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Department of Geological Sciences · Environment, Ecology, Energy Program (E3P)

University of North Carolina at Chapel Hill · 104 South Road, Mitchell Hall · Chapel Hill, NC · 27599

EDUCATION

- Ph.D.** December 2016
 Civil & Environmental Engineering, Rice University. Advisor: Philip B. Bedient
Dissertation: Quantifying Flood Hazard & Risk in Highly Urbanized Coastal Watersheds
- B.S.** May 2011
 Civil & Environmental Engineering, Rice University
Focus Areas: Urban Hydrology & Water Resources (II), Urban Infrastructure & Management (III)

PROFESSIONAL EXPERIENCE

- Assistant Professor** 2020-pres.
 Department of Geological Sciences, University of North Carolina at Chapel Hill
 Environment, Ecology, and Energy Program (E3P)
- Associate Research Scientist** 2018-2019
 Center for Texas Beaches & Shores, Texas A&M University - Galveston Campus
- Postdoctoral Researcher**
 Department of Civil & Environmental Engineering, Rice University 2017-2018
 Department of Hydraulic Engineering, Delft University of Technology 2016-2017
- NAF/Fulbright Flood Management Fellow** 2014-2015
 Department of Hydraulic Engineering, Delft University of Technology
- Graduate Research & Teaching Assistant** 2012-2016
 Department of Civil & Environmental Engineering, Rice University
- Project Manager/Scientific Staff** 2011-2012
 Severe Storm Prediction, Education and Evacuation from Disasters (SSPEED) Center
- Water Resource Management Intern** Summer 2010
 San Antonio Water System (SAWS)
- Wind Energy Intern** Fall 2006
 ENERCON GmbH

RESEARCH INTERESTS

Flood Hazard & Risk; Extreme Precipitation; Storm Surge; Coastal Resilience; Hydrologic & Hydraulic Modeling; Geospatial Statistics; Stochastic Modeling; Climate Change Impacts & Adaptation; Environmental Planning

HONORS & AWARDS

- Next Generation of Hazards & Disasters Researchers Enabling Program, NSF Fellowship 2020-2021
- MIT Civil & Environmental Engineering (CEE) Rising Stars Workshop Travel Award 2017
- ETH Workshop on Addressing the Challenges of Compound Events Early Career Scientist Travel Award 2017
- Netherlands America Foundation (NAF)/Fulbright Fellowship in Flood Management 2014-2015
- National Science Foundation Graduate Research Fellowship Program, Honorable Mention 2013

PUBLICATIONS

*Peer-Reviewed Journal Articles (Published, Accepted & In Press), *denotes student supervised*

