

# Rubayet Bin Mostafiz

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## EDUCATION

### **Ph.D. in Oceanography & Coastal Sciences, 8/2022**

#### **Minor in Geography**

Dissertation: *Estimation of Economic Risk from Coastal Natural Hazards in Louisiana*

Louisiana State University, Baton Rouge

### **GIS Graduate Certificate Program, 5/2022**

Louisiana State University, Baton Rouge

### **Master of Economics for Professionals, 7/2017**

Thesis: Sustainable Development Goals of Bangladesh and Role of Bangladesh Bank: A Descriptive Study

University of Dhaka, Bangladesh.

### **M.S. in Geography & Environment, 12/2008**

Thesis: *Salinity Intrusion and Changes in Fisheries and Agricultural Environment in Southwestern Bangladesh*

University of Dhaka, Bangladesh

### **B.S. in Geography & Environment, 6/2007**

Project: *Bangladesh: Enclaves, a Geographical Analysis – A Case Study on Dahgram and Angarpota*

University of Dhaka, Bangladesh

## PROFESSIONAL EXPERIENCE

### **Louisiana State University AgCenter, Baton Rouge, Louisiana**

Assistant Professor – Research, 7/2023 – Present

### **Louisiana State University AgCenter, Baton Rouge, Louisiana**

Postdoctoral Researcher, 9/2022 – 7/2023

### **Louisiana State University, Baton Rouge, Louisiana**

U.S. Army Corps of Engineers Research and Development Center (ERDC)-funded research assistantship: Developing Engineering practices for Ecosystem Design Solutions (DEEDS): Calibrating Ecosystem Services to Advance Performance of Natural Infrastructure in Military Operations, 7/2022 – 8/2022

Louisiana SeaGrant Omnibus-funded research assistantship: Economic, Social, and Policy Pathways to Freeboard Adoption for Existing Homes, 2/2022 – 8/2022

Louisiana SeaGrant Omnibus-funded research assistantship: Incentives and Barriers to Increased Freeboard to Enhance Flood Resilience: Louisiana Perspectives, 2/2020 – 8/2022

National Academies of Science-funded research assistantship: The New First Line of Defense: Building Community Resilience through Residential Risk Disclosure, 1/2020 – 8/2022

Department of Housing and Urban Development-funded research assistantship: Building Level Mitigation Cost-Effectiveness Analysis: Louisiana Case Study, 1/2020 – 8/2022

Graduate Teaching Assistantship, Department of Oceanography & Coastal Sciences, 8/2019 – 12/2019

Graduate Research Assistantship, Department of Environmental Sciences, 5/2019 – 8/2019

Graduate Research Assistantship, Department of Oceanography & Coastal Sciences, 1/2019 – 5/2019

Graduate Research Assistantship, Bert S. Turner Department of Construction Management, 8/2018 – 12/2018

FEMA-funded Research Assistantship: 2019 Louisiana State Hazard Mitigation Plan Update (SHMPU), 8/2017 – 8/2018

### **Bangladesh Bank, Dhaka, Bangladesh**

Foreign Exchange Investment Department, Deputy Director, 11/2016 – 8/2017

Foreign Exchange Investment Department, Assistant Director, 7/2013 – 10/2016

### **Data Experts (Pvt) Limited (datEx), Dhaka, Bangladesh**

KDA Master Plan, Assistant GIS Specialist, 11/2011 – 7/2013

**Bangladesh Asiatic Society**, Dhaka, Bangladesh

Dhaka A to Z: Street Atlas, Project Coordinator and GIS Analyst, 11/2009 – 10/2011

**Geographical Solutions Research Center (GSRC)**, Dhaka, Bangladesh

Survey and Mapping of Kamlapur Urban Surveillance Site, GIS Analyst and Trainer, 3/2008 – 10/2009

