

# RUSSELL BENNETT BLESSING

Center for Texas Beaches and Shores · Texas A&M University at Galveston  
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## EDUCATION

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<b>Ph.D.</b>	Urban & Regional Science, Texas A&M University <i>Dissertation: Human-Stream Corridor Interactions &amp; Flood Resilience</i>	2017
<b>M.U.P.</b>	Urban Planning, Texas A&M University <i>Focus: Socio-Ecological Systems</i>	2011
<b>B.A.</b>	Environmental Studies & Biology (Minor), Austin College <i>Focus: Sustainable Development</i>	2008

## PROFESSIONAL EXPERIENCE

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<b>Associate Research Scientist</b>	<i>Department of Marine Sciences, Texas A&amp;M University at Galveston</i>	2019-Present
<b>Postdoctoral Researcher</b>	<i>Department of Marine Sciences, Texas A&amp;M University at Galveston Department of Civil &amp; Hydraulic Engineering, Rice University</i>	2018-2019
<b>Research Assistant</b>	<i>Department of Marine Sciences, Texas A&amp;M University at Galveston</i>	2013-2017
<b>Research Associate</b>	<i>Center for Texas Beaches &amp; Shores, Texas A&amp;M University at Galveston</i>	2012-2013
<b>Analyst</b>	<i>SSPEED Center, Rice University</i>	2011-2012
<b>Research Assistant</b>	<i>Department of Landscape Architecture &amp; Urban Planning, Texas A&amp;M University</i>	2010-2012
<b>Intern</b>	<i>Landscape Architecture Foundation</i>	Summer 2010
<b>GIS Technician</b>	<i>City of Rockwall, Texas</i>	2008-2009

## RESEARCH INTERESTS

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Land Use & Environmental Planning; Urban Resilience; Spatial Analytics; Landscape Modeling; Flood Risk Management; Natural Hazards; Climate Change Adaptation

## HONORS & AWARDS

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The Erma Lee & Luke Mooney Graduate Student Research Excellence Award	2018
Center for the Integration of Research, Teaching and Learning Associate – Fellow	2017
Urban and Regional Science Doctoral Departmental Scholarship	2015

## PUBLICATIONS

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### *Peer-Reviewed Journal Articles*

1. Sebastian, A., Gori, A., **Blessing, R.B.**, van der Wiel, K., Bass, B. (2019). Disentangling the Impacts of Human and Environmental Change on Catchment Response During Hurricane Harvey. *Environmental Research Letters*. 14(12), 124023.
2. **Blessing, R.B.**, Brody, S.D., & Highfield, W.E. (2019). Valuing Floodplain Protection and Avoidance in a Coastal Watershed. *Disasters*. 43(4), 906-925.
3. Gori, A., **Blessing, R.B.**, Juan, A., Brody, S., & Bedient, P.B. (2019). Characterizing Urbanization Impacts on Floodplain Through Integrated Land Use, Hydrologic, and Hydraulic Modeling. *Journal of Hydrology*. 568: 82-95.
4. Brody, S.D., Sebastian, A., **Blessing, R.B.**, & Bedient, P. (2018). Case study results from southeast Houston, Texas: Identifying the impacts of residential location on flood risk and loss. *Journal of Flood Risk Management*. 11: S110-S120.
5. Brody, S.D., Highfield, W.E., **Blessing, R.B.**, Makino, T., & Shepard, C. (2017). Evaluating the Effects of Open Space Configurations in Reducing Flood Damage along the Gulf of Mexico Coast. *Landscape & Urban Planning*. 167: 225-231.
6. **Blessing, R.B.**, Sebastian, A., & Brody, S.D. (2017). Flood Risk Delineation in the U.S.: How much loss are we capturing? *Natural Hazards Review*. 18(3): 04017002.
7. Brody, S.D., Highfield, W.E., Wilson, M., Lindell, M.K., & **Blessing, R.B.** (2017). Understanding the Motivations of Coastal Residents to Voluntarily Purchase Federal Flood Insurance. *Journal of Risk Research*. 58(1): 1-16.
8. Brody, S.D., Highfield, W.E., & **Blessing, R.B.** (2015). An Analysis of the Effects of Land Use and Land Cover on Flood Losses along the Gulf of Mexico Coast from 1999-2009. *Journal of the American Water Resources Association*. 51(6): 1556-1567.
9. Highfield, W.E., Brody, S.D., & **Blessing, R.B.** (2014). Measuring Impact of Mitigation Activities on Flood Loss Reduction at the Parcel Level: The Case of the Clear Creek Watershed on the Upper Texas coast. *Natural Hazards*. 74(2) 687-704.
10. Brody, S.D., **Blessing, R.B.**, Sebastian, A., & Bedient, P.B. (2013). Examining the Impact of Land Use/Land Cover Characteristics on Flood Loss. *Journal of Environmental Management*. 57(8): 1-14.
11. Brody, S.D., **Blessing, R.B.**, Sebastian, A., & Bedient, P.B. (2012). Delineating the Reality of Flood Risk and Loss in Southeast, Texas. *Natural Hazards Review*. 14(2): 89-97.

