

# THERESA WYNN THOMPSON

Biological Systems Engineering  
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## EDUCATION

Ph.D. Biological Systems Engineering, Virginia Tech, 2004  
M.S. Civil Engineering, North Carolina State University, 1995  
B.S. Agricultural Engineering, Virginia Tech, 1992, summa cum laude

## EMPLOYMENT HISTORY

Assistant Dept. Head for Undergraduate Studies, Biological Systems Engineering, Virginia Tech, 2012-2019  
Associate Professor, Biological Systems Engineering, Virginia Tech, 2011-present  
Assistant Professor, Biological Systems Engineering, Virginia Tech, 2004-2011  
Graduate Research Assistant, Biological Systems Engineering, Virginia Tech, 1998-2004  
Field Coordinator/Extension Associate, Maryland Cooperative Extension, 1996-1998  
Senior Staff Engineer, Woodward-Clyde, Gaithersburg, Maryland, 1995-1996  
Environmental Modeler, NC Division of Environmental Management, Raleigh, 1994-1995  
Graduate Research Assistant, Civil Engineering, NC State University, 1992-1994  
Research Assistant, Agricultural Engineering, Virginia Tech, 1990-1992  
Cooperative Education Student, VA Dept. of Transportation, 1989; Maryland Environmental Service, 1988-1989

## RESEARCH GRANT PROPOSALS

Effectiveness of stormwater management practices in protecting stream channel stability.  
Wynn-Thompson, T., D. Sample, and A. Miller. \$177,555. Chesapeake Bay Trust. 2018-2020.  
Improving the success of stream restoration practices. Wynn-Thompson, T. and E.P. Smith.  
\$217,322. Chesapeake Bay Trust. 2017-2020.  
Improving the success of in-stream structures. Wynn-Thompson, T. \$88,075. Chesapeake Bay Trust. 2015-2017.  
Badgley, B., T. Thompson, and G. Evanylo. \$117,402. Opening the 'black box' in bioretention cells: how does understanding of microbial ecology translate to improved performance? ICTAS. 2014-2016.  
Wetland water budget modeling. W.L. Daniels, T.M. Wynn, and R. Whittecar. \$1,588,256. Piedmont Wetlands Research Program. 2008-2018.  
Wynn-Thompson, T. and M. Eick. \$45,624. Physicochemical effects of temperature and water chemistry on streambank erosion. Virginia Tech Institute for Critical Technology and Applied Science. 2012-2013.  
Wynn, T. \$76,458. Development of a Wetland Vegetation Hydraulic Properties Database. Piedmont Wetlands Research Program. 2011-2013.  
Hession, W.C., B. Benham, W.L. Daniels, G. Evanylo, LA. Krometis, D. Scott, T. Wynn, E. Hester, K. McGuire, W. Aust, F. Benfield, D. Orth. Stroubles Research, Education, and Management Site

(StREAMS) laboratory. \$43,327. CALS Integrated Internal Competitive Grants Program. 2011.

Hodges, S., J. Cundiff, J. Fike, J. Galbraith, J. Ignosh, J. Pease, R. Grisso, T. Wynn, J. Campbell, J. McGee, S. McGinnis, S. Prisley, W. Thomason. VT Integrated Bioenergy Team. \$35,000. CALS Integrated Internal Competitive Grants Program. 2011.

Stremmer, M., J.R. Kuhn, P.P. Vlachos, R.V. Davalos, S.D. Ross. IGERT: MultiScale Transport in Environmental and Physiological Systems (MultiSTEPS). \$3,000,000. National Science Foundation. 2010-2015. Wynn Thompson is a Faculty Participant.

Geomorphology and Vegetation: Interactions, Dependencies, and Feedback Loops - 40th Annual Binghamton Geomorphology Symposium. W.C. Hession, T.M. Wynn, L. Resler. \$29,684. National Science Foundation. 2009.

Water Quality Evaluation Of Equine Farm Management Practices. T. M. Wynn. \$13,445. Prince William Soil and Water Conservation District. 2008-2010.

Stroubles Creek Stream Restoration. T. M. Wynn, W.C. Hession, and E. Yagow. \$167,200. Virginia Department of Conservation and Recreation. 2007-2010.

New River and Upper Roanoke River Watershed Field Coordinator. T. M. Wynn. \$60,676. Virginia Department of Conservation and Recreation. 2007-2008.