1. **Sebastian, A.**, Gori, A., Blessing, R.B., van der Wiel, K., Bass, B. (2019) Disentangling the relative impacts of human and environmental change on catchment response during Hurricane Harvey. *Environmental Research Letters*, doi:10.1088/1748-9326/ab5234.
2. Mobley, W.⁺, **Sebastian, A.**⁺, Highfield, W., Brody, S.D. (2019) Estimating Flood Extent during Hurricane Harvey using Maximum Entropy in a Hazard Distribution Model. *Journal of Flood Risk Management*, doi: 10.1111/jfr3.12549. ⁺*these authors contributed equally to this work*
3. Couasonon, A.A.*, **Sebastian, A.**, Morales-Nápoles, O. (2018) A copula-based approach for modeling stochastic boundary conditions in a coastal catchment: An application to the Houston Ship Channel, Texas. *Water, Special Issue: Copulas in Hydrology*, 10(9), 1190-1209. doi: 10.3390/w10091190.
4. Lendering, K.T.⁺, **Sebastian, A.**⁺, Jonkman, S.N., Kok, M. (2018). Guidelines for assessing the performance of flood adaptation innovations within a risk-based framework. *Journal of Flood Risk Management*, doi: 10.1111/jfr3.12485. ⁺*these authors contributed equally to this work*
5. Paprotny, D., **Sebastian, A.**, Morales-Nápoles, O., Jonkman, S.N. (2018). Trends in European flood losses over the past 150 years. *Nature Communications*, doi: 10.1038/s41467-018-04253-1.
6. Blessing, R., **Sebastian, A.**, Brody, S.D. (2018). Flood Risk Delineation in the U.S.: How much loss are we capturing? *ASCE Natural Hazards Review*, doi: 10.1061/(ASCE)NH.1527-6996.0000242.
7. Jonkman, S.N., Godfroy, M., **Sebastian, A.**, Kolen, B. (2018). Brief Communication: Post-event analysis of loss of life due to hurricane Harvey. *Natural Hazards and Earth System Sciences*, doi: 10.5194/nhess-18-1073-2018.
8. Bass, B., Torres, J.M., Irza, J.N., Proft, J., **Sebastian, A.**, Dawson, C.N., Bedient, P.B. (2018). Surge Dynamics across a Complex Bay Coastline, Galveston Bay, TX. *Coastal Engineering*, doi: 10.1016/j.coastaleng.2018.04.019.
9. Van Oldenborgh, G.J., Van der Wiel, K., **Sebastian, A.**, Singh, R., Arrighi, J., Otto, F., Haustein, K., Li, S., Vecchi, G., Cullen, H. (2017). Attribution of the extreme rainfall from Hurricane Harvey, August 2017. *Environmental Research Letters*, doi: 10.1088/1748-9326/aa9ef2.
10. **Sebastian, A.**, Dupuits, E.J.C., Moráles-Napoles, O. (2017). Applying a Bayesian Network based on Gaussian Copulas to Model the Hydraulic Boundary Conditions for Hurricane Flood Risk Analysis in a Coastal Watershed, *Coastal Engineering*, doi: 10.1016/j.coastaleng.2017.03.008.
11. Anarde, K.A., Kameschwar, S., Irza, J.N., Nittrouer, J.A., Lorenzo-Trueba, J., Padgett, J.E., **Sebastian, A.** Bedient, P.B. (2017). Impacts of Hurricane Storm Surge on Infrastructure Vulnerability for an Evolving Coastal Landscape. *Natural Hazards Review*, doi: 10.1061/(ASCE)NH.1527-6996.0000265.
12. Torres, J.M., Bass, B., Irza, J.N., Proft, J., **Sebastian, A.**, Dawson, C.N., Bedient, P.B. (2017). Modeling the Hydrodynamic Performance of a Conceptual Storm Surge Barrier System for Galveston Bay. *ASCE Journal of Waterway, Port, Coastal, and Ocean Engineering*, doi: 10.1061/(ASCE)WW.1943-5460.0000389.
13. Brody, S.D., **Sebastian, A.**, Blessing, R., Bedient, P.B. (2015). Case-study results from southeast Houston, Texas: Identifying the impacts of residential location on flood risk and loss. *Journal of Flood Risk Management*, doi: 10.1111/jfr3.12184.
14. **Sebastian, A.**, Proft, J., Dietrich, C.J., Du, W., Bedient, P.B., Dawson, C.N. (2014). Characterizing hurricane storm surge behavior in Galveston Bay using the SWAN+ADCIRC model. *Coastal Engineering*, 88, 171-181. doi: 10.1016/j.coastaleng.2014.03.002.
15. Brody, S.D., Blessing, R., **Sebastian, A.**, & Bedient, P.B. (2014). Examining the impact of land use/land cover characteristics on flood losses. *Journal of Environmental Planning and Management*, 57(8), 1252-1265. doi: 10.1080/09640568.2013.802228.
16. Fang, N., Dolan G., **Sebastian, A.**, Bedient, P.B. (2014). Case Study of Flood Mitigation and Hazard Management at the Texas Medical Center in the Wake of Tropical Storm Allison in 2001. *ASCE Natural Hazards Review*, 15(3). doi: 10.1061/(ASCE)NH.1527-6996.0000139.

17. Doubleday, G., **Sebastian, A.**, Luttenchlager, T., Bedient, P.B. (2013). Modeling Hydrologic Benefits of Low Impact Development: A Distributed Hydrologic Model of The Woodlands, TX. *Journal of American Water Resources*, 49(6), 1444-1455. doi: 10.1111/jawr.12095.
18. Brody, S.D., Blessing, R., **Sebastian, A.**, Bedient, P.B. (2013). Delineating the Reality of Flood Risk and Loss in Southeast, TX. *ASCE Natural Hazards Review*, 14(2), 89-97. doi: 10.1061/(ASCE)NH.1527-6996.0000091.
19. Ray, T., Stepinski, E., **Sebastian, A.**, & Bedient, P.B. (2011). Dynamic Modeling of Storm Surge and Inland Flooding in a Texas Coastal Floodplain. *ASCE Journal of Hydraulic Engineering*, 137(10), 1103-1110. doi: 10.1061/(ASCE)HY.1943-7900.0000398.

