

# Curriculum Vitae

**Dr. David P. Retchless**

retchled@tamug.edu

Texas A&M University at Galveston  
Department of Marine Sciences

PO Box 1675  
Galveston, TX 77553  
409-741-7130

## EDUCATION

**PhD, Geography.** Penn State University, August 2015

- Dissertation: *Understanding Local Sea Level Rise Risk Perceptions and The Power of Maps to Change Them: The Effects of Distance, Detail, and Doubt*

**MSc, Geography.** Penn State University, August 2011

- Thesis: *Public Perceptions of Spatial Analogs for Climate Change: A Survey of Centre Region, Pennsylvania Residents*

**BA, Program of Liberal Studies,** University of Notre Dame, May 2004

## PROFESSIONAL APPOINTMENTS

**Associate Joint Appointment at rank of Assistant Professor.**

Department of Geography, Texas A&M University, February 2017 – present.

**Graduate Faculty.** Master of Marine Resources Management, Texas A&M University at Galveston, September 2016 – present.

**Assistant Professor.** Department of Marine Sciences, Texas A&M University at Galveston, September 2015 – present.

**Graduate Assistant.** Penn State University, August 2010 – May 2015.

## GRANT PROPOSALS

### **FUNDED:**

“Evaluating the Effects of a Coastal Spine: National-Level Economic Ripples and Effects on Flood Insurance.” Texas General Land Office. PI Wesley Highfield, co-PIs Ashley Ross-Wootton, Leonard Waterworth, Meri Davlasheridze, Samuel Brody, William Merrell Jr, and David Retchless, allotted 14% credit. Total award \$1,594,189. Submitted October 2017, awarded December 2017 – December 2018.

“A Survey on Natural Hazard Literacy.” Texas A&M University at Galveston Texas Comprehensive Research Fund. PI Ashley Ross, D. Retchless co-PI. Texas A&M University at Galveston. Total award \$8,000. Submitted April 2017, awarded May-August 2017.

## Curriculum Vitae

“Acquisition of high-resolution bathymetric and topographic surveying technology (HydroLite-DFX) for teaching and research.” Texas A&M University at Galveston Texas Comprehensive Research Fund. PI Pete van Hengstum, co-PIs Wes Highfield and David Retchless. Total award \$15,450. Submitted April 2017, awarded May-August 2017.

### **UNFUNDED:**

“Identifying Rural Disaster Resilience in the aftermath of Hurricane Harvey.” PI Ashley Ross-Wootton, co-PIs Jennifer Horney, Joshua Carlton, and David Retchless, allotted 25% credit. National Science Foundation RAPID. Total budget \$171,501. Submitted September 2017.

“Building Community Resilience through Improved Hazard Literacy: The Development and Application of User-Driven GIS Information Tools.” PI Ashley Ross-Wootton, co-PIs Meri Davlasheridze, Samuel Brody, Joshua Gun, and David Retchless, allotted 25% credit. DOC-National Oceanic and Atmospheric Administration. Total budget \$475,932. Submitted March 2017.

“Integrating Health, Hazards, and Community to Increase Resiliency in At-Risk Populations.” PI W. Highfield. D. Retchless co-PI, allotted 25% credit. National Academy of Sciences. Total budget \$1,795,681. Submitted December 2016.

"CHS: SMALL: Augmented Reality for Hazard Education and Engagement: Comparing Map and Augmented Reality Views of Storm Surge Flooding." PI D. Retchless, allotted 66% credit. NSF IIS – Cyber-Human Systems. Total budget \$382,395. Submitted November 2016.

“Geospatial decision-support tools for wetland and floodplain management on the Texas Coast.” PI S. Brody. D. Retchless co-PI, allotted 33% credit. Texas A&M University, NOAA RESTORE Act Science Program. Total budget \$690,055. Submitted September 2016.

“Enhancing Tools for Tracking Ocean-Borne Hazards: Expanding Availability and Scope of Sargassum Early Advisory System to Include Red Tides and Oil Spills.” PI Meri Davlasheridze; Thomas Linton and D. Retchless co-PI, allotted 33% credit. Texas Commission On Environmental Quality. Total budget \$628,533. Submitted April 2016.

“Predicting Land Cover Change to Foster Hazard Resiliency.” PI: Wesley Highfield; co-PIs: Samuel Brody, William Merrell Jr., David Retchless, allotted 25% credit. Texas General Land Office. Total budget \$161,446.00. Submitted September 2015.

“Assessing the Effectiveness of a Coastal Web-GIS Atlas: Improving tools to foster resilient coastal communities in Texas.” PI: Samuel Brody; co-PIs: Wesley Highfield, David Retchless, allotted 33% credit. Texas Sea Grant College Programs. Total budget \$199,154. Submitted June 2015.