Development of a Stormwater Management Model for Hanover County, Virginia. T. M. Wynn. \$36,165. 2007-2008.

Developing Strategies for Urban Channel Erosion Quantification in Upland Coastal Zone Streams. E. Yagow, W.C. Hession, and T. M. Wynn. \$87,000. Virginia Department of Environmental Quality. 2007-2008.

New River and Upper Roanoke River Watershed Field Coordinator. T. M. Wynn. \$58,700. Virginia Department of Conservation and Recreation. 2006-2007.

Reducing Urban Stormwater Impacts Within the Stroubles Creek Watershed. T. M. Wynn and E. Yagow. \$85,000. Virginia Department of Conservation and Recreation. 2006-2008.

Development of Building Blocks to Prescribe Ecological Flows for the Rivanna River Watershed. P. Angermeier, M. Kopeny, L. Green, T. M. Wynn, P. Diplas, W. Aust. \$27,037. The Nature Conservancy. 2005-2006.

Polecat Creek Watershed Project: Evaluation of Urban Landuse Impact on Surface Water Quality. T. M. Wynn, S. Mostaghimi. \$50,928. Virginia Department of Conservation and Recreation. 2005-2006.

Incorporating Stream Erosion and Restoration into Watershed Models. T. M. Wynn, E. Yagow, and B. Benham. \$74,000. US EPA. 2005-2007.

Estimating the Contribution of Stream Bank Erosion to Sediment Loads using an Optical Backscatter Sensor. T. M. Wynn. \$59,204. Virginia Tech Aspires Program. 2005-2006.

Development of a Continuous Suspended Sensor for Water Quality Monitoring. T. M. Wynn. \$31,150. ADVANCE VT Program. 2005-2006.

TMDL Implementation Plan Development for Stroubles Creek. T. Younos, B. Benham, T. M. Wynn, and E. Yagow. \$39,755. Virginia Department of Environmental Quality. 2004-2005.

#### **TEACHING AND ADVISING EXPERIENCE**

- Assistant Department Head for Undergraduate Studies, 2012-2019
- Currently major advisor for 1 BS/MS, 2 MS students and 1 PhD student
- Instructor for BSE 3504: Transport Processes in Biological Systems, BSE 5364: Stream Restoration, BSE 5984: Fluvial Forms and Processes
- Undergraduate research projects directed

- DeCecco, A. 2017. Evaluation of an In Situ Streambank Erosion Test Device: Accuracy of Data Analysis Techniques
- Winters, S. and U. Withers. 2016. Discharge measurement using rock weirs.
- Withers, U. 2016. The Use of Passive, Constructed Wetland Systems for Onsite Treatment of Waste from Isolated, Single Family Residences.
- Dillon, M. 2013. Water Quality Impact of Landuse Conversion to Herbaceous Biofuels Crops in the Southeastern Piedmont, USA.
- Parks, O.W. and S. Barlow. 2010. Water Quality Evaluation of Equine Farm Management Practices.
- Julian, M. and W. Thomas. 2009. Water Quality Evaluation of Equine Farms.
- Sparks, A. 2008. NSF REU and Multicultural Academic Opportunity Program Summer Research Intern: Changes in Boundary Shear Stress Due to Streambank Vegetation.
- Davis, K. 2008. Evaluation of Sensor Deployment Techniques for Continuous Turbidity Monitoring.
- Summers, J. 2006. Assessing the Accuracy of the Submerged Jet Test Device.
- Buttermore, N. and J. Elstein. 2004-2005. Development of a Bank Profiler for Measuring Stream Bank Erosion.
- Deal, J. and C. Piercy. 2003. NSF REU: The Effects of Root Density on Aggregate Stability and Stream Bank Erosion.
- Harpold, A. and M. Henderson. 2002. NSF REU: Root Density and Distribution in Riparian Buffers.
- Senior design team advisor
    - Freix, S., S. Johnson, V. Martinez Rodriguez, and B. Smith. 2019-2020. Stream Corridor Improvements for Tom's Creek Tributary.
    - Alspaugh, H., A. Domiano, A. Ford, and M. Paul. 2018-2019. Wolf Creek Streambank Stabilization.
    - Brogan, C., D. Huynh, and D. Rakha. 2016-2017. Drop Inlet Vegetated Cover for Stormwater Treatment.
    - Gatarz, N., J. Gentry, and A. Gruendl. 2015-2016. Lick Run Stream Restoration
    - Balian, C., J. Cantor, and L. Carr. 2014-2015. Green Space Trail Redesign for the Village at Tom's Creek in Blacksburg, VA. Co-advisor with M.L. Wolfe
    - Lewis, J. and L. Doumar. 2013-2014. Conservation Plan for the Virginia Tech Livestock Farm.
    - Grljevic, D., B. Morrison, and K. Tretick. 2012-2013. Green Roof Design for Cheatham Hall at Virginia Tech. Co-advisor with E. Grant.
    - Greenspan, D., C. Parrish, and J. Wade. 2011-2012. Life Sciences District Erosion and Sediment Control and Stormwater Management Plan.
    - Barlow, S., K. Brill, B. Bunch, J. Johnstone, K. Hall, and S. Landes. 2010-2011. The Green Roof Project for Seitz Hall and Virginia Tech YMCA. Co-advisor with E. Grant.
    - Arnett, J., S. Handley, G. Hayes, and T. Stables. 2009-2010. Designing an Appropriate Waterbody at Lakewood Park. Co-advisor with E. Yagow and D. Bork.
    - Bronnenkant, K. and J. D'Alessandro. 2008-2009. Reducing Urban Stormwater Impacts in the Cedar Run Watershed, Town of Blacksburg.
    - DeBusk, K. and C. Morin. 2007-2008. Reducing Urban Stormwater Impacts Within the Stroubles Creek Watershed.
    - Morris, S., S. Ranganath, and N. Staley. 2004-2005. Stroubles Creek Evaluation and Restoration.
    - Gregg, K. J., S. L. Flowers, A. K. Breitenwischer. 2000. Design of Alternative Water Supply

