr HS\*, AK Dezfuli, BF Zaitchik and CD Peters-Lidard (2017) Regionalizing Africa: Patterns of Precipitation Variability in Observations and Global Climate Models. *Journal of Climate*. DOI: 10.1175/JCLI-D-16-0182.1
69. Scott AA\*, B Zaitchik, D Waugh and K O'Meara (2017) Intra-urban temperature variability in Baltimore. *Journal of Applied Meteorology and Climatology*. DOI: 10.1175/JAMC-D-16-0232.1
68. Eggen M, M Ozdogan, BF Zaitchik and B Simane (2017) Land Cover Classification in Complex and Fragmented Agricultural Landscapes of the Ethiopian Highlands. *Remote Sensing*, 8(12), 1020.
67. Alemneh T, A Ambelu, S Bahrndorff, ST Mereta, C Pertoldi and BF Zaitchik (2017) Modeling the impact of highland settlements on ecological disturbance of streams in Choke Mountain Catchment: Macroinvertebrate assemblages and water quality. *Ecological Indicators* 73:452-459.
66. Soneja SI, JM Tielsch, SK Khatri, B Zaitchik, FC Curriero, PN Breysse (2017) Characterizing Particulate Matter Exfiltration Estimates for Alternative Cookstoves in a Village-Like Household in Rural Nepal. *Environmental Management*. doi:10.1007/s00267-017-0915-3.

65. Scott AA\*, H Misiani, J Okoth, A Jordan, J Gohlke, G Ouma, J Arrighi, BF Zaitchik, E Jjemba, S Vergee, and D Waugh. (2017) Temperature and heat in informal settlements in Nairobi. PLoS ONE 12(11): e0187300. <https://doi.org/10.1371/journal.pone.0187300>
64. Kuras ER, M Bernhard, et al. (2017) Opportunities and challenges for personal heat exposure research. Environmental Health Perspectives, 85001, 1.
63. Regonda SK, BF Zaitchik, HS Badr and M Rodell (2016) Using Climate Regionalization to Understand Climate Forecast System Version 2 (CFSv2) Precipitation Performance for the Conterminous United States (CONUS). Geophysical Research Letters. DOI: 10.1002/2016GL069150.
62. Shortridge J\*, S Guikema, and B Zaitchik (2016) Empirical streamflow simulation for water resource management in data-scarce seasonal watersheds. Hydrology and Earth System Sciences 20:2611-2628, doi:10.5194/hess-20-2611-2016
61. Rivero-Calle S\*, CE Del Castillo, A Gnanadesikan, A Dezfali, B Zaitchik and DG Johns (2016) Interdecadal Trichodesmium variability in cold North Atlantic waters. Global Biogeochemical Cycles. doi:10.1002/2015GB005361
60. Kirschbaum, DB, GJ Huffman, RF Adler, S Braun, K Garrett, ... and BF Zaitchik (2016) NASA's Remotely-sensed Precipitation: A Reservoir for Applications Users. Bulletin of the American Meteorological Society, doi:10.1175/BAMS-D-15-00296.1
59. Zaitchik BF, MH Hayden, DAM Villela, CC Lord, UD Kitron, JJ Carvajal, DCP Câmara, and IC dos Reis (2016) Climate information for arbovirus risk monitoring: opportunities and challenges. Bull. Amer. Meteor. Soc. doi:10.1175/BAMS-D-16-0016.1
58. Kumar SV, BF Zaitchik, CD Peters-Lidard, M Rodell, RH Reichle, B Li, M Jasinski, D Mocko, A Getirana, G De Lannoy, M Cosh, CR Hain, M Anderson, KR Arsenault, Y Xia, and M Ek (2016) Assimilation of gridded GRACE terrestrial water storage estimates in the North American Land Data Assimilation System. Journal of Hydrometeorology. DOI: <http://dx.doi.org/10.1175/JHM-D-15-0157.1>
57. Tadesse T, T Haigh, N Wall, A Shiferaw, B Zaitchik, S Beyene, G Berhan and J Petr (2016) Linking Seasonal Predictions to Decision-Making and Disaster Management in the Greater Horn of Africa. Bulletin of the American Meteorological Society 97(4):ES89-ES92
56. Simane B, BF Zaitchik and JD Foltz (2016) Agroecosystem specific climate vulnerability analysis: application of the livelihood vulnerability index to a tropical highland region. Mitig Adapt Strateg Glob Change. 21(1):39-65, DOI 10.1007/s11027-014-9568-1
55. Berhane F\*, BF Zaitchik, and HS Badr (2015) The Madden-Julian Oscillation's influence on Spring Rainy Season Precipitation over Equatorial West Africa. Journal of Climate 28(22):8653-8672, doi: <http://dx.doi.org/10.1175/JCLI-D-14-00510.1>

