

KAYODE ATOBA Ph.D.

Institute for a Disaster Resilient Texas
Texas A&M University at Galveston
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Education

- 2018 **Ph.D. Urban and Regional Science**
Texas A&M University, College Station, TX
Dissertation: *Fill and Floods: An Assessment of the Impact of Parcel-Level Mitigation Activities on Residential Flood Damages.*
Chair: Samuel Brody. Committee: Wesley Highfield, Philip Berke, and Ming-Han Li
- 2013 **MS. Geographic Information Systems**
Sam Houston State University, Huntsville, TX
Thesis: *Public Participation Geographic Information Systems for the Marcellus Shale Play: Problems and Prospects.*
- 2008 **BS. Urban and Regional Planning**
Obafemi Awolowo University, Ile-Ife, Nigeria

Research and Teaching Interests

- Methods Geographic information sciences (GIScience), Spatial analysis, Spatial econometrics, Flood exposure modeling, Hazus-MH, Python, Propensity score estimation.
- Specialty Land use Planning, Flood mitigation and resiliency, Flood infrastructure, Buyouts, Property acquisition, Environmental planning, Built environment, Sustainable communities, Floodplain management

Research/Academic Experience

- 2020 - **Assistant Research Scientist**
present *Institute for a Disaster Resilient Texas, Texas A&M University, Galveston.*
- 2020 - **Adjunct Lecturer**
present *Department of Public Service and Administration, Texas A&M University.*
Teach Environmental Policy and management related courses
- 2020 - **Research Associate**
present *Center for Housing and Urban Development, Texas A&M University.*
- 2018 - **Postdoctoral Research Associate**
2020 *Center for Texas Beaches and Shores, Texas A&M University at Galveston.*
- 2016 - **Lecturer and Research fellow**
2018 *Department of Geography, South Dakota State University (SDSU)*
Taught Geography courses. Dissertation fellowship.
- 2013 - **Graduate Research Assistant**
2018 *Center for Texas Beaches and Shores, Texas A&M University at Galveston*
Flood Risk and Exposure modeling using Hazus-MH. Spatially distributed modeling

Publications

Peer-Reviewed Journal Articles

Ross, A. & **Atoba, K.** (2022 accepted/in print) The Dimensions of Individual Support for Coastal Hazard Mitigation: Analysis of a Survey of Upper Texas Coast Residents. *Natural Hazards Review* (Accepted on Nov 12, 2021).

Atoba, K., Newman, G., Brody, S., Highfield, W., Kim, Y., Juan, A. (2021). Buy them out before they are built: evaluating the proactive acquisition of vacant land in flood-prone areas." *Environmental Conservation* 2021: 1-9
<https://doi.org/10.1017/S0376892921000059>

Zhu, R., Newman, G, **Atoba, K.** (2021 accepted/in-print) Simulating the Impact of Land Use Change on Contaminant Transferal During Flood Events in Houston, Texas, USA. *Landscape Journal*.

Prybutok, S., Newman, G., **Atoba, K.**, Sansom, G., Tao, Z. (2021) Combining Co\$ting Nature and Suitability Modeling to Identify High Flood Risk Areas in Need of Nature-Based Services. *Land* 2021, 10, 853. <https://doi.org/10.3390/land10080853>

Retchless, D. Mobley, W., Davlasheridze, M., **Atoba, K.**, Ross, A., Highfield, W. (2021) Mapping Cross-Scale Impacts of Storm Surge Events: Considerations for Design and User Testing *Journal of Maps*. DOI: <https://doi.org/10.1080/17445647.2021.1940325>

Newman, G., Malecha, M. & **Atoba, K.** (2021). Integrating ToxPi Outputs with Arc GIS Dashboards to Identify Neighborhood Threat Levels of Contaminant Transferal During Flood Events. *Journal of Spatial Science*:1-13. doi: 10.1080/14498596.2021.1891149

Atoba, K., Brody, S., Highfield, W., Shepherd, C., & Verdone L. (2020). Strategic Property Buyouts to Enhance Flood Resilience: A Multi-Criteria Spatial Approach for Incorporating Ecological Values into the Selection Process. *Environmental Hazards; Human and Policy Dimensions*. <https://doi.org/10.1080/17477891.2020.1771251>

Mobley, W., **Atoba, K.**, & Highfield, W. (2020) Uncertainty in Flood Mitigation Practices: Assessing the Economic Benefits of Property Acquisition and Elevation in Flood Prone Communities. *Sustainability* 2020, 12(5), 2098; <https://doi.org/10.3390/su12052098>.