## Systems for Livestock in Senegal.

- Professional workshops delivered
  - Wetbud: Developing Wetland Water Budgets; March 13, 2013, January 28, 2014, October 15, 2015, April 2, 2016, October 26, 2016, April 18, 2017
  - Stream Restoration Design: Beyond Bankfull, American Ecological Engineering Society Conference; Blacksburg, VA; June 9-10, 2008. Organizing committee and instructor.
  - Introduction to Fluvial Geomorphology, VA/WVA Water Resources Conference; Blacksburg, VA; November 26-27, 2007. Organizing committee and instructor

## INTERNATIONAL EXPERIENCE

May 1999 - Served as a consultant to USAID Community-Based Natural Resource Management Project in Senegal, May 1999. Worked with a team of Senegalese scientists to conduct feasibility study for the improvement of water storage ponds in Kolda, Senegal.

## REFEREED PUBLICATIONS (advisees indicated by \*)

- Ketabchy, M.\*, D.J. Sample, T. Wynn-Thompson, and M.N. Yazdi. 2019. Simulation of watershed-scale practices for mitigating stream thermal pollution due to urbanization. *Science of The Total Environment*, 671, 215–231. doi: 10.1016/j.scitotenv.2019.03.248
- Akinola, A.I.\*, T. Wynn-Thompson, C. G. Olgun, S. Mostaghimi, and M. J. Eick. 2019. Fluvial erosion rate of cohesive streambanks is directly related to the difference in soil and water temperatures. *Journal of Environmental Quality* 48:1741-1748. doi:10.2134/jeq2018.10.0385
- Ketabchy, M.\*, D.J. Sample, T. Wynn-Thompson, M.N. Yazdi. 2018. Thermal evaluation of urbanization using a hybrid approach. *Journal of Environmental Management* 226:457-475. doi:10.1016/j.jenvman.2018.08.016
- Akinola, A.I.\*, T. Wynn-Thompson, C.G. Olgun, F. Cuceoglu, S. Mostaghimi. 2018. Influence of sample holding time on the fluvial erosion of remolded cohesive soils. *Journal of Hydraulic Engineering* 144(8): 04018049. doi:10.1061/(ASCE)HY.1943-7900.0001504.
- Waller, L.J., G.K. Evanylo, L-A.H. Krometis, M.S. Strickland, T. Wynn-Thompson, B.D. Badgley. Engineered and environmental controls of microbial denitrification in established bioretention cells. *Environmental Science & Technology* 52(9): 5358-5366. doi:10.1021/acs.est.7b06704
- Allen, D.C.\*, T.M. Wynn-Thompson, D.A. Kopp, B.J. Cardinale. 2018. Riparian plant biodiversity reduces stream channel migration rates in three rivers in Michigan, USA. *Ecohydrology* 11: e1972. doi:/10.1002/eco.1972
- Hoomehr, S.\*, A.I. Akinola\*, T. Wynn-Thompson, W. Garnand\*, and M. Eick. 2018. Water temperature, pH, and road salt impacts on the fluvial erosion of cohesive streambanks. *Water* 10(3): 302. doi:10.3390/w10030302
- Billian, H., L.H. Krometis, T. Thompson, and C. Hagedorn. 2018. Movement of traditional fecal indicator bacteria and source-tracking targets through septic drainfields. *Science of the Total Environment* 610-611: 1467-1475. doi: 10.1016/j.scitotenv.2017.08.131
- Smyntek P., R. Wagner R, L.H. Krometis, S. Carvajal, T. Wynn-Thompson, and W. Strosnider. 2017. Passive biological treatment of mine water to reduce conductivity: Potential designs, challenges, and research needs. *Journal of Environmental Quality* 46(1): 1-9. doi: 10.2134/jeq2016.06.0216
- Willard L.\*, T. Wynn-Thompson, L.H. Krometis, T. Neher, and B. Badgley. 2017. Does it pay to be