### **AWARDS, DISTINCTIONS AND FELLOWSHIPS**

# Curriculum Vitae

- Society for Risk Analysis Student Travel Award (2012)
- Penn State University Graduate Fellowship (2009-2010)
- Penn State Anulf I Maun Graduate Fellowship (2009-2010)
- Phi Beta Kappa Society member (inducted 2004)
- Edward J. Cronin Award for excellence in writing in major (2004)

## PEER-REVIEWED PUBLICATIONS

### Journal articles (published)

- **Retchless, D.** 2017. "Understanding local sea level rise risk perceptions and the power of maps to change them: The effects of distance and doubt." *Environment and Behavior*, doi: 0013916517709043.
- Hesse, A., R. Hedberg, J. Shinn, **D. Retchless**, D. Baldwin, J. Bernhardt. 2016. "Preparing Geographers for Interdisciplinary Research: Graduate Training at the Interface of the Natural and Social Sciences." *The Professional Geographer*.
- Mason, J. S., **D. Retchless**, A. Klippel. 2016. "Domains of Uncertainty Visualization Research: A Visual Summary Approach." *Cartography and Geographic Information Science*.
- **Retchless, D.** and C. Brewer. 2015. "Guidance for Representing Uncertainty on Global Temperature Change Maps." *International Journal of Climatology*. DOI: 10.1002/joc.4408.
- **Retchless, D.** 2014. "Sea Level Rise Maps: How Individual Differences Complicate the Cartographic Communication of an Uncertain Climate Change Hazard." *Cartographic Perspectives* 77:17-32.  
<http://dx.doi.org/10.14714/CP77.1235>
- **Retchless, D.**, N. Frey, C. Wang, L. S. Hung, and B. Yarnal. 2014. "Climate extremes in the United States: recent research by physical geographers." *Physical Geography* 35 (1):3-21.
- **Retchless, D.** 2014. "Communicating climate change: spatial analog versus color-banded isoline maps with and without accompanying text." *Cartography and Geographic Information Science* 41 (1):55-74.

### Book chapters (in press)

- **Retchless, D.** "Communicating Climate Change in the Age of the Geoweb: Citizen Sensors and Personalized Visualizations." In *The Geoweb and Geography: (Re)Thinking Research in the advent of Big Data*. Thatcher, J., A. Shears, and J. Eckert, eds. University of Nebraska Press.

### Conference proceedings

- Smith, J., **D. Retchless**, C. Kinkeldey, and A. Klippel. "Beyond the Surface: Current Issues and Future Directions in Uncertainty Visualization Research." *Proc. International Cartographic Conference*. Dresden, Germany, August 25th-30th, 2013.  
<http://www.personal.psu.edu/jms1186/Documents/Smith2013Uncertainty.pdf>

# Curriculum Vitae

## PRESENTATIONS AND POSTERS

- **Retchless, D.** “Testing Augmented Reality Tools for Communicating Storm Surge and Encouraging Preparedness: A Survey of Texas A&M at Galveston Students.” Presentation at the American Meteorological Society Annual Meeting, Austin, TX, January 7-11, 2018.
- **Retchless, D.** “Map and augmented reality views of storm surge flooding: Methods for evaluating effects of perspective on risk perceptions and engagement.” Presentation at the Association of American Geographer’s Annual Meeting, Boston, MA, April 5-9, 2017.
- **Retchless, D.** “Effects of map and augmented reality views of flood risk on concern about climate change.” Presentation at the North American Cartographic Information Society (NACIS) Annual Meeting, Colorado Springs, CO, October 20, 2016.
- **Retchless, D.** “Understanding Local Sea Level Rise Risk Perceptions and the Power of Maps to Change them: The Effects of Distance, Detail, and Doubt.” Presentation at the Association of American Geographer’s Annual Meeting, San Francisco, CA, March 29 - May 2, 2016.
- **Retchless, D.** Discussant for “Risk Perception and Resilience Planning” session. Association of American Geographer’s Annual Meeting, San Francisco, CA, March 29 - May 2, 2016.
- Berhardt, J., J. Shinn, and **D. Retchless.** Organizers for “Interdisciplinarity in Graduate Training in New Institutional Landscapes” session. Association of American Geographer’s Annual Meeting, San Francisco, CA, March 29 - May 2, 2016.
- **Retchless, D.** “Sea Level Rise in Sarasota Bay.” Digital map poster presentation at the North American Cartographic Information Society (NACIS) Annual Meeting, Minneapolis, MN, October 14, 2015.
- **Retchless, D., J. Mason, A. Klippel.** “Dimensions of Uncertainty Visualization Research.” Presentation at the North American Cartographic Information Society (NACIS) Annual Meeting, Pittsburgh, PA, October 10, 2014.
- **Retchless, D.** “How Do ‘Six Americas’ of Sarasota Students See Sea Level Rise Uncertainty? Preliminary Results a Survey of Map Users.” Presentation at the North American Cartographic Information Society (NACIS) Annual Meeting, Pittsburgh, PA, October 9, 2014.
- Mason, J., **D. Retchless,** and A. Klippel. “Dimensions of Uncertainty: A Visual Classification of Geospatial Uncertainty Visualization Research.” *Visually-Supported Reasoning with Uncertainty Workshop at GIScience Conference.* Vienna, Austria, September 23rd, 2014.
- **Retchless, D.** “How Do ‘Six Americas’ of Sarasota Students See Sea Level Rise Uncertainty? Methods for a Survey of Map Users.” Presentation at the Association of American Geographer’s Annual Meeting, Tampa, FL, April 21-25, 2014.
- Smith, J., **D. Retchless,** C. Kinkeldey, and A. Klippel. “Beyond the Surface: Current Issues and Future Directions in Uncertainty Visualization Research.” *International Cartographic Conference.* Dresden, Germany, August 25th-30th, 2013.