Davlasheridze, M., **Atoba, K.**, Highfield, W., Brody, S., Merrell, W., Purdue, A., & Gillmer, W. (2019) Economic Impacts of Storm Surge and the Cost-Benefit Analysis of a Coastal Spine as the Surge Mitigation Strategy in the Houston-Galveston Area in the United States. *Mitigation and Adaptation Strategies for Global Change*. 24 (3) 329-354.

Atoba, K. Brody, S. Highfield, W., & Merrell, W. (2018) Estimating Residential Property Loss Reduction from a Proposed Coastal Barrier System in the Houston-Galveston Region. *Natural Hazards Review* 19(3). [https://doi.org/10.1061/\(ASCE\)NH.1527-6996.0000297](https://doi.org/10.1061/(ASCE)NH.1527-6996.0000297)

Journal articles under review

Rainey, J., Pandian, K., Sterns, L, **Atoba, K.**, Mobley, W. Highfield, W., Blessing, R. Brody, S. Using 311-Call Data to Measure Flood Risk and Impacts: the case of Harris County TX during Hurricane Harvey (Under Review in *Risk Analysis* since Aug 9, 2021).

Book Chapters

Brody, S., **Atoba, K.**, Sebastian, A., Highfield, W., Blessing, R., Mobley, W., Stearns, L. (202). A Comprehensive Framework for Coastal Flood Risk Reduction: Charting a Course Towards Resiliency. In Kousky, C., Fleming, B., and Berger, A (Eds.) A Blueprint for Coastal Adaptation. Island Press pp 2 - 28.

Atoba, K. (2022 accepted and in print). Evaluating a proactive framework for the acquisition of vacant and built flood prone properties in advance of flood events. In Lee, Y & Kothuis, B. (Eds.), Coastal Flood Risk Reduction in the Netherlands and the U.S. Upper Texas Coast. Elsevier.

Davlasheridze, M. & **Atoba, K.** (2022 accepted and in print). Cost benefit analysis of a proposed coastal infrastructure for reducing storm surge induced impact in the Upper Texas Coast. In Lee, Y & Kothuis, B. (Eds.), Coastal Flood Risk Reduction in the Netherlands and the U.S. Upper Texas Coast. Elsevier.

Brody, S. & **Atoba, K.** (2018). Institutional Resilience: The Example of Flood Resiliency in the United States. In Fuchs, S. & Thaler, T. (Eds.), Vulnerability and Resilience to Natural Hazards (pp. 237-256). *Cambridge*: Cambridge University Press.

Selected Technical Reports and Proceedings

Mobley, W., **Atoba, K.**, & Highfield, W. Uncertainty in Flood Mitigation Practices: Assessing the Economic Benefits of Property Buyouts and Freeboard Elevation in Flood Prone Communities. In the *Association of Collegiate Schools of Planning Conference*, October 24, 2019 Greenfield, South Carolina.

Eye of the Storm. Report of the Governor's Commission to Rebuild Texas. Commissioned by John Sharp. **Atoba, K.** (2018): Contributed to Chapters 2, 3, 7 & 9, Future Proofing the Texas Coast. <https://www.rebuildtexas.today/legislative-report-on-hurricane-harvey/>

Highfield, W. Brody, S., **Atoba, K.**, & Blessing, R. (2018). Identifying the Future Costs of Flooding in the Houston-Galveston Region. Final report submitted to the Texas General Land Office. Retrieved from https://www.glo.texas.gov/coastal-grants/_documents/grant-project/17-358-final-rpt.pdf

Atoba, K. A Review of the Adaptive Capacity of New Towns to Flood Risk in the Netherlands. Case of Almere and Ijburg (2016). In Kothuis, B., Lee, Y., & Brody, S. (Eds.), NSF-PIRE Coastal Flood Risk Reduction Program Volume I, Pp 114-121. <http://www.tamug.edu/ctbs/pdf/PIRE-Coastal-Flood-Risk-Reduction-2016-17.pdf>.