Peer-Reviewed Journal Articles (In Preparation & Under Review)

1. **Sebastian, A.**, Bader, D., Nederhoff, K., Leijnse, T. Hindcast validation of Hurricane Harvey using the coupled-coastal and inland hydrodynamic model SFINCS. (*expected submission 01/2020*).
2. Torres-Dueñas, L.*, **Sebastian, A.**, de Bruijn, K., Bricker, J., Leijnse, T., Nederhoff, K. Beyond the 100-year Floodplain: Estimating Flood Risk due to Compound Events in Southeast Houston using the Semi-Advanced 2D Model SFINCS. (*expected submission 02/2020*).
3. Fagnant, C., Gori, A., Ensor, K.B., **Sebastian, A.**, Bedient, P.B. Characterizing spatiotemporal trends in extreme precipitation across the southern Texas coast. *ASCE Natural Hazards Review*, (*submitted 12/2019*).
4. de Ruiter, M., **Sebastian, A.**, Engelhardt, E., Gori, A., de Moel, H. A framework to assess non-stationarity of physical flood vulnerability at a building-level. *Journal of Flood Risk Management*, (*submitted 07/2019*).
5. Juan, A., Gori, A., **Sebastian, A.** Comparing Floodplain Evolution in Channelized and Un-channelized Urban Watersheds in Houston, Texas. *Journal of Flood Risk Management*, (*submitted 10/2017*).

Books & Chapters

1. **Sebastian, A.**, Gori, A. (2018). Flood Control Policy and Risk Management in the United States. In Chapter 12, *Hydrology and Floodplain Analysis*, 6th ed. by Philip B. Bedient, Wayne Huber, & Baxter Vieux. Upper Saddle River, NJ: Prentice Hall, pp. 675-716.
2. Highfield, W., **Sebastian, A.**, Vieux, B. (2018). GIS Applications in Hydrology. In Chapter 10, *Hydrology and Floodplain Analysis*, 6th ed. by Philip B. Bedient, Wayne Huber, & Baxter Vieux. Upper Saddle River, NJ: Prentice Hall, pp. 617-644.
3. Kothuis, B.L.M., Jonkman, S.N., **Sebastian, A.** (2016). Delta Planning and Design in the Houston Galveston Bay Region, Texas. In *Delta Interventions: Design and Engineering in Urban Water Landscapes*. Nillesen, A.L., Kothuis, B.L.M., Meyer, H., Palmboom, F. (Eds.). TU Delft Delta Infrastructures and Mobility Initiative. Delft, the Netherlands: Delft University Publishers, pp. 82-85.
4. **Sebastian, A.** (2015). Flood Mitigation in Multi-hazard Coastal Environments. In *Delft Delta Design: Houston Galveston Bay Region, TX*. Kothuis, B.L.M., Brand, A.D., **Sebastian, A.**, Nillesen, A.L., & Jonkman, S.N. (Eds.). Delft, the Netherlands: Delft University Publishers, pp. 69-71.
5. **Sebastian, A.** (2012). Case Studies in Hydrologic Engineering: Water Resources Projects. In Chapter 13, *Hydrology and Floodplain Analysis*, 5th ed. by Philip B. Bedient, Wayne Huber, & Baxter Vieux. Upper Saddle River, NJ: Prentice Hall, pp. 720-750.
6. Fang, Z., **Sebastian A.**, Bedient, P.B. (2012). Modern Flood Prediction and Warning Systems. In Chapter 21, *Handbook of Engineering Hydrology Vol. 1: Fundamentals and Applications*. Eslamian, S. (Ed.), Boca Raton, FL: CRC Press Taylor & Francis Group, pp. 455-470.
7. Bedient, P.B. & **Sebastian, A.** (2012). An Introduction to Gulf Coast Severe Storms and Hurricanes. In Chapter 1, *Hurricane Ike: Lessons Learned and Steps to the Future*, P.B. Bedient (Ed.). College Station, TX: Texas A&M University Press, pp. 1-15.
8. Bedient, P.B. & **Sebastian, A.** (2012). Hurricane Ike. In Chapter 2, *Hurricane Ike: Lessons Learned and Steps to the Future*, P.B. Bedient (Ed.). College Station, TX: Texas A&M University Press, pp. 16-27.

Short Communications

1. Van Oldenborgh, G.J., Van der Wiel, K., Sjoukje, P., Kew, S., **Sebastian, A.**, Otto, K., Haustein, K., Singh, R., Arrighi, J., Vecchi, G. (2019, September). Rapid attribution of the extreme rainfall in Texas from Tropical Storm Imelda. *World Weather Attribution*. <https://tinyurl.com/y6pl9b5o>.
2. Blessing, R., **Sebastian, A.** (2018, September). Out of Bounds: Rethinking U.S. Flood Risk Delineation. *EARTH Magazine*. <https://tinyurl.com/yaxf46eq>
3. Brand, N., **Sebastian, A.**, Kothuis, B. (2017, October). A Multidisciplinary Perspective on Texas' Flood Risk Challenge. *DeltaLinks Magazine*. Jonkman, S.N.J., Van Veelen, P., Rijcken, T. (Eds.), <https://tinyurl.com/y8zzh9av>.
4. Van Oldenborgh, G.J., Van der Wiel, K., **Sebastian, A.** (2017, September). Harvey: een meter neerslag in Houston, Klimaatverandering? *Meteorologica Magazine*. Bintanja, R. (Ed.), <https://tinyurl.com/ybf8dqp>.

