

Curriculum Vitae

John Thomas Brackins, E.I.

Updated August 26, 2019

Graduate Research Assistant
Center for the Management, Utilization and
Protection of Water Resources
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Education

Tennessee Tech University	Civil and Environmental Engineering	Ph.D. (ongoing) Current GPA: 4.00
Tennessee Tech University	Civil and Environmental Engineering	M.S. Final GPA: 4.00
Tennessee Tech University	Civil and Environmental Engineering	B.S. <i>in cursu honorum</i> Final GPA: 3.97

Research Areas

- Regional Scale Coastal Flood Modeling and Simulation with Consequence Assessment
- Hydrologic Modeling

Professional Experience

Graduate Research Assistant (Summer 2017 to present)

Center for the Management, Utilization and Protection of Water Resources, Tennessee Tech University, Cookeville, TN

Research Projects:

ADCIRC modeling:

Storm surge inundation mapping of Andhra Pradesh (India) using ADCIRC

HEC-RAS 2D modeling:

Flood inundation mapping using HEC-RAS 2D for Cookeville, Tennessee

Window Cliffs Project:

Survey and streamflow measurements in pursuit of flood early warning system for

Window Cliffs State Natural Area in Cookeville, Tennessee

Undergraduate Researcher (Spring 2015 to Spring 2017)

Department of Civil and Environmental Engineering, Tennessee Tech University, Cookeville, TN

Research Projects:

Coastal Infrastructure Storm Surge Impact Framework: Project funded by URECA!

Storm surge impact analysis using SLOSH and HEC-FIA

ADCIRC modeling:

Storm surge impact analysis using ADCIRC and HEC-FIA

Dry Valley HEC-HMS modeling:

Karst drainage flooding analysis using HEC-HMS

Falling Water River Project:

Surveying of the Falling Water River in Putnam County, Tennessee
Intern (Summer 2014, Summer and Winter 2015, Summer and Winter 2016)
 TTL, Inc., Nashville, TN

Teaching Assistant (Spring 2016 and Fall 2016)

CEE 3020 Surveying Laboratory, Department of Civil and Environmental Engineering,
 Tennessee Tech University, Cookeville, TN

Professional License/Registration and Memberships

- Engineer Intern, License #33189, State of Tennessee
- Passed Fundamentals of Engineering (FE) Examination
- Leadership Positions
 - (2016-2018) Secretary- Tennessee Tech University Water Professionals Student Chapter
 - 2018 AWRA Outstanding Student Chapter Honorable Mention
 - (2016-2017) Vice President- Tennessee Tech University American Society of Civil Engineers (ASCE) Student Chapter
- Member
 - American Geophysical Union (AGU)
 - American Society of Civil Engineers (ASCE)
 - American Water Resources Association (AWRA)
 - National Society of Professional Engineers (NSPE)

Major Honors and Achievements

- 2019, **National Science Foundation Graduate Research Program Fellow** (3 Years of Funding), NSF-GRFP
- 2018, **National Water Center Innovators Program Summer Institute Fellow**, Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI)
- 2018, **Richard A. Herbert Memorial Graduate Scholarship**, American Water Resources Association (AWRA)
- 2017 and 2016, **Bachelor of Science Best Paper**, Tennessee Tech University Civil and Environmental Engineering Department
- 2017, **Outstanding Senior**, Tennessee Tech University Civil and Environmental Engineering Department
- 2016, **Barry M. Goldwater Scholarship Nominee**, Tennessee Tech University
- 2016, **3rd Place in World Environmental and Water Resources** (EWRI) Congress Undergraduate Student Technical Paper Competition
- 2016, **Outstanding Undergraduate Research**, Tennessee Tech University Civil and Environmental Engineering Department
- 2016, **Undergraduate Poster Award**, 25th Tennessee Water Resources Symposium of the Tennessee American Water Resources Association (TN-AWRA)
- 2015, **URECA! Research Grant Recipient**
- 2013-2016, Scholarship Recipient, Department of Civil and Environmental Engineering, Tennessee Tech University

Modeling Skills

- Modeling: ADCIRC, GSSHA, HEC-FIA, HEC-RAS (1D and 2D), HEC-HMS, MODFLOW, StormCAD, WaterCAD