### *Articles in Press or Under Review*

1. Mobley, W., Sebastian, A., **Blessing, R.B.**, Highfield, W.E., Stearns, L., & Brody, S.D. (2020). Quantification of Continuous Flood Hazard using Random Forest Classification and Flood Insurance Claims at Large Spatial Scales: A Pilot Study in Southeast Texas. *Natural Hazards and Earth System Sciences Discussions*, 1-22.

### *Short Communications*

1. **Blessing, R.B.** & Sebastian, A. (2018). Out of Bounds: Rethinking U.S. Flood Risk Delineation. *EARTH Magazine*. <https://tinyurl.com/yaxf46eq>.

#### *Technical Reports & Professional Projects*

1. Sharp, J. (2018). Eye of the Storm: Report of the Governor's Commission to Rebuild Texas. *Texas A&M University*. College Station, Texas. *Contributing Author*.
2. Brody, S.D., Highfield, W.E., **Blessing, R.B.**, Making, T., & Shepard, C. (2015). Evaluating the Effectiveness of Open Space in Reducing Flood Damage along the Gulf of Mexico Coast. The Nature Conservancy. Harpswell 10. Houston, TX.
3. **Blessing, R.B.**, Wilson, M., Mobley, W., Atoba, K., & Brody, S.D. (2013). A Flood Risk Assessment of the San Jacinto River Waste Pit. Center for Texas Beaches & Shores. Texas A&M University at Galveston.
4. **Blessing, R.B.**, Stiles, A., & Brody, S.D. (2012). A Spatial Approach to Assess Climate Change Vulnerability for Transit Assets. Report for Texas Transportation Institute, project on Transit Climate Change Adaptation Pilots for the Gulf Coast Region. Center for Texas Beaches and Shores, Texas A&M University at Galveston.
5. **Blessing, R.B.**, Stiles, A., & Brody, S.D. (2012). Understanding the Implications of Climate Change on Transportation Systems within the Gulf of Mexico Coastal Region. Report for Texas Transportation Institute, project on Transit Climate Change Adaptation Pilots for the Gulf Coast Region. Center for Texas Beaches and Shores, Texas A&M University at Galveston.
6. **Blessing, R.B.** (2011). Using GIS to Guide Environmental Management of Non-Point Source Pollution: Failing Septic Systems in the Dickinson Bayou Watershed. Master's thesis. Texas A&M University, College Station, TX.
7. Landscape Architecture Foundation (LAF). (2010). Landscape Performance Series: An online set of resources to help designers, agencies, and advocates evaluate performance, show value and make the case for sustainable landscape solutions. **Role:** Assembled a library of facts and benefits of specific sustainable landscape solutions that can be queried on-line as an intern for the LAF.
8. Neuman, M., **Blessing, R.B.**, Anderson-Wade, & H., Quaium, R. (2010). Sustainability Audit of the Tampa and Hillsborough, Florida Comprehensive Plans. Research Assistantship Deliverable. Department of Landscape Architecture and Urban Planning. College Station, TX.