Brody, S., Blessing, R., **Atoba, K.**, Mobley, W, & Wilson, M. (2014) A flood risk assessment of the San Jacinto river waste pit. Report for the Environmental Protection Agency Submitted by Center for Texas Beaches and Shores. Texas A&M University at Galveston, TX. <https://semspub.epa.gov/work/06/9595219.pdf>

PresentationsConference/Workshop Presentations

Atoba, K., Brody, S., Highfield, W., Verdone L., & Shepherd, C. (2019). Strategic Property Buyouts to Enhance Flood Resilience: A Multi-Criteria Spatial Approach for Incorporating Ecological Values into the Selection Process. Poster presented at the *Association of Collegiate Schools of Planning Conference*, Greenville, SC, October 24, 2019.

- Mobley, W., **Atoba, K.**, & Highfield, W. (2019). Uncertainty in Flood Mitigation Practices: Assessing the Economic Benefits of Property Buyouts and Freeboard Elevation in Flood Prone Communities. In the *Association of Collegiate Schools of Planning Conference*, October 24, 2019
- Brody, S., Highfield, W. Sebastian, A, Blessing R., Mobley, W., **Atoba, K.**, Sterns, L. (2019). Measuring, Mapping, & Managing Flood Risk: A Pilot Program in Southeast Texas. *Resilience Rising: Research and Practice on Harvey and Hazards of the Future*, College Station, TX, September 5, 2019.
- Atoba, K.** (2017). Fill and Floods: Assessing the Impact of Parcel-level Mitigation Activities on Residential Flood Damages. Paper presentation at the *Great Plains / Rocky Mountains Division of the Association of American Geographers Annual Meeting*, Grand Forks, ND, October 13, 2017.
- Atoba, K.** (2017). New Towns Coping with Flood Risk in the Netherlands: A Tale of Two Dutch Cities. Pecha Kucha paper presentation at the *Natural Hazards Workshop*, Broomfield, CO, July 2017.
- Atoba, K.** (2017). Propensity Score Estimation of Parcel Fill and Its Impact on Residential Flood Damages. Paper presentation at the *Association of American Geographers Annual Meeting*, Boston, MA, April 2017.
- Atoba, K.** (2016) Local Impact of Parcel Fill on Residential Flood Loss: Case of the Clear creek watershed. Poster presentation at the 17th Annual Texas A&M University ecological integration symposium, College Station, TX. April 2016.
- Atoba, K.** Davlasheridze, M., & Brody S. (2016). Predicting economic losses in the Galveston Bay area using storm models. Paper presentation at the *Avoiding Disasters Conference, SSPEED Center*, Rice University, Houston TX. April 2016
- Atoba, K.** & Mobley, W. (2016) Flood damage estimates and the Galveston Bay coastal atlas. Paper presentation at the *Galveston Historical Foundation's Coastal Resilience Conference*. Galveston, TX. October 2015.

Invited Workshops and Expert Panels

- Atoba, K.** (2021) Incubate Galveston: A collective's Innovation Hackathon. Expert Mentor on "Digital Solutions for regional health care: Delivery, long term care, and acute response to disaster events" Hosted by Vision Galveston. The Canon, Galveston, TX October 15-17, 2021
- Atoba, K. et al** (2020) (Matthew Fuchs and Sandra Knight as facilitators) Transforming Buyouts of Flood Prone Property: An Expert Workshop. The Pew Charitable Trusts, July 7, 14, and 22, 2020 (Online due to COVID-19) Invited as an Expert on Flood Buyout.
- Atoba, K. et al** Academic Branding and presentation feedback. Professional session A: Bill Anderson Fund Spring Workshop, Texas A&M University, March 27, 2020.
- Atoba, K.**, Verdone, L., Shepherd C., Brody, S., Highfield, W. Strategic Property Buyouts to Enhance Flood Resilience. Creating a Model for Flood Risk Reduction, Community Protection and Environmental Gains. Keynote Speaker, *Texas Land Conservation Conference*, Austin TX, USA. Feb 28, 2019).
- Atoba, K.**, Mobley, W., & Torres, J. Assessing multiple Coastal Hazard Mitigation Strategies in Galveston TX. Panel discussion at Galveston Historical Foundation *Coastal Resilience*

Conference, Galveston, TX, November 2015

Atoba, K., Brody, S., Highfield, W., & Davlasheridze, M. Predicting Economic Losses Using Storm Surge Models. *Avoiding Disasters Conference-How to Reduce Impacts from the Next Big Storm*. Rice University, Houston, TX. April 26, 2016.