## REFEREED PUBLICATIONS

- Rahim, M.A.\*, Al Assi, A., **Mostafiz, R.B.**, and Friedland, C.J. (2024). Effects of damage initiation points of depth-damage function on flood risk assessment. Accepted at npj *Natural Hazards*.
- Al Assi, A., **Mostafiz, R.B.**, Friedland, C.J., and Rohli, R.V. (2024). Theoretical boundaries of annual flood risk for single-family homes within the 100-year floodplain. *International Journal of Environmental Research*, 18, Art. No. 29. doi: 10.1007/s41742-024-00577-7
- Rahim, M.A., Rohli, R.V., **Mostafiz, R.B.**, Bushra, N., and Friedland, C.J. (2024). Historical global and regional spatiotemporal patterns in daily temperature. *Frontiers in Environmental Science*, 11, Art. No. 1294456. doi: 10.3389/fenvs.2023.1294456
- Gnan, E., **Mostafiz R.B.\***, Rahim, M.A., Friedland, C.J., Rohli, R.V., Taghinezhad, A., and Al Assi, A. (2024). Freeboard life-cycle benefit-cost analysis of a rental single-family residence for landlord, tenant, and insurer. *Frontiers in Climate*, 5, Art. No. 1295592. doi: 10.3389/fclim.2023.1295592
- Friedland, C.J., Orooji, F., Al Assi, A., Flynn, M. L., and **Mostafiz, R.B.** (2023). Flood damage and shutdown times for industrial process facilities: A vulnerability assessment process framework. *Frontiers in Water*, 11, Art. No. 1292564. doi: 10.3389/frwa.2023.1292564
- Rahim, M.A., Friedland, C.J., **Mostafiz, R.B.**, Rohli, R.V., and Bushra, N. (2023). Analytical advances in homeowner flood risk quantification considering insurance, building replacement value, and freeboard. *Frontiers in Environmental Science*, 11, Art. No. 1180942. doi: 10.3389/fenvs.2023.1180942
- Kodavatiganti, Y., Friedland, C.J., Rahim, M.A., **Mostafiz R.B.**, Taghinezhad, A., and Heil, S. (2023). Material quantities and estimated construction costs for new elevated IRC 2015-compliant single-family home foundations. *Frontiers in Built Environment*, 9, Art. No. 1111563. doi: 10.3389/fbuil.2023.1111563
- Al Assi, A., **Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., and Rahim, M.A. (2023). Homeowner flood risk and risk reduction from home elevation between the 100- and 500-year floodplains. *Frontiers in Earth Science*, 11, Art. No. 1051546. doi: 10.3389/feart.2023.1051546
- Friedland, C.J., Lee, Y.C., **Mostafiz, R.B.**, Lee, J., Mithila, S., Rohli, R.V., Rahim, M.A., and Gnan, E. (2023). FloodSafeHome: Evaluating benefits and savings of freeboard for improved decision-making in flood risk mitigation. *Frontiers in Communication*, 8, Art. No. 1060901. doi: 10.3389/fcomm.2023.1060901
- Al Assi, A., **Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., Taghinezhad, A., and Rahim, M.A. (2023). Cost-effectiveness of federal CDBG-DR Road Home Program mitigation assistance in Jefferson Parish, Louisiana. *Natural Hazards*. doi: 10.1007/s11069-023-05904-3
- Bushra, N., Rohli, R.V., Li, C., Miller, P.W., and **Mostafiz R.B.** (2023). Changing features of the Northern Hemisphere 500-hPa circumpolar vortex. *Frontiers in Big Data*, 5, Art. No. 1009158. doi: 10.3389/fdata.2022.1009158
- Al Assi, A., **Mostafiz, R.B.**, Friedland, C.J., Rahim, M.A., and Rohli, R.V. (2023). Flood risk assessment for residences at the neighborhood scale by owner/occupant type and first-floor height. *Frontiers in Big Data*, 5, Art. No. 997447. doi: 10.3389/fdata.2022.997447
- Mostafiz, R.B.**, Rahim, M.A., Friedland, C.J., Rohli, R.V., Bushra, B., and Orooji, F. (2022). A data-driven spatial approach to characterize the flood hazard. *Frontiers in Big Data*, 5, Art. No. 1022900. doi: 10.3389/fdata.2022.1022900
- Mostafiz, R.B.**, Rohli, R.V., Friedland, C.J., Gall, M., and Bushra, N. (2022). Future crop risk estimation due to drought, extreme temperature, hail, lightning, and tornado at the census tract level in Louisiana. *Frontiers in Environmental Science*, 10, Art. No. 919782. doi: 10.3389/fenvs.2022.919782
- Gnan, E., Friedland, C.J., **Mostafiz R.B.\***, Rahim, M.A., Gentimis, T., Taghinezhad, A., and Rohli, R.V. (2022). Economically optimizing elevation of new, single-family residences for flood mitigation via life-cycle benefit-cost analysis. *Frontiers in Environmental Science*, 10, Art. No. 889239. doi: 10.3389/fenvs.2022.889239