- Packages: ESRI ArcGIS, Aquaveo™ SMS, Aquaveo™ WMS, AutoCAD, ANSYS® Fluent, IBM® SPSS Statistics
- Programming: C++, Matlab, Python, R

Conference Proceedings and Final Project Reports

- **Brackins, J.** and Kalyanapu, A.J. (2019). “Comparison of parametric rainfall models of tropical cyclone rainfall for flood risk studies”. *Proc., 28th Tennessee Water Resources Symposium*, TNAWRA, Nashville, TN.
- **Brackins, J.**, Rahman, A., Moragoda, N., Cohen, S., and Lowry, C. (2018). “Incorporating realistic channel geometry data to improve continental-scale flood forecasts with the National Water Model”. H41P-2344 presented at 2018 AGU Fall Meeting, Washington, D.C., 10-14 Dec.
- **Brackins, J.**, Moragoda, N., Rahman, A., Cohen, S., and Lowry, C. (2018). “Incorporating realistic channel geometry into continental-scale hydrological modeling”. CUAHSI Summer Institute Technical Report submitted to National Water Center, Tuscaloosa, AL.
- **Brackins, J.**, Davis, A., Guy-Baker, C., and Kalyanapu, A. J. (2018). “Comparison of HEC-RAS 1-D to HEC-RAS 2-D model for Breedings Mill Branch Creek, Putnam County, Tennessee”. *Proc., 27th Tennessee Water Resources Symposium*, TNAWRA, Nashville, TN.
- **Brackins, J.**, and Kalyanapu, A. J. (2017). “Tropical cyclone storm surge inundation and velocity hazard mapping of the state of Andhra Pradesh (India) using AD-CIRC”. OS23B-1407 presented at 2017 AGU Fall Meeting, New Orleans, LA, 11-15 Dec.
- **Brackins, J.**, and Davis, A. (2017). “Groundwater modeling of the Falling Water River watershed (HUC 0513010807) using USGS MODFLOW-NWT”. CEE 6900 Final Report submitted to Tennessee Tech University.
- **Brackins, J.**, Carson, J., Stansfield, N., Wenger, B., and Wilson, S. (2017). “Replacement of Homer Bray Road Bridge over Line Creek”. CEE 4950 Final Report submitted to Tennessee Tech University.
- **Brackins, J.**, Davis, A., Wilson, S., and Kalyanapu, A. J. (2017). “Development of a hydrologic modeling system for the Dry Valley catchment, Putnam County, Tennessee”. *Proc., 26th Tennessee Water Resources Symposium*, TNAWRA, Nashville, TN.
- **Brackins, J.**, and Kalyanapu, A.J. (2016). “Analysis and Calculation of a Streamflow Hydrograph for the Obion River near US 45-W”. CEE 5420 Final Report submitted to Tennessee Tech University.
- **Brackins, J.**, Guy-Baker, C., Stuber, C., and Kalyanapu, A. J. (2016). “Using Geographic Information Systems (GIS) to map sinkholes in Putnam County, Tennessee.” CEE 5990/4990 Final Report submitted to Tennessee Tech University.
- **Brackins, J.**, Davis, A., Lindstrom, R., Wilson, S., and Kalyanapu, A. J. (2016). “Development of a Hydrologic Modeling System for the Dry Valley Catchment, Putnam County, Tennessee” CEE 5420/4420 Final Report submitted to Tennessee Tech University.
- **Brackins, J.**, and Kalyanapu, A. J. (2016). “Using AD-CIRC and HEC-FIA Modeling to Predict Storm Surge Impact on Coastal Infrastructure” *Proc., World Environmental and*

Water Resources Congress, ASCE, Reston, Va.
<http://dx.doi.org/10.1061/9780784479841.023>

- **Brackins, J.**, and Kalyanapu, A. J. (2016). “Prediction of Storm Surge Impacts on Coastal Infrastructure Using AD-CIRC and HEC-FIA Models” *Proc., 25th Tennessee Water Resources Symposium*, TNAWRA, Nashville, TN.
- **Brackins, J.**, and Kalyanapu, A. J. (2015). “Quantifying the Impact of Storm Surge on Coastal Infrastructure” TTU URECA! Final Report submitted to Tennessee Tech University.