54. Urquhart EA\*, BF Zaitchik, SD Guikema, BJ Haley, E Taviani, A Chen, ME Brown, A Huq and RR Colwell (2015) Use of Environmental Parameters to Model Pathogenic Vibrios in Chesapeake Bay. *Journal of Environmental Informatics*, doi:10.3808/jei.201500307
53. Satti S\*, BF Zaitchik, and S Siddiqui (2015) The question of Sudan: a hydroeconomic optimization model for the Sudanese Blue Nile. *Hydrol. & Earth System Sci.* 19:2257–2293, doi:10.5194/hess-19-2275-2015
52. Badr HS\*, BF Zaitchik and AK Dezfuli (2015) A tool for hierarchical climate regionalization. *Earth Science Informatics* 8(4):949-958, DOI 10.1007/s12145-015-0221-7
51. Shortridge JE\*, SM Falconi, BF Zaitchik and SD Guikema (2015) Climate, agriculture, and hunger: statistical prediction of undernourishment using nonlinear regression and data-mining techniques. *Journal of Applied Statistics* 42(11): 2367-2390, DOI:10.1080/02664763.2015.1032216
50. Bhattacharjee P and BF Zaitchik (2015) Perspectives on CMIP5 model performance in the Nile River headwaters regions. *International Journal of Climatology* 35(14):4262-4275 DOI: 10.1002/joc.4284
49. Peters-Lidard, CD, EM Kemp, T Matsui, JA Santanello, Jr., SV Kumar, J Jacob, T Clune, W-K Tao, M Chin, A Hou, JL Case, D Kim, KM Kim, W Lau, Y Liu, J-J Shi, D Starr, Q Tan, Z Tao, B Zaitchik, B Zavodsky, S Zhang, M Zupanski (2015) Integrated Modeling of Aerosol, Cloud, Precipitation and Land Processes at Satellite-Resolved Scales with a Unified-Weather Research and Forecasting Model. *Environmental Modelling & Software*. doi: 10.1016/j.envsoft.2015.01.007.
48. Dezfuli AK, BF Zaitchik, A Gnanadesikan (2015) Regional atmospheric circulation and rainfall variability in South Equatorial Africa. *Journal of Climate* 28:809-818. doi: <http://dx.doi.org/10.1175/JCLI-D-14-00333.1>
47. Lawston PM, JA Santanello, BF Zaitchik, and M Rodell (2015) Impact of irrigation methods on land surface model spinup and initialization of WRF forecasts. *Journal of Hydrometeorology*. doi: <http://dx.doi.org/10.1175/JHM-D-14-0203.1>
46. Barlow M, BF Zaitchik, S Paz, E Black, JP Evans, and A Hoell (2015) A Review of Drought in the Middle East and Southwest Asia. *Journal of Climate*. doi: <http://dx.doi.org/10.1175/JCLI-D-13-00692.1>
45. Soneja SI\*, JM Tielsch, FC Curriero, B Zaitchik, SK Khattry, B Yan, SN Chillrud, and PN Breyse (2015) Determining Particulate Matter and Black Carbon Exfiltration Estimates For Traditional Cookstove Use In Rural Nepalese Village Households. *Environmental Science & Technology*. 49(9): 5555-5562.
44. Castanho CdT, CJ Lortie, B Zaitchik, and PI Prado (2015) A meta-analysis of plant facilitation in coastal dune systems: responses, regions, and research gaps. *PeerJ* 3:e768 <http://dx.doi.org/10.7717/peerj.768>