Technical Reports & White Papers

1. Sharp, J. (2018). Eye of the Storm: Report of the Governor's Commission to Rebuild Texas. College Station, TX: Texas A&M University.
2. **Sebastian, A.**, Lendering, K.T., Kothuis, B.L.M., Brand, A.D., Jonkman, S.N., Van Gelder, P.H.A.J.M., Kolen, B., Comes, M., Lhermitte, S.L.M., Meesters, K.J.M.G., Van de Walle, B.A., Ebrahimi-Fard, A., Cunningham, S., Khakzad-Rostami, N., Nespeca, V. (2017). Hurricane Harvey Report: A fact-finding effort in the direct aftermath of Hurricane Harvey in the Greater Houston Region. Delft, the Netherlands: Delft University Publishers.
3. **Sebastian, A.**, et al. (2017). A Testing and Implementation Framework (TIF) for Climate Adaptation Innovations. BRIGAD Horizon2020 Programme, European Union.
4. Winsemius, H.C., Ward, P.J., Salamon, P., Weiland, F.S., Budimir, M., Duncan, M., Van den Hurk, B.J.J.M., **Sebastian, A.** (2016). The Domino Effect: the Future of Quantifying Compound Events in Deltas. In *Proceedings from the 2016 Understanding Risk (UR) Forum: Building Evidence for Action*. Himmelfab, A. (Ed.). Washington, D.C: The World Bank, pp. 127-130.
5. Bedient, P.B. (2015). Houston-Galveston Area Protection System (H-GAPS). SSPEED Center 2015 Annual Report. Rice University, Houston, Texas.
6. **Sebastian, A.**, Irza, J.N., Christian, J., Bedient, P.B. (2014). Galveston County Residential Surge Damage Model. Rice University, Houston, Texas.
7. Blackburn, J.B., Bedient, P.B., **Sebastian, A.** (2011). The Lone Star National Recreation Area: Economic Prosperity, Recreation and Flood Mitigation Based on Natural Assets: A Concept for the Upper Texas Coast. Rice University, Houston, Texas.
8. Bedient, P.B., Blackburn, J.B., **Sebastian, A.** (2011). Learning the Lessons of Hurricane Ike: Preparing for the Next Big One. SSPEED Center Phase I Report. Rice University, Houston, Texas.

PRESENTATIONS & POSTERS*Conference Presentations*

1. Lee, Y.*, Kothuis, B.L.M., **Sebastian, A.**, Brody, S.D. (2019). Design of Transformative Education and Authentic Learning Projects: Experiences and Lessons Learned from an International Multidisciplinary Research and Education Program on Flood Risk Reduction. *American Society for Engineering Education*, Tampa, FL.
2. 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.
3. **Sebastian, A.***, Gori, A., Bass, B. Understanding the impacts of human and environmental change on catchment response during Hurricane Harvey. *2018 AGU Fall Meeting*, Washington, DC, (invited).