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- Gnan, E., Friedland, C.J., Rahim, M.A., **Mostafiz R.B.**, Rohli, R.V., Orooji, F., Taghinezhad, A., and McElwee, J. (2022). Improved building-specific flood risk assessment and implications of depth-damage function selection. *Frontiers in Water*, 4, Art. No. 919726. doi: 10.3389/frwa.2022.919726
- Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., and Bushra, N. (2022). Future property risk estimation for wildfire in Louisiana, USA. *Climate*, 10(4), Art. No. 49. doi: 10.3390/cli10040049
- Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., and Lee, Y.C. (2022). Actionable information in flood risk communications and the potential for new web-based tools for long-term planning for individuals and community. *Frontiers in Earth Science*, 10, Art. No. 840250. doi: 10.3389/feart.2022.840250
- Mostafiz, R.B.**, Bushra, N., Rohli, R.V., Friedland, C.J., and Rahim, M.A. (2021). Present vs. future property losses from a 100-year coastal flood: A case study of Grand Isle, Louisiana. *Frontiers in Water*, 3, Art. No. 763358. doi: 10.3389/frwa.2021.763358
- Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., and Bushra, N. (2021). Property risk assessment of sinkhole hazard in Louisiana, U.S.A. *Frontiers in Environmental Science*, 9, Art. No. 780870. doi: 10.3389/fenvs.2021.780870
- Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., Bushra, N., and Held, C.L. (2021). Property risk assessment for expansive soils in Louisiana. *Frontiers in Built Environment*, 7, Art. No. 754761. doi: 10.3389/fbuil.2021.754761
- Mostafiz, R.B.**, Friedland, C.J., Rahman, M.A., Rohli, R.V., Tate, E., Bushra, N., and Taghinezhad, A. (2021). Comparison of neighborhood-scale, residential property flood-loss assessment methodologies. *Frontiers in Environmental Science*, 9, Art. No. 734294. doi: 10.3389/fenvs.2021.734294
- Bushra, N., **Mostafiz, R.B.**, Rohli, R.V., Friedland, C.J., and Rahim, M.A. (2021). Technical and social approaches to study shoreline change of Kualkata, Bangladesh. *Frontiers in Marine Science*, 8, Art. No. 730984. doi: 10.3389/fmars.2021.730984
- Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., Gall, M., Bushra, N., & Gilliland, J.M. (2020). Census-block-level property risk estimation due to extreme cold temperature, hail, lightning, and tornadoes in Louisiana, United States. *Frontiers in Earth Science*, 8, Art. No. 601624. doi: 10.3389/feart.2020.601624
- Bushra, N., Rohli, R.V., Lam, N.S., Zou, L., **Mostafiz, R.B.**, & Mihunov, V. (2019). The relationship between the Normalized Difference Vegetation Index and drought indices in the south-central United States. *Natural Hazards*, 96, 791-808. doi: 10.1007/s11069-019-03569-5

### Submitted or in Preparation

- Ishmam, Z.S.\*, Rohli, R.V., and **Mostafiz, R.B.** (2024). Exploring the spatiotemporal trends of extreme precipitation indices for the continental United States. In review at *Physical Geography* since 2/18/2024.
- Bushra, N.\*, Rahim, M.A., **Mostafiz, R.B.**, and Rohli, R.V. (2024). Increasing trend in duration of temperatures above the daily mean temperature over the terrestrial Earth. In review at *Environmental Research Communications* since 03/18/2024.
- Al Assi, A.\*, **Mostafiz, R.B.**, Orooji, F., Taghinezhad, A., Gall, M., Rohli, R.V., Emrich, C., Friedland, C.J., and Johnson, E. (2023). Wind risk and mitigation calculator framework for determining the wind annualized risk for single- and multi-family homes to support resilient community decision-making. In review at *International Journal of Disaster Risk Science* since 12/12/2023.
- Mostafiz, R.B.**, Al Assi, A.\*, Taghinezhad, A., Friedland, C.J., Emrich, C., Gall, M., Rohli, R.V., Rahim, M.A., and Johnson, E. (2023). Flood risk and mitigation calculator tool to support residents and decision-makers to make communities more resilient. In review at *Journal of Risk Research* since 10/25/2023.
- Christiansen, K., **Mostafiz, R.B.**, Al Assi, A., Rohli, R.V., and Friedland, C.J. (2023). Financial impacts of 2020 Oregon Labor Day fires. In review at *PLOS Climate* since 12/19/2023.
- Christiansen, K., **Mostafiz, R.B.**\*, Al Assi, A., Friedland, C.J., Rohli, R.V., and Dunn, C. (2023). Physical impact of 2020 Labor Day fires to Oregon highways. In review at *Frontiers in Climate* since 01/02/2024.
- Rahim, M.A.\*, **Mostafiz, R.B.**, and Friedland, C.J. (2023). Quantification of flood risk reduction through nature-based solutions. In review at *Scientific Reports* since 07/28/2023.
- Lopa, M.\*, Jahan, N., Rohli, R.V., **Mostafiz, R.B.**, and Friedland, C.J. (2023). Evapotranspiration modelling in resource-constrained regions with machine learning and remote sensing. In review at *Information Processing in Agriculture* since 08/23/2023.
- Deria, A., **Mostafiz, R.B.**, Lee, Y.C.\*, and Friedland, C.J. (2023). Implications of new freeboard policy for homeowners on different income groups. In review at *Mitigation and Adaptation Strategies for Global Change* since 02/19/2024.

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- Adams, S., Al Assi, **Mostafiz, R.B.**, Rahim, M.A., Friedland, C.J., Pace, R.K., and Rohli, R.V. (2023). Appraisal of freeboard for a single-family residence in United States. In preparation for submission to *Nature Communications*.
- Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., and Knight, E.M. (2023). Risk assessment of dam failure in Louisiana, U.S.A. In preparation for submission to *Frontiers in Water*.