## **PRESENTATIONS & POSTERS**

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#### *Conference Presentations (\*denotes speaker)*

1. Mobley, W.\*, Sebastian, A., **Blessing, R.B.** Random Forest Classification for Flood Hazard Mapping at Large Spatial Scales. *2019 American Geophysical Union: Fall Meeting, San Francisco, CA*.
2. **Blessing, R.B.\***, Sebastian, A., Highfield, W., & Brody, S.D. Measuring, Mapping and Managing Urban Flood Risk: A Pilot Program in Southeast Texas. *2018 American Geophysical Union: Fall Meeting, Washington, DC*.
3. Brody, S.D.\*, **Blessing, R.B.\***, & Highfield, W.E.\* Risk, Mitigation, and Planning: Lessons from Flooding in the Houston Area. *2017 Association of State Floodplain Managers Annual National conference, Kansas City, MO*.

4. Sebastian, A.\*, **Blessing, R.B.\***, & Brody, S.D. Flood Risk Delineation in the U.S.: How much loss are we capturing? *2016 SSPEED Avoiding Disasters Conference: How to Reduce Impacts from the Next Big Storm*, Houston, TX.
5. Brody, S.D.\*, & **Blessing, R.B.** Examining Flood Risk, Loss, and Management for the Clear Creek Watershed in Southeast Texas: Lessons Learned for Developing Resilient Coastal Communities. *2015 World Environmental & Water Resources Congress, "Floods, Droughts, and Ecosystems: Managing Our Resources Despite Growing Demand and Diminishing Funds,"* Austin, TX.
6. Sebastian, A.\*, Brody, S.D., **Blessing, R.B.**, & Bedient, P.B. Evaluating the 100-year floodplain as an indicator of flood loss. *2014 World Environmental and Water Resources Congress*, Portland, OR.
7. Brody, S.D., **Blessing, R.B.**, & Sebastian, A.\* Predicting Land Use/Land Cover Change in Coastal Texas: Assessing Hazard Resiliency in Freeport, TX. *2013 APA Texas Chapter State Planning Conference*, Galveston, TX.
8. **Blessing, R.B.\***, Brody, S.D., Sebastian, A., & Bedient, P.B. Examining the Influence of Development Patterns on Flood Damages along the Gulf of Mexico. *2012 World Environmental & Water Resource Congress, "Crossing Boundaries."* Albuquerque, NM.
9. Brody, S.D.\*, **Blessing, R.B.**, Sebastian, A., & Bedient, P.B. Identifying Flood Risk and Vulnerability: Assessment of the Clear Creek Watershed. *2012 Severe Storm Prediction, Education, and Evacuation from Disasters Center Conference: Gulf Coast Hurricanes: Mitigation and Response*, Houston, TX.

#### Conference Posters

1. Blaney, M., **Blessing, R.B.**, & Bedient, P.B. Analysis of the Flood Effects of Potential Land Use Scenarios on an Undeveloped Watershed in Houston, Texas. *2019 American Geophysical Union: Fall Meeting*, San Francisco, CA.
2. Gori, A. & **Blessing, R.B.** Characterizing Urbanization Impacts on Floodplains Through Integrated Land Use, Hydrologic, and Hydraulic Modeling. *2017 American Geophysical Union: Fall Meeting*, New Orleans, LA.
3. **Blessing, R.B.**, Makino, T., Doty, P., Brody, S.D., Highfield, W. Examining the 100-Year Floodplain as a Metric of Risk, Loss, and Household Adjustment. *2012 NSF CMMI Engineering Research and Innovation Conference, "Engineering Transformations Through Partnerships,"* Boston, MA.

#### PROJECTS

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1. *Co-Principal Investigator.* Texas General Land Office. \$2,000,000. PI: S.D. Brody, co-PIs: W.E. Highfield, A. Sebastian. Contract No. 19-181-000-B574. Measuring, Mapping, and Managing Flood Risk in Texas (2019-2022).
2. *Contributing Author & Researcher.* Texas General Land Office. \$1,594,189. PI: W.E. Highfield, co-PIs: D. Retchless, M. Davlasheridze, S.D. Brody, A. Ross. Evaluating the Effects of a Coastal Spine: National-Level Economic Ripples and Effects on Flood Insurance (2018).
3. *Contributing Author & Researcher.* Texas General Land Office. \$127,182. PI: W.E. Highfield, co-PI: S.D. Brody. Identifying the Future Costs of Floods in the Houston-Galveston Area (2017).