4. Maulsby, F.*, **Sebastian, A.**, Bedient, P.B. (2018). Probabilistic flood risk: quantifying uncertainty in flood hazard estimates and flood risk profiles for an urban watershed in Houston, TX. *2018 AGU Fall Meeting*, Washington, DC.
5. Blessing, R.*, **Sebastian, A.**, Highfield, W., Brody, S.D. (2018). Measuring, Mapping and Managing Urban Flood Risk: A Pilot Program in Southeast Texas. *2018 AGU Fall Meeting*. Washington, DC.
6. Fagnant, C.*, Gori, A., Ensor, K.B., **Sebastian, A.**, Bedient, P.B. (2018). Characterizing spatio-temporal trends in extreme precipitation across the southern Texas coast. *2018 AGU Fall Meeting*. Washington, DC.
7. Mobley, W.* & **Sebastian, A.** Leveraging Machine Learning and Twitter to identify rescue needs during Hurricane Harvey. *2018 ACSP 58th Annual Conference*, Buffalo, New York.
8. **Sebastian, A.*** Modeling the Influence of Urbanization on the 1% Floodplain. *2018 SSPEED Urban Flooding & Infrastructure Conference: Moving Forward from Harvey*, Houston, Texas, (invited).
9. Lendering, K.T., **Sebastian, A.**, Jonkman, S.N.* Standard Framework for Evaluating the Performance of Temporary Flood Barriers. *7th International Conference on Flood Management (ICFM7)*, Leeds, United Kingdom.
10. Couasnon, A.A., Paprotny, D.*, Morales-Nápoles, O., **Sebastian, A.**, Hrachowitz, M., Jonkman, S.N. Application of a Bayesian Network-based hydrologic model to the United States. *7th International Conference on Flood Management (ICFM7)*, Leeds, United Kingdom.
11. de Ruiter, M.*, Engelhardt, J., de Ruig, L., **Sebastian, A.**, de Moel, H. Temporally-Dynamic Flood Vulnerability: The influence of watershed-scale adaptation and vulnerability reduction efforts on flood losses. *7th International Conference on Flood Management (ICFM7)*, Leeds, United Kingdom.
12. Juan, A.*, **Sebastian, A.**, Gori, A. Comparing Floodplain Evolution in Channelized and Un-channelized Urban Watersheds in Houston, TX. *2017 EWRI World Environmental & Water Resources Congress*, Sacramento, CA.
13. **Sebastian, A.*** Flood Hazard Delineation in the United States: Why are we ignoring compound floods? *2016 Understanding Risk Forum: Building Evidence for Risk Action*, Venice, Italy. (invited).
14. **Sebastian, A.***, Blessing, R.*, 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. (invited).
15. Irza, J.N.*, **Sebastian, A.**, Bedient, P.B. Quantifying Storm Surge Flood Damages for Coastal Community Structures: A Geospatial Approach for the Galveston Bay, Texas Region. *2015 World Environmental and Water Resources Congress*, Austin, TX.
16. **Sebastian, A.***, Brody, S.D., Blessing, R., Bedient, P.B. Evaluating the 100 year floodplain as an indicator of flood loss. *2014 World Environmental and Water Resources Congress*, Portland, OR.
17. **Sebastian, A.***, Proft, J., Dawson, C.N., Bedient, P.B. Examining the Behavior of Storm Surge from Hurricane Ike (2008) and Other Modeled Events. *National Hydrologic Warning Council 2013 Conference & Exposition*, Ponte Verde, FL.
18. Brody, S.D., Blessing, R., **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.
19. **Sebastian, A.***, Bedient, P.B., Proft, J., Dawson, C.N. An evaluation of the magnitude and timing of storm surge in relation to storm path along the upper Texas coast. *2012 World Environmental and Water Resources Congress*, Albuquerque, NM.
20. Blessing, R.*, 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 and Water Resources Congress*, Albuquerque, NM.
21. Brody, S.D.*, Blessing, R., **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.

22. **Sebastian, A.***, Bedient, P.B. Galveston Bay Coastal Protection Network: A SSPEED Center Proposal. *2011 Texas Floodplain Management Association Fall Conference*, San Antonio, TX.