## Reports

Governor's Office of Homeland Security and Emergency Preparedness, Louisiana State Hazard Mitigation Plan: 2019 Update. Available at: <http://gohsep.la.gov/Portals/0/Documents/Mitigate/HMPlan/2019HM-plan-final.pdf>, 432 pp.

## PROFESSIONAL CONFERENCES

\* Presenting author

- Rahim, M.\* , Friedland, C.J., Gandikota, S., and **Mostafiz, R.B.** (2024). Dynamic geographical risk assessment tool for FEMA Risk Rating 2.0 premium calculation. *American Geophysical Union Fall Meeting*, San Francisco, CA, January 25.
- Rohli, R.V.\* , Rahim, M.A., **Mostafiz, R.B.**, Bushra, N., and Friedland, C.J. (2024). Spatiotemporal patterns in the number of hours exceeding the mean temperature for that day, across the terrestrial earth. *American Geophysical Union Fall Meeting*, San Francisco, CA, January 24.
- Al Assi, A.\* , **Mostafiz, R.B.**, Friedland, C.J., Emrich, C.T., and Gall, M. (2024). Wind risk and mitigation calculator framework for determining the wind annualized risk for single- and multi-family homes to support resilient community decision-making. *American Geophysical Union Fall Meeting*, San Francisco, CA, January 22.
- Mostafiz, R.B.\***, Lee, J., Mithila, S.P., Rahim, M.A., Garcia, A., Friedland, C.J., Rohli, R.V., and Lee, Y.-C. (2023). Enhancing flood damage mitigation and resilience in Louisiana's coastal parishes through geospatial decision support. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 15.
- Hasan, F.\* , **Mostafiz, R.B.**, Rohli, R.V., and Friedland, C.J. (2023). Flood inundation mapping and effects of floods on land use land cover map for different return periods: A case study of Sarishabari Upazila, Bangladesh. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 14.
- Rohli, R.V.\* , **Mostafiz, R.B.**, Rahim, M.A., Mithila, S.P., Conger, S., and Friedland, C.J. (2023). Drought webtool: Development of the drought irrigation response tool using the representational state transfer application programming interface. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 13.
- Hasan, F.\* , **Mostafiz, R.B.**, Rohli, R.V., and Friedland, C.J. (2023). Accuracy assessment of National Land Cover Database (NLCD) 2019, Environmental Systems Research Institute (ESRI) 2020, and European Space Agency (ESA) 2020 land use land cover (LULC) maps for East Baton Rouge Parish, Louisiana, using geospatial techniques. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 12.
- Ishmam, Z.S.\* , Rohli, R.V., **Mostafiz, R.B.**, and Friedland, C.J. (2023). Extreme rainfall trends in the United States of America. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 12.
- Ishmam, Z.S.\* , Rohli, R.V., **Mostafiz, R.B.**, and Friedland, C.J. (2023). Water budget estimation of the Ganges-Brahmaputra Basin using remote sensing and land data assimilation system. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 12.
- Lopa, M.\* , **Mostafiz, R.B.**, Rohli, R.V., Jahan, N., and Friedland, C.J. (2023). Quantifying actual evapotranspiration in Bangladesh: A comparative analysis of methods. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 12.
- Lopa, M.\* , **Mostafiz, R.B.**, Rohli, R.V., Jahan, N., and Friedland, C.J. (2023). Louisiana population dynamics and migration patterns: Impacts of hurricanes and land use change. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 12.
- Mostafiz, R.B.\***, Al Assi, A., Friedland, C.J., Rahim, M.A., Rohli, R.V., Emrich, C.T., and Gall, M. (2023). Empowering resilient communities: The flood risk and mitigation calculator tool for informed decision-making. *American Geophysical Union Fall Meeting*, San Francisco, CA, December 12.
- Adams, S.\* , Al Assi, A., **Mostafiz R.B.**, Rahim, M.A., & Friedland, C.J. (2023). Residential flood-resistant construction appraisal addendum: Framework, case study findings and path forward. *ASCE INSPIRE 2023 Conference*, Arlington, Virginia, Nov. 16-18.
- Conger, S.\* , Rohli, R.V., Rahim, M.A., Friedland, C.J., Mithila, S., Mostafiz, R.B., and Franks, M. (2023). Modeling evapotranspiration for extension and outreach via the drought irrigation resilience tool (DIRT). *2nd Global Evapotranspiration Symposium: Advances, Challenges, and Future Needs in Measurements, Modeling, and Applications*, Pennsylvania State University, Pennsylvania, October 24.