- mature? Assessing the performance of a bioretention cell seven years post-construction. *Journal of Environmental Engineering* 143(9): 04017041. doi: 10.1061/(ASCE)EE.1943-7870.0001232. \*2019 ASCE EWRI Horner Award for outstanding paper.
- Hopkinson, L.C.\* and T.M. Wynn-Thompson. 2016. Comparison of direct and indirect boundary shear stress measurements along vegetated streambanks. *River Research and Applications* 32: 1755-1764. doi: 10.1002/rra.3010
- Allen, D.C.\*, B.J. Cardinale, and T.M. Wynn-Thompson. 2016. Plant biodiversity effects in reducing fluvial erosion are limited to low species diversity. *Ecology* 97(1): 17-24. doi: 10.1890/15-0800.1
- Allen, D.C.\*, B.J. Cardinale, and T.M. Wynn-Thompson. 2014. Toward a better integration of ecological principles into ecogeoscience research. *BioScience* 64(5): 444-454. doi: 10.1093/biosci/biu046
- Resop, J.P., W.C. Hession, and T.M. Wynn-Thompson. 2014. Quantifying the parameter uncertainty in the cross-sectional dimensions for a stream restoration design of a gravel-bed stream. *Journal of Soil and Water Conservation* 69(4): 306-315. doi: 10.2489/jswc.69.4.306
- Niezgoda, S.L., P.R. Peter R. Wilcock, D.W. Baker, J. Mueller Price, J.M. Castro, J.C. Curran, Theresa Wynn-Thompson, J.S. Schwartz, and F.D. Shields, Jr. 2014. Defining a stream restoration body of knowledge as a basis for national certification. *Journal of Hydraulic Engineering* 140: 123-136. doi: 10.1061/(ASCE)HY.1943-7900.0000814
- Plumb, P., S. Day, T. Wynn-Thompson, and J. Seiler. 2013. Relationship between woody plant colonization and Typha L. encroachment in stormwater detention basins. *Environmental Management* 52(4):861-876. doi: 10.1007/s00267-013-0137-2
- Hopkinson, L.C.\* and T.M. Wynn-Thompson. 2012. Streambank shear stress estimates using turbulent kinetic energy. *J. Hydraulic Research* 50(3): 320-323. doi: 10.1080/00221686.2012.684771
- DeBusk, K.M.\* and T.M. Wynn. 2011. Stormwater bioretention for runoff quality and quantity mitigation. *J. Environmental Engineering* 137(9): 800-808. doi: 10.1061/(ASCE)EE.1943-7870.0000388
- Utley, B.C.\*, T.M. Wynn, N. Zhang, and L.E. Teany. 2011. Evaluation of a permittivity sensor for continuous monitoring of suspended sediment concentration. *Transactions of the ASABE*. 54(4): 1299-1309. doi: 10.13031/2013.39032
- Hession, W.C., T. Wynn, L.M. Resler, and J.C. Curran. 2010. Preface: Geomorphology and vegetation: Interactions, dependencies, and feedback loops. *Geomorphology* 116(3-4): 203-205. doi: 10.1016/j.geomorph.2009.12.004
- Hopkinson, L.C.\* and T.M. Wynn. 2009. Vegetation impacts on near bank flow. *Ecohydrology* 2: 404-418. doi: 10.1002/eco.87
- Bartens, J., J.R. Harris, S.D. Day, T.M. Wynn, and J.D. Dove. 2009. Ecologically integrated stormwater distribution using tree canopy and structural tree soils. *Environmental Management* 44(4):646-657. doi: 10.1007/s00267-009-9366-9.
- Ranganath, S.C.\*, W.C. Hession, and T.M. Wynn. 2009. Livestock exclusion influences on riparian vegetation, channel morphology, and benthic macroinvertebrate assemblages. *J. Soil and Water Conservation* 64(1):33-42. doi: 10.2489/jswc.64.1.33
- Bartens, J., S.D. Day, J.R. Harris, J.D. Dove, and T.M. Wynn. 2008. Can urban tree roots improve infiltration through compacted subsoils for stormwater management? *J. Environmental Quality*. 37(6): 2048-2057. doi: 10.2134/jeq2008.0117
- Wynn, T.M., M.B. Henderson\*, and D.H. Vaughan. 2008. Changes in streambank erodibility and critical shear stress due to subaerial processes along a headwater stream, southwestern Virginia, USA. *Geomorphology* 97: 260-273. doi: 10.1016/j.geomorph.2007.08.010