Conference Posters

1. **Sebastian, A.***, Mobley, W., Highfield, W.E., Brody, S.D. (2019). Leveraging Machine Learning and Twitter, to identify rescue needs during Hurricane Harvey. *2019 AGU Fall Meeting*. San Francisco, CA. doi: 10.1002/essoar.10501349.1.
2. Mobley, W., **Sebastian, A.***, Blessing, R.B., Juan, A., Highfield, W.E. (2019). Random Forrest Classification for Flood Hazard Mapping at Large Spatial Scales. *2019 AGU Fall Meeting*. San Francisco, CA.
3. Garner, M.*, **Sebastian, A.**, Hakkenberg, C., Juan, A., Gori, A., Bedient, P.B. (2019). Integrating annual Landsat imagery in a hydrologic impact analysis of localized land use change for a rapidly developing watershed in Houston, TX. *2019 AGU Fall Meeting*. San Francisco, CA.
4. Zeff, H.B.*, Characklis, G.W., **Sebastian, A.** (2019). Real estate debt and flood risk: who is financially exposed? *2019 AGU Fall Meeting*. San Francisco, CA.
5. Juan, A.*, Pranavesh, P., **Sebastian, A.**, Padgett, J.E, Bedient, P.B. (2019). Coupling Probabilistic Flood Inundation and Road Network Accessibility Modeling to Assess Flood Risk and Cascading Impacts from Severe Storms in Houston, TX. *2019 AGU Fall Meeting*. San Francisco, CA.
6. Zeff, H.B.*, Characklis, G.W., **Sebastian, A.**, Chiu, W.A., Kaihatu, J.M. (2019). The joint impacts of flooding and contaminated sediment deposition on private property owners in the wake of a storm surge event. *National Institute of Environmental Health Sciences (NIEHS) Superfund Research Program (SRP) 2019 Annual Meeting*. Seattle, WA.
7. Fagnant, C.*, Gori, A., Ensor, K.B., **Sebastian, A.**, Bedient, P.B. (2019). Characterizing spatiotemporal trends in extreme precipitation across the southern Texas coast. *Rice Oil & Gas High Performance Computing Conference*. Houston, TX.
8. Do, C.*, Juan, A., **Sebastian, A.**, Bedient, P.B. (2018). Characterization of compound flooding in a highly urbanized coastal watershed during Hurricane Harvey. *2018 AGU Fall Meeting*. Washington, DC.
9. de Ruiter, M.*, **Sebastian, A.**, Gori, A., Englehardt, J., de Moel, H. (2018). Assessing temporally-dynamic flood vulnerability using empirical building-type depth-damage curves A case study of Houston. *2018 EGU Meeting*, Vienna, Austria.
10. **Sebastian, A.***, Juan, A., Gori, A., Maulsby, F., Bedient, P.B. (2017). Quantification of Interbasin Transfers into the Addicks Reservoir during Hurricane Harvey. *2017 AGU Fall Meeting*, New Orleans, LA.
11. Van Oldenborgh, G.J., Van der Wiel, K., **Sebastian, A.**, Singh, R., Arrighi, J., Otto, F., Haustein, K., Li, S., Vecchi, G., & Cullen, H. (2017). Attribution of the extreme rainfall from Hurricane Harvey, August 2017. *2017 AGU Fall Meeting*, New Orleans, LA.
12. Couasnon, A.A.*, **Sebastian, A.**, Morales-Nápoles, O. Modeling Stochastic Boundary Conditions in a Coastal Catchment using a Bayesian Network: An Application to the Houston Ship Channel, Texas. *2017 EGU Meeting*, Vienna, Austria.
13. **Sebastian, A.***, Juan, A., Brody, S.D., Bedient, P.B. (2016). Quantifying the Influence of Urbanization on a Coastal Floodplain. *2016 AGU Fall Meeting*, San Francisco, CA.
14. Irza, J.N.*, **Sebastian, A.**, Bedient, P.B. (2016). Quantification of Uncertainty for Residential Flood Damage Estimates. *2016 SSPEED Avoiding Disasters Conference: How to Reduce Impacts from the Next Big Storm*, Houston, TX.
15. **Sebastian, A.***, Dupuits, E.J.C., Morales-Nápoles, O., Jonkman, S.N. (2015). Assessing Flood Risk from Hurricane-induced Precipitation and Storm Surge: A Bayesian Network Approach. *2015 AGU Fall Meeting*, San Francisco, CA.
16. Bass, B.*, Torres, J.M., Irza, J.N., Proft, J., **Sebastian, A.**, Dawson, C.N., Bedient, P.B. Guiding Surge Reduction Strategies via Characterization of Coastal Surge Propagation and Internal Surge Generation within a Complex Bay/Estuary System, Galveston Bay, TX. *2015 AGU Fall Meeting*, San Francisco, CA.

17. **Sebastian, A.***, Dupuits, E.J.C., Morales-Nápoles, O., Jonkman, S.N. (2015). Statistical Analysis and Characterization of Tropical Cyclones and Surge Levels for the Houston-Galveston Region. *ASCE Coastal Structures and Solutions to Coastal Disasters Joint Conference 2015*, Boston, MA.
18. **Sebastian, A.***, Brody, S.D., Bedient, P.B. (2013). Evaluating the 100 year floodplain as an indicator of flood risk in low-lying coastal watersheds. *2013 AGU Fall Meeting*, San Francisco, CA.
19. **Sebastian, A.***, Bedient, P.B. (2012). Using NEXRAD Radar Rainfall to Calibrate a Development Impact Model in a Coastal Watershed. *2012 AGU Fall Meeting*, San Francisco, CA.
20. **Sebastian, A.***, Doubleday, G., Bedient, P.B. (2012). Distributed Hydrologic Modeling of LID in The Woodlands, Texas. *2012 AGU Fall Meeting*, San Francisco, CA.