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- Lee, J. \*, **Mostafiz, R.B.**, Mithila, S., Rahim, M.A., Garcia, A., Lee, Y., Rohli R.V., and Friedland C.J. (2023). FloodSafeHome: Empowering geospatial decision support tool for flood management and freeboard optimization. *I-GUIDE Forum 2023*, Columbia University, New York City, October 5.
- Friedland, C.J. \*, Al Assi, A., **Mostafiz, R.B.**, Rahim, M.A., and Rohli, R.V. (2023). Benefits and costs of flood- and wind-resilient home construction and retrofit. *Extension Disaster Education Network (EDEN) Conference 2023*, Savannah, GA, September 27.
- Al Assi, A. \*, **Mostafiz R.B.**, Friedland, C.J. (2023). Cost-effectiveness of wind mitigation strategies. *20<sup>th</sup> Annual meeting of Asia Oceania Geosciences Society (AOGS)*, Singapore, July 30 – August 4.
- Deria, A., Lee, Y.C., **Mostafiz, R.B.**, and Friedland, C.J. (2023). Measuring disparity in flood risk and freeboard benefits for different income groups. Conference paper in *i3CE 2023: 2023 ASCE International Conference on Computing in Civil Engineering*. Corvallis, OR, United States, June 25-28.
- Mostafiz, R.B.** \*, Friedland, C.J., Ishmam, Z.S., Lopa, M., Al Assi, A., and Rahim, M.A. (2023). Design 500-, 700-, and 1700-year coastal flood elevations beyond code requirements: A case study of Gulf Coast, United States. *Japan Geoscience Union Meeting 2023*, Chiba, Japan, May 21–26.
- Al Assi, A. \*, **Mostafiz, R.B.**, Friedland, C.J., and Rahim, M.A. (2023). Flood and wind risk in the United States: Evaluating the effectiveness of combined freeboard and FORTIFIED. *Japan Geoscience Union Meeting 2023*, Chiba, Japan, May 21–26.
- Mostafiz, R.B.** \*, Al Assi, A., Rahim, M.A., and Friedland, C.J. (2023). Appraisal of freeboard for a single-family residence in United States. *European Geophysical Union General Assembly*, Vienna, Austria, April 24
- Rahim, M.A. \*, **Mostafiz, R.B.**, and Friedland, C.J. (2023). Disseminating flood risk information in the USA through Risk Rating 2.0. *European Geophysical Union General Assembly*, Vienna, Austria, April 26.
- Al Assi, A. \*, **Mostafiz R.B.**, Friedland, C.J., Rohli, R.V., & Rahim, M.A. (2023). Flood risk assessment for single-family home in A Zone. *European Geophysical Union General Assembly*, Vienna, Austria, April 27.
- Friedland, C.J. \*, Al Assi, A., Emrich, C., Farris, M., Gall, M., Gnan, E., Jenkins, P., Lee, J., Lee, Y.C., Mithila, S., **Mostafiz, R.B.**, Orooji, F., Rahim, M.A., Rohli, R.V., Savio, R.D., Taghinezhad, A., and Tao, H. (2023). Homeowner Risk Disclosure for Resilient Communities. *3rd Annual Disaster PRIMR Conference*, Prairie View, TX, March 7.
- Lee, J., Friedland, C., Rohli, R.V., Lee, Y., Rahim, M.A., and **Mostafiz, R.B.** (2023). Flood Safe Home. *Louisiana Fisheries Forward Summit 2023*, Pontchartrain Center, Kenner, LA, March 1.
- Mostafiz R.B.** \*, Friedland, C.J., Gnan, E., Rahim, M.A., and Rohli, R.V. (2022). Freeboard life-cycle benefit-cost analysis of a rental single-family residence. Presented virtually at *American Geophysical Union Fall Meeting*, Chicago, Illinois, December 16.
- Rohli, R.V., Rahim, M.A., **Mostafiz, R.B.**, Bushra, N., and Friedland, C.J. (2022). Historical global and regional spatiotemporal patterns in daily surface air temperature. Poster presented virtually at *American Geophysical Union Fall Meeting*, Chicago, Illinois, December 16.
- Mostafiz, R.B.** \*, Rahim, M.A., Friedland, C.J., and Rohli, R.V. (2022). A data-driven spatial approach to characterize flood hazard. Poster presented virtually at *American Geophysical Union Fall Meeting*, Chicago, Illinois, December 15.
- Rahim, M.A. \*, **Mostafiz, R.B.**, Friedland, C.J., and Rohli, R.V. (2022). New insights into damage initiation point of depth-damage function revealed from flood risk patterns in the United States. Poster presented virtually at *American Geophysical Union Fall Meeting*, Chicago, Illinois, December 15.
- Rahim, M.A. \*, Friedland, C.J., Twilley, R.R., Rohli, R.V., and **Mostafiz, R.B.** (2022). Reduction in flood risk to residential housing expected from wave and surge reduction by mangroves. Poster presented virtually at *American Geophysical Union Fall Meeting*, Chicago, Illinois, December 13.
- Friedland, C.J., **Mostafiz, R.B.**, Rahim, M.A., Al Assi, A., Rohli, R.V., Farris, M. (2022). Flood hazard mitigation education: A homeowner freeboard decision support webtool. *2022 LSU & SU AgCenter's Joint Annual Conference*, Baton Rouge, Louisiana, December 13.
- Al Assi, A. \*, Friedland, C.J., Rohli, R.V., and **Mostafiz, R.B.** (2022). Homeowner flood risk in the shaded X Zone in the United States. Poster presented virtually at *American Geophysical Union Fall Meeting*, Chicago, Illinois, December 12.
- Rahim, M.A. \*, Friedland, C., Twilley, R.R., Rohli, R.V., and **Mostafiz, R.B.** (2022). Reduction in flood risk to residential housing expected from wave and surge reduction by mangroves. Poster presented at *U.S. Army Engineer Research and Development Center (ERDC)*, Vicksburg, MS, September 12.