4. *Contributing Author & Researcher.* National Science Foundation. \$3.6 million. PI: S.D. Brody. NSF PIRE Coastal Flood Risk Reduction Program (2015-2020).
5. *Contributing Author & Researcher.* Houston Endowment. \$3.2 million. PI: P.B. Bedient. Severe Storm Prediction, Education, and Evacuation from Disasters (SSPEED) Center (2014-2017).
6. *Researcher.* West Galveston Island Property Owners Association. \$50,000. PI: S.D. Brody, co-PI: W.E. Highfield. An Integrated Assessment of Flood Risk Reduction on the West End of Galveston Island (2014).
7. *Contributing Author & Researcher.* Shell Center for Sustainability. \$350,000. PI: J.A. Nittrouer, co-PIs: P.B. Bedient, J.E. Padgett, S.D. Brody. The Stress Nexus of Coastlines: Population Development, Infrastructure Security, and Morphological Dynamics of the Upper Texas Gulf Coast (2013-2015).
8. *Researcher.* National Science Foundation. \$27,230. PI: S.D. Brody, co-PI: W.E. Highfield, M. Lindell. Flood Risk Reduction Colloquium with Delft University, Netherlands (2013).
9. *Researcher.* Houston Endowment. \$3.2 million. PI: P.B. Bedient. Severe Storm Prediction, Education, and Evacuation from Disasters (SSPEED) Center (2011-2014).
10. *Researcher.* National Science Foundation. \$312,801. PI: S.D. Brody, co-PI: W.E. Highfield, M. Lindell. Examining the 100-year floodplain as a metric of risk, loss, and household adjustment (2011-2013).
11. *Contributing Author & Researcher.* Texas Commission on Environmental Quality/Texas Sea Grant. \$136,585. PI: W.E. Highfield, co-PI: S.D. Brody. On-Site Sewage Facility Mitigation Optimization in Dickinson Bayou (2011).

## EXPERT PANELS & WORKSHOPS

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1. *Recurring, Costly, and Avoidable – Changing Responses to Houston Flooding.* American Association for the Advancement of Science. “Advancing Science – Discovery to Application”. February 15-19, 2018, Austin, TX.
2. *Framework for Flood Risk Reduction in the Galveston Bay Area.* Delft University of Technology & Texas A&M University at Galveston. December 14-16, 2014. Galveston, TX.
3. *Influence of Development Patterns on Flood Damages.* General Land Office Coastal Resiliency Forum. December 12, 2014. Nassau Bay, TX.
4. *Flood Risk Reduction Colloquium.* Delft University of Technology. July 22-25, 2013. Delft, Netherlands.
5. *Adaptation to Sea Level Rise: Minimizing Risk to the Built, Natural and Economic Environments along the Texas Gulf Coast.* The University of Texas Marine Science Institute. September 18-19, 2012. Port Aransas, TX.

## TEACHING EXPERIENCE

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### *Lecturer of Record*

URPN 460 Sustainable Communities; Evaluation Score: 4.62

Spring 2014

### *Guest Lecturer & Teaching Assistant*

PLAN 641 Environmental Planning  
PLAN 642 Coastal Resiliency & Sustainability  
WFES 405 Urban Wildlife & Fisheries  
PLAN 202 Building Better Cities

## **PROFESSIONAL SERVICE, CERTIFICATIONS, & TECHNICAL SKILLS**

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### *Manuscript Reviewer*

Disasters  
Hydrology & Earth System Sciences  
Journal of Environmental Management  
Natural Hazards Review  
Water

### *Certificates*

Association of Future Faculty Certificate, Texas A&M University	2017
Certificate in Sustainable Urbanism, Texas A&M University	2011
Certificate in Regenerative Ecological Design, Ecosa Institute	2008

### *Computing*

ArcGIS; IDRISI; GeoDa; FRAGSTATS; R; STATA; Python