# Curriculum Vitae

- **Retchless, D.** “The effect of cartographic representations of sea level rise uncertainty on the decision making process: a proposed methodology.” Presentation at the Association of American Geographer’s Annual Meeting, Los Angeles, CA, April 9-13, 2013.
- **Retchless, D.** “Mapping climate change uncertainty: a pilot study of effects on risk perceptions and decision making.” Presentation at the Society for Risk Analysis Annual Meeting, San Francisco, CA, December 9-12, 2012.
- **Retchless, D.** “Mapping climate change uncertainty: effects on risk perceptions and decision making.” Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012.
- **Retchless, D.** “Public perceptions of spatial analogs for climate change: a survey of centre region, Pennsylvania residents.” Presentation at the Association of American Geographer’s Annual Meeting, New York, NY, February 24-28, 2012.
- **Retchless, D.** “Do spatial analogs improve climate communication: a survey of Centre Region, Pennsylvania residents.” Poster presentation at the Association of American Geographer’s Annual Meeting, Seattle, WA, April 12-16, 2011.

## OTHER RESEARCH

**Contributing researcher**, Hurricane Harvey CRT Report.

**Researcher and developer**, Augmented Reality Application for Galveston Storm Surge Flooding, self-funded, 2016-2018.

**Researcher and project lead**, Google Earth Engine Analysis of Global Shoreline Change, in partnership with Tim Dellapenna, self-funded, 2017-2018.

**Researcher and interviewer**, Hurricane Harvey Rural Resilience, PI Ashley Ross, self-funded. 2017-2018.

**Research Assistant**, NSF Human Social Dynamics Grant, Geography, Penn State University, University Park, PA. 2012-2014

- Grant title: Land-User Interactions and Spatial Externalities in Organic Farming (Upper Midwest, USA) and Agrobiodiversity Production (Bolivia); PI: Dr. Karl Zimmerer
- Analyzed and prepared visualizations of field data; created transects; acquired and georectified satellite imagery; reviewed interviews and surveys; configured GPS units

## TEACHING

**Professor:** GIS Modeling for Coastal Resources (MARS 625). Marine Sciences, Texas A&M University at Galveston, Galveston, TX. Spring 2018.

**Co-Professor:** Marine Science Senior Seminar (MARS 481). Marine Sciences, Texas A&M University at Galveston, Galveston, TX. Fall 2017.

## Curriculum Vitae

**Professor:** GIS-Based Spatial Analysis and Modeling (GEOG 665). Marine Sciences, Texas A&M University at Galveston, Galveston, TX. Fall 2017.

**Professor:** Introduction to GIS (MARS 325). Marine Sciences, Texas A&M University at Galveston, Galveston, TX. Fall 2017, 2016, Fall 2015.

**Professor:** Marine Geography (MARS 210). Marine Sciences, Texas A&M University at Galveston, Galveston, TX. Spring 2017, Fall 2016, Spring 2016.

**Invited Lecturer:** “Cartography in Climate Change Communication: How design, audience, and scale affect public understanding and engagement.” Department of Geography Friday Seminar Series, Texas A&M University, 9 September 2016.

**Guest Lecturer:** “Basics of cartography and map design,” Introduction to GIS, UT Health Science Center Houston, 2 February 2016.