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- Friedland, C.\* , Farris, M., Lee, Y.C., Rohli, R.V., Jenkins, P., Tao, H., **Mostafiz, R.B.**, Taghinezhad A., Mithila, S., Lee, J., Gnan, E., and Rahim, M.A. (2022). Flood risk communication for new construction hazard mitigation. Presented virtually at *2022 Natural Hazards Workshop Researchers' Meeting*, July 14.
- Mostafiz, R.B.\***, Gnan, E., Friedland, C.J., Rohli, R.V., and Rahim, M.A. (2022). Life cycle benefit cost analysis of optimizing freeboard of new, single-family residences for flood hazard mitigation. *Japan Geoscience Union Meeting*, Chiba, Japan, May 22-27.
- Al Assi, A.\* , **Mostafiz, R.B.**, Friedland, C.J., Rohli, R.V., and Rahim, M.A. (2022). Evaluating the cost-effectiveness of federal awards for flood mitigation at the individual building level in Jefferson Parish, Louisiana. *AGU Frontiers in Hydrology Meeting*, San Juan, Puerto Rico, June 21.
- Mostafiz, R.B.\***, Al Assi, A., Friedland, C.J., Rohli, R.V., and Rahim, M.A. (2022). A numerically-integrated approach for residential flood loss estimation at the community level. *European Geophysical Union General Assembly*, Vienna, Austria, May 23.
- Rahim, M.A.\* , Gnan, E., Friedland, C.J., **Mostafiz, R.B.**, and Rohli, R.V. (2022). An improved micro scale average annual flood loss implementation approach. *European Geophysical Union General Assembly*, Vienna, Austria, May 23.
- Mostafiz, R.B.\***, Friedland, C.J., Rahim, M.A., Rohli, R.V., and Bushra, N. (2021). A data-driven, probabilistic, multiple return period method of flood depth estimation. Poster presented virtually at *American Geophysical Union Fall Meeting*, New Orleans, Louisiana, December 15.
- Mostafiz, R.B.\***, Bushra, N., Friedland, C.J., and Rohli, R.V. (2021). Present vs. future losses from a 100-year flood: A case study of Grand Isle, Louisiana. Poster presented virtually at *American Geophysical Union Fall Meeting*, New Orleans, Louisiana, December 13.
- Rahim, M.A.\* , Friedland, C.J., Rohli, R.V., Bushra, N., and **Mostafiz, R.B.** (2021). A data-intensive approach to allocating owner vs. NFIP portion of average annual flood losses. Poster presented virtually at *American Geophysical Union Fall Meeting*, New Orleans, Louisiana, December 15.
- Mostafiz, R.B.\***, Mithila, S., Lee, J., Lee, Y.C., Friedland C.J., Gnan, E., Rohli R.V., Farris, M., Taghinezhad, A., Jenkins, P., and Tao, H. (2021). Communicating the value of freeboard through a decision-making tool for new home construction in Louisiana. Abstract published in proceedings of *Eighth International Conference on Flood Management (ICFM8)*, Iowa City, IA, August 9-11.
- Bushra, N.\* and **Mostafiz, R.B.** (2021). A comprehensive risk assessment at individual building levels for future flood occurrence at the coast of Louisiana, USA. Abstract published in proceedings of *Eighth International Conference on Flood Management (ICFM8)*, Iowa City, IA, August 9-11.
- Tao, H.\* , Farris, M., Jenkins, P., Friedland C.J., Rohli R.V., Lee, Y.C., Taghinezhad, A., Mithila, S., Lee, J., **Mostafiz, R.B.\***, Gnan, E., and Rahim, M.A. (2021). Incentives and barriers to increased freeboard to enhance flood resilience with FloodSafeHome. *2021 EPA Region 6 Stormwater Conference*, New Orleans, LA, August 8-12.
- Mostafiz, R.B.\***, Mithila, S.P., Lee, J., Gnan, E., Tao, H., Lee, Y.C., Friedland, C.J., Rohli, R.V., Farris, M., and Jenkins, P. (2021). Reduction in housing cost through freeboard: A flood risk webtool for homeowners. Poster presented at *State of the Coast Conference*, virtual, June 3.
- Lee, J.\* , Mithila, S., **Mostafiz, R.B.**, Lee, Y., Friedland C.J., Gnan, E., Rohli R.V., Farris, M., Taghinezhad, A., Jenkins, P., and Tao, H. (2021). "Flood Safe Home": A web-based interactive decision-making tool for optimal freeboard recommendations to enhance flood resilience. *American Association of Geographers Annual Meeting*, Seattle, WA, April 9.
- Mostafiz, R.B.\***, Friedland C.J., Rahman, M.A., Rohli R.V., Tale, E., Bushra, N., and Taghinezhad, A. (2021). Comparison of flood loss assessment methodologies at the neighborhood scale. *American Association of Geographers Annual Meeting*, Seattle, WA, April 8.
- Bushra, N.\* and **Mostafiz, R.B.** (2021). A comprehensive approach to identify shoreline change: A study of Kuakata, Bangladesh. *Disaster PRIMR*, Virtual, February 4.
- Mostafiz R.B.\***, Friedland C.J., Rohli R.V., and Bushra, N. (2020). Assessing property loss in Louisiana, U.S.A., to natural hazards incorporating future projected conditions. *American Geophysical Union Annual Meeting*, Virtual, December 9.
- Mostafiz, R.B.\***, Friedland, C.J., and Rohli, R.V. (2020). Future crop risk estimation due to natural hazards at the census tract level in Louisiana, U.S.A. *Southwest Division of the American Association of Geographers Annual Meeting*, Virtual, November 18.