Teaching Experience

Instructor of Record

PSAA 606: Environmental Policy and Management (Fall, 2020) TAMU

GEOG 200: Introduction to Human Geography (2017- 2018), SDSU

GEOG 150: Environmental Disasters/Human Hazards (Spring, 2018), SDSU

GEOG 101: Introduction to Geography (Fall, 2018), SDSU

GEOG 101 (Online): Introduction to Geography (Spring, 2018), SDSU

GEOG 131: Physical Geography; Weather & Climate (2017- 2018), SDSU

Guest Instructor

URPN 210: Urban Issues; Flood Resilience in Urban Areas. TAMU (Fall, 2016)

URPN 210: Urban Issues; Geospatial Applications to Flooding Problems. TAMU (Fall, 2018)

EMGT 2500: Disasters; GIS applications in Emergency Management. UNO (Fall, 2018)

Grants, Awards & Contracts

Funded Grants and Awards

2021- Principal Investigator **\$1,450,017**. *Texas Division of Emergency Management*
2023 (*TDEM*). PI: **Atoba, K.** Co-PI: Brody, S., Highfield, W., Blessing, R., Mobley, W., Retchless, D., Ross, A. Texas Natural Hazard Risk Assessment (Enhanced State Hazard Mitigation Plan - Task 2. Statewide Hazard Data Collection and Analysis). Grant No. 21-125-000-C775

2017 Travel Award to the Netherlands (Internal) *Nation Science Foundation (NSF)*
Partnership in International Research (PIRE). Through Center for Texas Beaches and Shores, Texas A&M University at Galveston TAMUG.

2016- **\$30,000**. *South Dakota State University*. Doctoral Dissertation Fellowship.
2018 Department of Geography, South Dakota State University, Brookings, SD

2016 **\$300** *Texas A&M University*. Graduate Research Award. First place in
Geography/Earth science research. Office of Graduate and Professional Studies,
Texas A&M University, 2016 Student research week

Professional Experience

2016 - **Research Consultant**

2018 *Margaret A. Cargill Philanthropic Services*

Data collection and analysis on issues relating to inter-organizational collaboration among grantee members in relation to disaster mitigation, response, and recovery

- 2011 - **GIS / Lidar Technician**
 2012 *Geodigital International Corporation, The Woodlands, TX*
 Manage LIDAR data for Infrastructure construction and maintenance, corridor mapping, and feature classification of LIDAR data
- 2011 - **Utility Locate Technician**
 2012 *United States Infrastructure Corporation, Houston, TX*
 Reading utility prints and locating underground facilities.
- 2008 - **Town Planning Assistant**
 2009 *Oyo State Urban and Regional Planning Board, Nigeria*
 Planning urban renewal, design of layouts, site inspection, evaluating environmental impact analysis report and development control.
- 2006 - **Town Planning Intern**
 2007 *Physical Planning and Development Unit, Obafemi Awolowo University, Nigeria*
 Digitizing paper maps and Land use plans using AUTOCAD. Auditing development approval grants.

Service Activities

Academic Community Service

- 2018 - **Mentor**
 present The William Averette Anderson Fund. Mentor doctoral students in natural hazards and emergency research across different institutions in the United States.
- 2016 - **Chair of Community Service**
 2017 The William Averette Anderson Fund. Promoting hazard and disaster mitigation education and research for underrepresented groups.
- 2008 - **Outreach Coordinator**
 2009 Ibadan Drug-Free Club. Organizing public outreach programs for individuals affected by drugs and addictive substances.

Scientific Journal Peer Reviews

- 2021- Natural Hazards and Earth Systems sciences
 2020- Journal of Environmental Studies and Science
 2020- Global Environmental Change
 2018- Natural Hazards Review

Professional Memberships

American Planning Association
 The Association of Collegiate Schools of Planning
 American Association of Geographers
 Natural Hazard Mitigation Association