**Instructor:** Natural Hazards (GEOG 333). Geography, Penn State University, University Park, PA. Spring 2013.

**Instructional Materials Developer:** Coastal Processes, Hazards, and Society. Interdisciplinary Teaching about Earth for a Sustainable Future (InTeGrate), <http://serc.carleton.edu/integrate/>. 2013-2014.

**Guest Lecturer:** Physical Geography (GEOG 010, Spring & Fall 2014), Applied Cartographic Design (GEOG 467, Spring 2014), Multivariate Mapping for Energy, Economic and Climate Data Using GIS (GEOG 560, Fall 2013), Natural Hazards (GEOG 333, Spring 2010).

**Teaching Assistant:** Cartography – Maps and Map Construction (GEOG 361). Geography, Penn State University, University Park, PA. Fall 2014.

**Teaching Assistant:** Human Dimensions of Global Warming (GEOG 438W). Geography, Penn State University, University Park, PA. Fall 2011.

**Teaching Assistant:** Economic Geography (GEOG 126). Geography, Penn State University, University Park, PA. Fall 2011.

**Teaching Assistant:** Mapping Our Changing World (GEOG 160). Geography, Penn State University, University Park, PA. Spring 2011.

**Teaching Assistant:** Physical Geography (GEOG 010). Geography, Penn State University, University Park, PA. Fall 2010.

**Language Instructor:** NOVA Group, Osaka, Japan, 2004-2005.

# Curriculum Vitae

## **SERVICE**

**Exhibitor, TAMU GIS Day.** College of Geosciences, Texas A&M University. College Station, TX. November 15, 2017.

- Promote GIS activities of Marine Sciences department at outreach event

**Member, GIS Day Planning Committee, Fall 2017.**

**Member, Art Subcommittee of the Council for Built Environment. 2017-2018.**

**Co-Lead, ad-hoc committee for review of OCRE curriculum, Spring 2017.**

**Member, GIS Librarian Search Committee.** Marine Sciences, Texas A&M University at Galveston, Galveston, TX. 2016-2018.

**Member, Remote Sensing Search Committee.** Marine Sciences, Texas A&M University at Galveston, Galveston, TX. 2016-2018.

**Member, Academic Program Review Committee for Ocean and Coastal Resources.** Marine Sciences, Texas A&M University at Galveston, Galveston, TX. 2015-2017.

- Attend meetings and contribute to self-study report

**Member, Marine Resources Management Core Committee.** Marine Sciences, Texas A&M University at Galveston, Galveston, TX. 2015-2017.

- Attend meetings and suggest curriculum revisions

**Exhibitor, TAMU GIS Day.** College of Geosciences, Texas A&M University. College Station, TX. November 18, 2015.

- Promote GIS activities of Marine Sciences department at outreach event

**President, Graduate Students in the Department of Geography.** Geography, Penn State University, University Park, PA. 2012-2013.

- Organized graduate student town hall meetings, represented graduate students at faculty meetings, helped secure funding for graduate student travel, solicited volunteers for standing committees

# Curriculum Vitae

**Administrative assistant for departmental transition to 5-year PhD program.** Geography, Penn State University, University Park, PA. Spring 2012.

- Drafted justification statement for program change, changes to graduate student handbook

## **STUDENTS MENTORED**

### **GRADUATE**

Victoria Lee Bartlett

Danny Michael Cresswell

Jace Hodder

Dustin Picard

Travis Sterne

### **UNDERGRADUATE**

Annitha Ochoa

Christina Stipanic

Evelyn Trenchard

## **PEER REVIEWS**

“Graphically supported evaluation of the usability of mapping techniques used in presenting spatial accessibility.” *Cartography and Geographic Information Science*. November 2017.

“Human and environmental vulnerability for coastal hazard along a lagoon barrier of Nador by using a multi-criteria decision analysis.” *Progress in Physical Geography*. November 2017.

“The Influence of Hazard Maps and Trust of Flood Controls on Coastal Flood Spatial Awareness and Risk Perception.” *Environment and Behavior*. August (1<sup>st</sup> review) and November (2<sup>nd</sup> review) 2017.

“Revealing the Invisible Environments of Risk and Resiliency in Vulnerable Communities through Geospatial Techniques.” *Tsunamis: Detection, Risk and Crisis Management*. Nova Science Publishers. February 2017.



## Curriculum Vitae

"Global Warming and Medical Waste: A Survey of United States ObGyn Physicians' Attitudes." *Weather, Climate, and Society*. April 2016.

"Producing Usable Climate Change Exposure Risk Information: Property Value and Tax Exposure to Sea-Level Rise in Coastal New Jersey." *Climatic Change*. February 2016.

"A Cartographic Framework for Visualizing Risk." *Cartographica*. June (1<sup>st</sup> review) and October (2<sup>nd</sup> review) 2012.