## Rubayet Bin Mostafiz

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- Mostafiz, R.B.\*** and Bushra, N. (2020). Census-tract-level crop risk estimation due to drought, extreme cold temperature, extreme heat, hail, lightning, and tornadoes in Louisiana, U.S.A. *Applied Geography Conference Annual Meeting*, Virtual, October 19.
- Bushra, N.\* and **Mostafiz, R.B.** (2020). Temperature variability in the south-central United States and relationship to atmospheric teleconnections. *Applied Geography Conference Annual Meeting*, Virtual, October 20.
- Friedland, C., Farris, M., Jenkins, P., Lee, Y., Rohli, R.V., Taghinezhad, A., Gnan, E., **Mostafiz, R.B.**, and Tao, H. (2020). Incentives and barriers to increased freeboard to enhance flood resilience: Louisiana perspectives, research and practice highlights. *45th Annual Natural Hazards Research and Applications Workshop*, Virtual, July 12-15.
- Gnan, E.S.\*, Friedland, C.J., Farris, M., Rohli, R.V., Lee, Y., Taghinezhad, A., **Mostafiz, R.B.**, and Kodavatiganti, Y. (2020). Flood hazard risk assessment. *Louisiana Fisheries Forward Summit*, Kenner, LA, March 11.
- Mostafiz, R.B.\***, Friedland, C.J., Rohli, R.V., Gall, M., and Gilliland, J.M. (2019). Assessing risk of atmospheric natural hazards at the census block level. *American Association of Geographers Annual Meeting*, Washington, DC, April 5.
- Mostafiz, R.B.\***, Friedland C.J., and Rohli, R.V. (2018). Risk assessment of extreme temperature and drought events in Louisiana. *34<sup>th</sup> Annual Louisiana Remote Sensing & GIS Workshop*, Covington, LA, May 9.
- Mostafiz, R.B.\***, Friedland, C.J., and Rohli, R.V. (2018). Spatio-temporal variability of extreme temperature and drought events in Louisiana. *American Association of Geographers Annual Meeting*, New Orleans, LA, April 11.
- Friedland, C.J., Rohli, R.V., and **Mostafiz, R.B.** (2018) 2019 State Hazard Mitigation Plan update: Statewide risk assessment, Invited talk, State Hazard Mitigation Planning Committee Meeting #4, Louisiana Governor's Office of Homeland Security and Emergency Preparedness, Baton Rouge, LA, April 2018.
- Friedland, C.J., Rohli, R.V., and **Mostafiz, R.B.** (2018) 2019 State Hazard Mitigation Plan update: Hazard profiles, Invited talk, State Hazard Mitigation Planning Committee Meeting #2, Louisiana Governor's Office of Homeland Security and Emergency Preparedness, Baton Rouge, LA, January 2018.
- 2018 Esri Gulf Coast User Conference*, New Orleans, LA, conference attendee, July 2018.