Other Invited Lectures or Research Presentations (not listed above)

1. FEMA National Advisory Council (NACo) Meeting (2019). *Improving Risk Visualization and Communication: A Pilot Program in Southeast Texas*. College Station, Texas. May 7-9, 2019.
2. Guest Lecture Coastal Resiliency & Sustainability (PLAN 641) (2019). *Accommodation: Resilience Strategies for Flood Mitigation*. Texas A&M University, College Station, Texas. April 15, 2019.
3. MARB/MARS Graduate Seminar (2019). *Delineating Flood Risk under Evolving Coastal Hazards*. Texas A&M University at Galveston, Galveston, Texas. April 4, 2019.
4. E3P Specialty Seminar (2019). *Delineating Flood Risk under Evolving Coastal Hazards*. University of North Carolina at Chapel Hill, Chapel Hill, North Carolina. April 2, 2019.
5. The National Academies of Sciences, Engineering and Medicine (NASEM) ResilientAmerica Roundtable (2019). *Measuring, Mapping, and Managing Urban Flood Risk in Southeast Texas*. Washington, D.C. February 12-13, 2018.
6. Guest Lecture (2019). *The State of Texas: One Year after Hurricane Harvey*. Deltares, Delft, The Netherlands. January 30, 2019.
7. Seminar Institute for Environmental Studies (2019). *Flood Mitigation Decision-making under Non-stationary Boundary Conditions*. Vrije Universiteit Amsterdam, The Netherlands. January 29, 2019.
8. Specialty Seminar Department of Civil & Environmental Engineering (2018). *Delineating Flood Risk under Evolving Coastal Hazards*. Rice University, Houston, Texas. March 21, 2018.
9. Architecture Core Design Studio (ARCH 504) (2018). *Flood Risk Mitigation in the City of Houston*. Rice University, Houston, Texas. February 16, 2018.
10. Delft Infrastructure and Mobility Initiative (DIMI) - Integrated Design in Deltas Symposium: Houston after Hurricane Harvey (2017). *Flood Management in the Greater Houston Region*. Delft University of Technology, Delft, the Netherlands, October 20, 2017.
11. CEE Rising Stars Workshop (2017). *Comparing Floodplain Evolution Under Varying Flood Risk Management Strategies*. Massachusetts Institute of Technology (MIT), Boston, Massachusetts, October 12-13, 2017.
12. Introduction to Water and Climate (CT3367) (2017). *Hydraulic Design in the Houston-Galveston Region, Texas*. Delft University of Technology, the Netherlands. September 12, 2017.
13. 2nd Semi-Annual Meeting of Dutch Researchers Exploring Compound Events (Workshop) (2017). *Applying Bayesian Networks to Model Hurricane Boundary Conditions for the U.S. Gulf Coast*. Amsterdam, the Netherlands. September 1, 2017.
14. Probabilistic Design II (CIE 5310) (2017). *Using Continuous Bayesian Networks to Model Hurricane Boundary Conditions in the Houston-Galveston Region, Texas*. Delft University of Technology, the Netherlands. June 9, 2017.
15. Addressing the Challenge of Compound Events (Workshop) (2017). *On the influence of Urbanization on Compound Flooding in Coastal Watersheds*. ETH Zurich, Switzerland. April 21, 2017.
16. ASCE/COPRI Louisiana State University Student Chapter (2016). *Flood Risk and Mitigation in the Houston-Galveston Region: Lessons Learned in the Netherlands*. Baton Rouge, LA. April 11, 2016.

17. Department of Hydraulic Engineering Colloquium (2015). *Assessing Flood Risk & Loss in Southeast Texas*. Delft University of Technology, the Netherlands. June 9, 2015.
18. TU Delft and Texas A&M Colloquium (2014). *Low Impact Development: Applications in Heavy Rainfall Regions*. Delft, the Netherlands. February 16, 2014.
19. TU Delft and Texas A&M Colloquium (2013). *Flooding and floodplain management in Houston, TX: A gradual paradigm shift*. Galveston, Texas. July 22, 2013.