43. Anderson W\*, S Guikema, B Zaitchik and W Pan (2014) Methods for Estimating Population Density in Data-Limited Areas: Evaluating Regression and Tree-Based Models in Peru. *PLoS ONE* 9(7): e100037. doi:10.1371/journal.pone.0100037
42. Berhane F\* and BF Zaitchik (2014) Modulation of daily precipitation over East Africa by the Madden-Julian Oscillation. *Journal of Climate* 27(15): 6016-6034. doi: <http://dx.doi.org/10.1175/JCLI-D-13-00693.1>
41. Badr HS\*, BF Zaitchik, and SD Guikema (2014) Application of Statistical Models to Prediction of Seasonal Rainfall Anomalies over Sahel. *Journal of Applied Meteorology and Climatology*. 53(3): 614-636, doi:10.1175/JAMC-D-13-0181.1
40. Urquhart EA\*, BF Zaitchik, DW Waugh, SD Guikema, and CE Del Castillo (2014) Uncertainty in Model Predictions of *Vibrio vulnificus* Response to Climate Variability and Change: A Chesapeake Bay Case Study. *PLoS ONE* doi:10.1371/journal.pone.0098256
39. Simane B and BF Zaitchik (2014) The Sustainability of Community-Based Adaptation Projects in the Blue Nile Highlands of Ethiopia. *Sustainability* 6(7): 4308-4325. doi:10.3390/su6074308
38. Tadesse T, GB Demisse, BF Zaitchik, and T Dinku (2014) Satellite-based hybrid drought monitoring tool for prediction of vegetation condition in Eastern Africa: A case study for Ethiopia. *Water Res. Res.* 50: 2176-2190, doi:10.1002.2013WR014281.
37. Yilmaz, MT, MC Anderson, BF Zaitchik, CR Hain, WT Crow, M Ozdogan, JA Chun, and JP Evans (2014) Comparison of prognostic and diagnostic surface flux modeling approaches over the Nile River basin. *Water Res. Res.* 50: 386–408, doi:10.1002/2013WR014194.
36. Danysh H, RH Gilman, J Wells, W Pan, B Zaitchik, G Gonzalez, M Alvarez and W Checkley (2014) El Nino adversely affected childhood stature and lean mass in northern Peru. *Climate Change Responses* 2014, 1:7
35. Kent ST, LA McClure, BF Zaitchik, TT Smith, and JM Gohlke (2014) Heat Waves and Health Outcomes in Alabama (USA): The Importance of Heat Wave Definition. *Environ Health Perspect.* DOI:10.1289/ehp.1307262
34. Brown ME, AE Racoviteanu, DG Tarboton, A Sen Gupta, J Nigro, F Policelli, S Habib, M Tokay, MS Shrestha, S Bajracharya, P Hummel, M Grey, D Duda, B Zaitchik, V Mahat, G Artan, and S Tokar (2014) An integrated modeling system for estimating glacier and snow melt driven streamflow from remote sensing and earth system data products in the Himalayas. *J Hydrology*. 519B: 1859-1869. DOI: 10.1016/j.jhydrol.2014.09.050
33. Berhane F\*, BF Zaitchik and A Dezfuli (2014) Sub-seasonal analysis of precipitation variability in the Blue Nile River basin. *Journal of Climate*. 27: 325-344. <http://dx.doi.org/10.1175/JCLI-D-13-00094.1>