- Piercy, C.\* and T. M. Wynn. 2008. Predicting root density in streambanks. *J. American Water Resources Association* 44(2): 496-508. doi: 10.1111/j.1752-1688.2008.00178.x
- Clark, L. A.\* and T. M. Wynn. 2007. Methods for determining streambank critical shear stress and soil erodibility: Implications for erosion rate predictions. *Transactions of the ASABE* 50(1): 95-106. doi: 10.13031/2013.22415
- Wynn, T. and S. Mostaghimi. 2006. Effects of riparian vegetation on stream bank subaerial processes in southwestern Virginia, USA. *Earth Surface Processes and Landforms* 31:399-413. doi: 10.1002/esp.1252
- Wynn, T. M. and S. Mostaghimi. 2006. The effects of vegetation and soil type on streambank erosion, southwestern Virginia, USA. *J. American Water Resources Association* 42(1):69-82. doi: 10.1111/j.1752-1688.2006.tb03824.x
- Wynn, T., S. Mostaghimi, J. Burger, A. Harpold, M. Henderson, and L.-A. Henry. 2004. Variation in root density along stream banks. *Journal of Environmental Quality* 33: 2030-2039. doi: 10.2134/jeq2004.2030
- Lee, E., S. Mostaghimi, T. M. Wynn. 2002. A model to enhance wetland design and optimize nonpoint source pollution control. *J. American Water Resources Association* 38(1):17-32. doi: 10.1111/j.1752-1688.2002.tb01531.x
- Wynn, T. M. and S. K. Liehr. 2001. Development of a constructed subsurface flow wetland simulation model. *J. Ecological Engineering* 16:519-536. doi: 10.1016/S0925-8574(00)00115-4
- Wynn, T. M., S. Mostaghimi, J. W. Frazee, P. W. McClellan, R. M. Shaffer, and W. M. Aust. 2000. Effect of forest harvesting best management practices on surface water quality in the Virginia Coastal Plain. *Transactions of the ASABE* 43(4):927-936. doi: 10.13031/2013.2989
- Mostaghimi, S., T. M. Gidley (Wynn), and R. A. Cooke. 1994. Effectiveness of different approaches for controlling sediment and nutrient losses from eroded land. *J. Soil and Water Conservation* 49(6):615-621.