## MEDIA MENTION

- Campo, C. (2023, November 1). LSU researchers to release tool that determines flood insurance premiums. Houma Today. <https://www.houmatoday.com/story/news/2023/11/01/lsu-researchers-develop-tool-to-predict-flood-insurance-premiums/71393317007/>
- Drew Costley, V. (2023, September 3). Poor air quality from Louisiana wildfires could become more common. <https://lailluminator.com/2023/09/03/louisiana-air-quality/>
- Baurick, T. (2023, August 25). Explosion of wildfires offers a 'sneak peek' of the challenges ahead for Louisiana. [https://www.nola.com/news/environment/wildfire-explosion-offers-sneak-peek-of-future-challenges/article\\_5e1a1d26-4361-11ee-a305-1307b885cb46.html](https://www.nola.com/news/environment/wildfire-explosion-offers-sneak-peek-of-future-challenges/article_5e1a1d26-4361-11ee-a305-1307b885cb46.html)
- Drew Costley, V. (2023, September 22). Louisiana prison officials say they're ready for wildfires; reform advocates have doubts. <https://lailluminator.com/2023/09/22/prisoners-wildfires/>
- L'Heureau, J. (2023, August 28). Extreme heat, drought and record-breaking wildfires hit Louisiana. <https://www.wsws.org/en/articles/2023/08/29/wgdg-a29.html>

## SCHOLARSHIPS AND AWARDS

**Bangladesh University of Engineering and Technology (BUET)**, Dhaka, Bangladesh  
Institute of Water and Flood Management (IWFM),  
South Asian Water Fellow (SAWA), October 2010

**University of Dhaka**, Bangladesh  
Department of Geography and Environment  
Academic Merit Scholarship from Syed Mazeza Memorial Trust Fund, November 2009

**Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP)**, State of Louisiana  
GOHSEP 2019 Annual Awards  
Outstanding Performance Recognition

**Southwest Division of the American Association of Geographers**, U.S.A.  
Graduate Student Poster Competition 2020

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First Prize Winner

## Louisiana State University (LSU) Campus Life, U.S.A.

Love Purple Live Gold Awards 2020

Nominated as Graduate Student Leader of the Year

## Louisiana Sea Grant, U.S.A.

Graduate Research Scholar Program,

Graduate Research Scholar 2020

## State of the Coast, U.S.A.

Student Poster Competition 2021, third Prize winner

## Louisiana State University (LSU) Campus Life, U.S.A.

Love Purple Live Gold Awards 2021, nominated as Graduate Student Leader of the Year

## LSU College of the Coast and Environment, U.S.A.

Outstanding Dissertation Award, 2022-23

## TECHNICAL SKILLS

**GIS and Remote Sensing** ArcGIS, QGIS, ERDAS IMAGINE, Image Analyst, ENVI, Map Info, ILWIS

**Hazard Risk Assessment Software** Hazus, HEC-FIA, FAST

**Database Management** MS Access, Statistical Package for Social Science (SPSS)

**Graphics Design and Animation** Adobe CS4, AutoCAD, Adobe Photoshop, Adobe Illustrator

## OUTREACH AND VOLUNTEER WORK

Spring Greening Day 2018 and 2019; Louisiana State University, Baton Rouge, LA

Donate blood in a blood drive by LifeShare Blood Centers: April 2019; Islamic Center of Baton Rouge, LA

Geaux BIG Baton Rouge, LSU's Largest Day of Service: March 2019; Louisiana State University. Baton Rouge, LA

Judge in 2018 Undergraduate Research Conference: October 2018; Louisiana State University. Baton Rouge, LA

## PROFESSIONAL ORGANIZATIONS

American Association of Geographers (AAG), 2017 – present

American Geophysical Union (AGU), 2020 – present

European Geophysical Union (EGU), 2022 – present

Japan Geoscience Union (JpGU), 2022 – present

Asia Oceania Geosciences Society (AOGS), 2023 – present

## PEER REVIEWER

*American Journal of Environmental Science and Engineering*, 2022 – present

*Frontiers in Environmental Science*, 2022 – present

## Competitive External Grants and Contracts Awarded

Friedland, C.J., **Mostafiz, R.B.**, and Conger, S. 2023: *Natural Hazard Risk Assessment for Louisiana*. LSU AgCenter, Governor's Office of Homeland Security and Emergency Preparedness, \$1,055,259.

**Mostafiz, R.B.**, and Friedland, C.J. 2024: *FORTIFIED Elevated Manufactured Homes to Increase Supply of Affordable, Resilient Housing*. Subcontractor to LSU, U.S. Department of Housing and Urban Development, \$77,112.

## Competitive Grant Proposals Pending

**Mostafiz, R.B.**, Al Assi, A., Rahim, M.A., and Franks, M. 2024: *Housing Efficiency, Resilience, And Outreach for Energy Solutions in Louisiana (Heroes La)*. U.S. Department of Agriculture, \$299,812, pending since 02/26/2024.



## Competitive Grant Proposals Rejected

Rahim, M.A., **Mostafiz, R.B.**, and Friedland, C.J. 2023: *Improving Indoor Air Quality and Pediatric Asthma Outcomes through a Dual-Component, Low-Cost, Portable Intervention involving HEPA Filtration Systems*. Subcontractor to LSU, U.S. Department of Housing and Urban Development, \$50,192.