32. Zaitchik BF and N Levin (2013) Understanding the dynamics of Tropical African climate [workshop report]. EOS, Transactions of the American Geophysical Union. 94(23): 209
31. Urquhart EA\*, MJ Hoffman, RR Murphy and BF Zaitchik (2013) Geospatial Interpolation of MODIS-Derived Salinity and Temperature in the Chesapeake Bay. Remote Sensing of Environment. 135: 167-177
30. Zaitchik BF, JA Santanello, SV Kumar and CD Peters-Lidard (2013) Representation of soil moisture feedbacks during drought in NASA Unified WRF (NU-WRF). Journal of Hydrometeorology 14(1): 360-367; doi:10.1175/JHM-D-12-069.1
29. Brennan ME\* and BF Zaitchik (2013) On the potential for alternative greenhouse gas equivalence metrics to influence sectoral mitigation patterns. Environ. Res. Lett. 8: 014033
28. Simane B, BF Zaitchik and M Ozdogan (2013) Agroecosystem analysis of the Choke Mountain watersheds, Ethiopia. Sustainability 5(2): 592-616; doi:10.3390/su5020592
27. Smith TT\*, BF Zaitchik, and JM Gohlke (2013) Heat Waves in the United States: definitions, patterns and trends. Climatic Change. doi: 10.1007/s10584-012-0659-2
26. Valle D, B Zaitchik, B Feingold, K Spangler, and W Pan (2013) Abundance of water bodies is critical to guide mosquito larval control interventions and predict risk of mosquito-borne diseases. Parasites & vectors, 6(1): 179-180.
25. Kent, ST, LA McClure, BF Zaitchik, and JM Gohlke (2013) Area-level risk factors for adverse birth outcomes: trends in urban and rural settings. BMC Pregnancy & Childbirth 13:129; doi:10.1186/1471-2393-13-129
24. Cavieres, LA, RW Brooker, and 30 co-authors, including BF Zaitchik (2013) Facilitative plant interactions and climate simultaneously drive alpine plant diversity. Ecology Letters. doi: 10.1111/ele.12217
23. Butterfield, BJ, LA Cavieres and 24 co-authors, including BF Zaitchik (2013) Alpine cushion plants inhibit the loss of phylogenetic diversity in severe environments. Ecology Letters. doi: 10.1111/ele.12070
22. Anderson WB\*, BF Zaitchik, CR Hain, MC Anderson, MT Yilmaz, J Mecikalski, and L Schultz (2012) Towards an integrated soil moisture drought monitor for East Africa. Hydrology and Earth System Sciences 16: 2893-2913; doi:10.5194/hess-16-2893-2012
21. Zaitchik BF, B Simane, S Habib, MC Anderson, M Ozdogan, and JD Foltz (2012) Building Climate Resilience in the Blue Nile/Abay Highlands--A role for Earth System Sciences. Int. J. Env. Res. Pub. Health 9(2): 435-461; doi:10.3390/ijerph9020435
20. Simane B, BF Zaitchik and D Mesfin (2012) Building Climate Resilience in the Blue Nile/Abay Highlands--A framework for Action. Int. J. Env. Res. Pub. Health 9(2): 610-631; doi:10.3390/ijerph9020610