WORKSHOP & CONFERENCE PLANNING

1. *Concurrent, Consecutive and Cascading Events: An Emerging Challenge for Risk Assessment and Management of Natural and Natch Hazards*. AGU Fall Meeting, San Francisco, CA. December 9-13, 2019. *Session Convener*.
2. *AI and Machine Learning for Climate and Extreme Weather Prediction*. AGU Fall Meeting, San Francisco, CA. December 9-13, 2019. *Session Convener*.
3. *Compound and Cascading Events: an Emerging Challenge for Natural Hazard Risk Assessment and Management*. AGU Fall Meeting, Washington, D.C. December 10-14, 2018. *Session Convener*.
4. *Urban Flooding & Infrastructure: Moving Forward from Harvey*. 2018 SSPEED Center Conference, Rice University, Houston, TX. February 21-22, 2018. *Session Convener*.
5. *Spring 2017 BRIGAIID Meeting*. BRIGAIID European Union Horizon2020 Programme, Berlin, Germany. May 10-12, 2017. *Workshop Organizer*.
6. *Fall 2016 BRIGAIID Meeting*. BRIGAIID European Union Horizon2020 Programme, Leuven, Belgium. November 16-18, 2016. *Workshop Organizer*.
7. *Avoiding Disasters: How to Reduce Impacts from the Next Big Storm*. 2016 SSPEED Center Conference, Rice University, Houston, TX. April 26-27, 2016. *Conference Organizer*.
8. *Hurricane Ike: 5 Years Later*. 2013 SSPEED Center Conference, Rice University, Houston, TX. September 24-25, 2013. *Conference Organizer*.
9. *Prediction of Coastal Surge Impacts and Sea Level Rise*. 2012 World Environmental and Water Resources Congress, Albuquerque, NM. May 20-24, 2012. *Session Organizer*.
10. *Gulf Coast Hurricanes: Mitigation And Response*. 2012 SSPEED Center Conference, Rice University, Houston, TX. April 10 - 11, 2012. *Conference Organizer*.

TEACHING

Instructor , Water & Society, Freshman Writing Intensive Seminar (FWIS 188)	Spring 2014
Regular Guest Lecturer & Teaching Assistant	2011-2016
Introduction to Civil and Environmental Engineering (CEVE 101)	
Hydrology and Water Resources Engineering (CEVE 412)	
Hydraulic Modeling and Analysis (CEVE 512)	
Graduate Student Advisor , Department of Hydraulic Engineering, TU Delft	2014-present
Undergraduate Student Advisor , Center for Civic Leadership Research Program	2014-2016

GRANTS & FELLOWSHIPS

Awarded

1. co-PI: North Carolina General Assembly (NGCA), *NC Policy Collaboratory: Flood Resilience* (10/01/2019-12/01/2020; \$2,160,000); with M. Piehler (PI) and T. BenDor, D. Salveson, G. Characklis, J. Kern, B. Hunt, J. Monast, K. Gray, J. Hughes, R. Noble, J. Stewart, R. Leuttich, L. Ferguson, A. Harris, M. Doyle, L. Hashemi-Beni, H. Paerl (co-PIs). Contract No. .
2. co-PI: Texas General Land Office, *Measuring, Mapping, and Managing Flood Risk in Texas* (02/18/19-04/30/22; \$2,000,000); with S.D. Brody (PI) and W.E. Highfield (co-PI). Contract No. 19-181-000-B574.

3. PI: Netherlands America Foundation (NAF)/Fulbright Fellowship in Flood Management, *Quantifying Flood Risk and Influencing Coastal Defense Planning* (09/01/14-05/31/15; \$10,800).

PROFESSIONAL DEVELOPMENT WORKSHOPS ATTENDED

CEE Rising Stars Workshop, Massachusetts Institute of Technology	10/2017
Preparing for the Academic Job Market, Rice University	04/2016
The Art of Science by Professor Roel Snieder, Delft University of Technology	06/2015
Freshman Writing Instructor Training, Rice University	12/2013

PROFESSIONAL SERVICE

Manuscript Reviewer

Natural Hazards; Geophysical Research Letters; Journal of Hydrology; Environmental Science and Policy; ASCE Natural Hazards Review; Ocean Dynamics; Marine Geodesy; Journal of Meteorological Research; Water; Anthropocene; Earth's Future

Membership

American Geophysical Union (AGU)
 American Society of Civil Engineers (ASCE)
 International Association of Hydro-Environment Engineering and Research (IAHR)
 Fulbright Alumni Association
 Congress Bundestag Youth Exchange (CBYX) Alumni Network

Registered Engineer in Training, State of Texas, License No. 57722

OTHER SELECTED SERVICE

Netherlands America Foundation (NAF) Houston Chapter, Education Committee Co-chair	2018-2019
Rice School of Architecture Guest Juror	2018-2019
Rice Alumni Volunteers for Admission (RAVA) Interviewer	2016-present
NSF Program for International Research & Exchange (PIRE), Mentor	2016-2020
Baker Institute Student Forum (BISF) Energy Policy Paper Competition Judge	2016
Rice Undergraduate Research Symposium (RURS) Judge	2014,2016
Martel Residential College Faculty & Community Associate	2014-2016
Martel Residential College First-Year Academic Mentor	2014-2016
Rice School of Engineering Graduate Student Advisory Committee to the Dean	2013-2014
CBYX Houston Area and Class of 2007 Alumni Coordinator	2007-2012

LANGUAGES

English: Native Language
 German: Fluent
 Dutch: Intermediate
 Spanish: Basic

REFERENCES

Available upon request