19. Urquhart E\*, BF Zaitchik, M Hoffman, S Guikema, and EF Geiger (2012) Remotely Sensed Estimates of Surface Salinity in the Chesapeake Bay. *Remote Sensing of Environment* 123: 522-531.
18. Li B, M Rodell, BF Zaitchik, RH Reichle, R Koster, and TM van Dam (2012) Assimilation of GRACE Terrestrial Water Storage into a Land Surface Model: Evaluation and Potential Value for Drought Monitoring in Western and Central Europe. *J. Hydrology*: <http://dx.doi.org/10.1016/j.jhydrol.2012.04.035>
17. Houbourg R, M Rodell, B Li, RH Reichle, and BF Zaitchik (2012) Drought Indicators Based on Model Assimilated GRACE Terrestrial Water Storage Observations. *Journal of Hydrometeorology* 48, W07525, doi:10.1029/2011WR011291
16. Zeng N, A King, BF Zaitchik, SD Wullschlegger, J Gregg, S Wang, D Kirk-Davidoff (2012) Ecological carbon sequestration via wood harvest and storage: An assessment of its practical harvest potential. *Climatic Change*, doi:10.1007/s10584-012-0624-0
15. Shemesh H, B Zaitchik, T Acuna, and A Novoplansky (2012) Architectural plasticity in a Mediterranean winter annual. *Plant Signaling and Behavior* 7(4)
14. Zaitchik BF, M Rodell, and F Olivera (2010) Evaluation of the Global Land Data Assimilation System using global river discharge data and a Source-to-Sink routing scheme. *Water Resources Research* 46, W06507, doi:10.1029/2009WR007811.
13. Zaitchik BF and M Rodell (2009) Forward-looking assimilation of MODIS-derived Snow Covered Area into a Land Surface Model. *Journal of Hydrometeorology* 10(1): 130-148.
12. Evans JP and BF Zaitchik (2008) Modeling the large scale water balance impact of different irrigation systems. *Water Resources Research* 44, W08448, doi:10.1029/2007WR006671.
11. Zaitchik BF, M Rodell, and RH Reichle (2008) Assimilation of GRACE terrestrial water storage data into a land surface model. *Journal of Hydrometeorology* 9:535-548
10. Zaitchik BF, JP Evans, and RB Smith (2007) Regional impact of an elevated heat source: the Zagros Plateau of Iran. *Journal of Climate* 20(16): 4133-4146
9. Zaitchik BF, JP Evans, RA Geerken, and RB Smith (2007) Climate and vegetation in the Middle East: inter-annual variability and drought feedbacks. *Journal of Climate* 20(15): 3924-3941
8. Hole F and BF Zaitchik (2007) Policies, plans, practices, and prospects: irrigation in northeastern Syria. *Land Degradation and Development* 18:DOI:10.1002/ldr.772
7. Zaitchik BF, AK Macalady, LR Bonneau, and RB Smith (2006) Europe's 2003 heatwave: a satellite view of impacts and land-atmosphere feedbacks. *International Journal of Climatology* 26:743-769

6. Geerken R, B Zaitchik, and JP Evans (2005) Classifying rangeland vegetation type and coverage from *NDVI* time series using Fourier Filtered Cycle Similarity. *International Journal of Remote Sensing* 26:5535-5554
5. Zaitchik BF, J Evans, and RB Smith (2005) MODIS-derived boundary conditions for MM5: application to irrigated agriculture in the Tigris-Euphrates Basin. *Monthly Weather Review* 133(6):1727-1743.
4. Zaitchik BF, HM van Es, and PJ Sullivan (2003) Modeling slope stability in Honduras: parameter sensitivity and scale of aggregation. *Soil Science Society of America Journal* 267:268-278.
3. Zaitchik BF and HM van Es (2003) Applying a GIS slope stability model to site-specific landslide prevention in Honduras. *Journal of Soil and Water Conservation* 58(1):45-53.
2. Zaitchik BF, LG LeRoux, and EA Kellogg (2000) Development of Male Flowers in *Zizania aquatica* (North American Wild-Rice; Gramineae). *International Journal of Plant Sciences* 161(3):345-351.
1. Spangler R, B Zaitchik, E Russo, and E Kellogg (1999) Andropogoneae evolution and generic limits in *Sorghum* (Poaceae) using *ndhF* sequences. *Systematic Botany* 24:267-281.

### **Book Chapters, Conference Papers & Popular Articles**

Zaitchik, B. F., Bazzana, D., Gebreyes, M., Simane, B., Siddiqui, S., Gilioli, G., & Mueller-Mahn, D. (2022). Multi-scale Challenges in the Food–Energy–Water Nexus. *Connecting the Sustainable Development Goals: The WEF Nexus: Understanding the Role of the WEF Nexus in the 2030 Agenda*, 71.

Lessler J., Azman A., Zaitchik B.F., & Moore S. (2017) How El Nino forecasts can prevent cholera deaths in Africa. *The Conversation*: <https://theconversation.com/how-el-nino-forecasts-can-help-prevent-cholera-deaths-in-africa-76926>

Zaitchik B (2017) *Climate and Health across Africa*. Oxford Research Encyclopedia of Climate Science. DOI: 10.1093/acrefore/9780190228620.013.555

Lee CM, A Serrat-Capdevila, N Iqbal, M Ashraf, B Zaitchik, J Bolten, F Melton and B Doorn (2016) Applying Earth Observations to Water Resources Challenges. In *Earth Science Satellite Applications* (pp. 147-171). Springer International Publishing.

Zaitchik BF, K O'Meara, K Baja, A Scott, D Waugh, and M McCormack (2016) B'more Cool: Monitoring the Urban Heat Island at High Density for Health and Urban Design. *Earthzine*. February 23, 2016: <http://earthzine.org/2016/02/23/bmore-cool-monitoring-the-urban-heat-island-at-high-density-for-health-and-urban-design/>

Zaitchik BF, BJ Feingold, D Valle, and WK Pan (2014) Integrating Earth Observations to Support Malaria Risk Monitoring in the Amazon. *Earthzine*. April 14, 2014: <http://www.earthzine.org/2014/04/14/integrating-earth-observations-to-support-malaria-risk-monitoring-in-the-amazon/>

Pan W, O Branch, and B Zaitchik (2014) Impact of Climate Change on Vector-Borne Disease in the Amazon, In: Global Climate Change and Public Health, Ed. KE Pinkerton and WN Rom. Springer, New York, pp. 193-210.

Foltz J, J Gars, M Özdoğan, B Simane and B Zaitchik (2013) Weather and Welfare in Ethiopia, In 2013 Annual Meeting, August 4-6, 2013, Washington, DC, No. 150298, Agricultural and Applied Economics Association.

Kempler S, GG Leptoukh, RK Kiang, RP Soebiyanto, DQ Tong, P Ceccato, S Maxwell, RG Rommel, GM Jacques, KK Benedict, SA Morain, P Yang, Q Huang, ML Golden, RS Chen, JE Pinzon, B Zaitchik, D Irwin, S Estes, J Luvall, M Wimberly, X Xiao, KM Charland, RP STumpf, Z Deng, CE Tilburg, Y Liu, L McClure, and A Huff (2013) Data discovery, access and retrieval, In: Environmental Tracking for Public Health Surveillance, Ed. SA Morain and AM Budge. Taylor & Francis Group, London, pp. 229-291.

Reichle RH, MG Bosilovich, WT Crow, RD Koster, SV Kumar, SPP Mahanama, and BF Zaitchik (2009) Recent Advances in Land Data Assimilation at the NASA Global Modeling and Assimilation Office, In: Data Assimilation for Atmospheric Oceanic and Hydrologic Applications, Ed. SK Park and X Liang, Springer, Heidelberg, pp. 407-428.

## Popular Feature Presentations

PopTech 2012: [http://poptech.org/popcasts/benjamin\\_zaitchiks\\_climate\\_science](http://poptech.org/popcasts/benjamin_zaitchiks_climate_science)

People Behind the Science, 2015: <http://www.peoplebehindthescience.com/dr-ben-zaitchik/>

## Selected Recent Presentations

Zaitchik BF (2022) From Forecasts to Services: Evolving Applications of the South and Southeast Asia Sub-seasonal to Seasonal Hydrological Forecasting System (SAHFS-S2S) (*Invited*). AGU Fall Meeting. Dec 15.

Zaitchik BF (2022) Pandemic + [X] (*Invited*). Hazard Mitigation and Resilience Applied Research Topics - Workshop 2: Compounding and Cascading Events. National Academy of Science. May 31.

Zaitchik BF (2021) Anticipating and addressing complex environmental hazards (*Invited*). Council of Scientific Society Presidents Winter Leadership Workshop. Dec 4.

Zaitchik BF (2021) When there's nothing personal (*Invited*). Virtual Workshop on Geospatial Needs for Environmental Justice. National Academy of Science. May 21.

Zaitchik BF, Sweijd N, and Shumake-Guillemot J (2021) Global collaboration to understand and forecast the environmental and meteorological sensitivities of COVID-19. 12<sup>th</sup> Conference on Environment and Health, American Meteorological Society Annual Meeting. January 12.

Zaitchik BF (2020) The Hydrology of Breaking Points (*Invited*). Geological Society of America Pardee Symposium. October 26.

Zaitchik BF (2020) Food, Health, and Security (*Invited*). Environmental Security Summit. September 16.

Zaitchik BF (2020) Water, Food, Energy, and Power in the Eastern Nile Basin (*Invited*). University of Pennsylvania. October 16. [also delivered at UMBC on Feb 5]

Zaitchik BF (2020) Meteorological sensitivities of COVID-19 (*Invited*). Indian Institute for Health Management Research. November 30.

Zaitchik BF (2020) Hydrometeorological sensitivities of COVID-19: challenges and opportunities for Earth Observation (*Invited*). Group on Earth Observations Annual Symposium. June 15.

Zaitchik BF (2019) GRACE-Informed Seasonal Forecasts of Hydrologic Extremes. ASPRS Pecora 21 / ISRSE 38. October 8. Baltimore MD

Zaitchik BF (2019) Multi-Scale Food Security Challenges in a Changing Climate. Mailman School of Public Health, Columbia University. February 5. New York, NY.

Zaitchik BF (2019) Integrating Climate Information Across Multiple Scales. International Research Institute for Climate and Society, Columbia University. February 6. Palisades, NY.

Zaitchik BF (2019) Applying climate information across spatial and temporal scales. George Mason University. April 9.

Zaitchik BF (2019) Remote sensing for water budget monitoring: the Nile river basin. NASA ARSET. March 5.

Zaitchik BF (2018) Invited Panelist: Union Session 31A—How Science Influences Action: Responding to Climate Change in Developing Countries. AGU Fall Meeting. December 10-14. Washington, DC.

Zaitchik BF (2018) A Malaria Early Warning System for the Western Amazon. 2018 Vector-borne and Water-borne Disease Workshop. May 17. Washington DC.

### **Professional and Public Service**

Co-Chair, Johns Hopkins University Sustainability Plan	2021-
Co-Chair, WHO COVID-19 Research Task Team	2020-
President, GeoHealth Section, American Geophysical Union	2021-
President-Elect, GeoHealth Section, American Geophysical Union	2020

Satellite geodetic data assimilation for hydro-climate research working group, Inter-Commission Committee on Geodesy for Climate Research	2020-
Science Advisor, AGU Eos	2019-2021
Chair, Heat Working Group, GEO Health Community of Practice	2018-
Commissioner, Sustainability Commission, City of Baltimore	2017-
Associate Editor, Journal of Hydrometeorology	2017-
Member, NASA-RFF VALUABLES Scientific Council	2017-
Chair, Science Committee, WMO Symposium on Climatological, Meteorological, and Environmental Factors in the COVID-19 Pandemic	2020
Secretary, GeoHealth Section, American Geophysical Union	2017-2019
United States Representative to the GEWEX Hydroclimatology Panel (HCP)	2015-2018
National Research Council (NRC) Committee to Review the Draft Interagency Report on the Impacts of Climate Change on Human Health in the United States	2015
Expert Panel on Future Gravity Satellite Missions , IUGG	2013-2015
<b>Awards and Honors</b>	
AMA Editor's Award, Journal of Hydrometeorology	2017
PopTech Science Fellow	2012
NCAR Early Career Scientist Symposium Invited Participant	2011
Superior Honor Award U.S. State Department	2010
Meritorious Service Award U.S. State Department	2009
Peer award for outstanding Research Associate NASA Goddard Space Flight Center	2007
DISCCRS III (Dissertation Initiative for the Advancement of Climate Change Research) – invited participant	2007
NCAR Climate and Global Change Post-doctoral Fellowship	2006

(fellowship was declined in favor of other opportunities)

Elias Loomis Prize for excellence in studies of physics of the earth  
Yale University 2004

Outstanding Student Paper Award in Hydrology  
American Geophysical Union 2003

NSF Graduate Student Fellowship 1999

Hoopes Prize for Outstanding Undergraduate Research Thesis, Harvard University 1998