#### **NON-REFEREED PUBLICATIONS** (advisees indicated by \*)

- Thompson, T. and A. Akinola\*. 2019. Rising temperatures increase streambank erosion. *Stormwater Management*, 7(4): 22-25.
- Hickman, E.L.\* and T.M. Thompson. 2018. Cross Vane. *Stream Restoration Series, Fact Sheet 1*. 8 pp.
- Hickman, E.L.\* and T.M. Thompson. 2018. Single-Arm Vane. *Stream Restoration Series, Fact Sheet 2*. 7 pp.
- Hickman, E.L.\* and T.M. Thompson. 2018. J-Hook Vane. *Stream Restoration Series, Fact Sheet 3*. 8 pp.
- Hickman, E.L.\* and T.M. Thompson. 2018. W-Weir. *Stream Restoration Series, Fact Sheet 4*. 7 pp.
- Hickman, E.L.\* and T.M. Thompson. 2018. Regenerative Step Pool Storm Conveyance (SPSC). 3 pp.
- Wynn Thompson, T. W.C. Hession, and D. Scott. 2012. StREAM Lab at Virginia Tech. *Resource Magazine*, March/April 2012: 8-9.
- Wynn, T., G. Jennings, and J. Okay. 2007. Stream Restoration in the Southeastern US: Historical Perspectives, Motivations, and Approaches. *The Stream Restoration Networker*. National Center for Earth Surface Dynamics. Summer 2007: 10-12.
- Wynn, T. 2006. Streambank Retreat: A Primer. *American Water Resources Association Watershed Update*, January-March 2006. 4(1). 14 pp.

## CONFERENCE PRESENTATIONS (advisees indicated by \*)

- Withers, U.\*, T. Thompson, E. Smith, and W. C. Hession. 2019. Linking stream restoration success with watershed, practice, and design characteristics. Presented at the Mid-Atlantic Stream Restoration Conference, Baltimore, MD, November 18-20, 2019.
- Thompson, T. and B. Utley\*. 2019. Patterns of streambank erosion along a headwater stream in southwestern Virginia” Implications for estimates of sediment prevented by stream restoration. Presented at the Mid-Atlantic Stream Restoration Conference, Baltimore, MD, November 18-20, 2019.
- Thompson, T. 2019. Important considerations for consistent laboratory erosion testing of cohesive soils. Invited talk at workshop Characterizing and Quantifying Soil Erodibility: Using the Jet Erosion Test (JET) and Other Techniques, North Carolina State University, Raleigh, NC, October 10-11, 2019.
- Thompson, T. 2019. Ecological Engineering: Remembering we are part of the ecosystem. Invited talk at ASABE Annual International Meeting, Boston, MA, July 8-11, 2019.
- Thompson, T. and S. Solis\*. 2019. Estimating flow through rock weirs for use in ecological engineering design. Presented at the American Ecological Engineering Society Conference, Asheville, NC, June 3-6, 2019.
- Sneesby, E., W. Daniels, T. Thompson, Z. Agioutantis, G.R. Whittecar, G. R., and S. Klopff. 2019. Evaluation of a Wetland Water Budget Model for Design of Created Non-tidal Wetlands – Presented at the Society of Wetland Scientists 2019 Annual Meeting, Baltimore, MD, May 28-31. (poster)
- Thompson, T., S. Stone, G.R. Whittecar, and W.L. Daniels. 2019. Evapotranspiration measurement in an emergent marsh using Bowen’s ratio and White’s method. Presented at the ASCE Environmental Water Resources Institute Congress, Pittsburgh, PA, May 19-23, 2019.
- Thompson, T. and S. Solis\*. 2019. Estimating flow through rock weirs for use in ecological engineering design. Presented at the ASCE Environmental Water Resources Institute Congress, Pittsburgh, PA, May 19-23, 2019.
- Thompson, T. 2019. Streambank erosion: Processes, prediction, and the surprising role of enthalpy. Invited talk at the Virginia Water Environment Association Spring Stormwater Seminar, Richmond, VA, April 25, 2019.
- Smith, D.J.\* and T. Wynn-Thompson. 2018. Do roots bind soil: Comparing the physical and biological role of roots in fluvial streambank erosion resistance. Presented at the American Geophysical Union Fall Meeting, Washington, DC, December 10-14, 2018. (poster)
- Stone, S., T. Wynn-Thompson, G.R. Whittecar, W.L. Daniels, and U.S. Withers\*. 2018. Comparison of Bowen’s ratio and White’s method for evapotranspiration measurement in an actively managed hemi-marsh. Presented at the American Geophysical Union Fall Meeting, Washington, DC, December 10-14, 2018.
- Thompson, T.M., M. Ketabchy\*, D. Sample, and M. Yazdi. 2018. Modeling thermal pollution in urbanized watersheds using a hybrid approach. Presented at the EWRI World Environmental and Water Resources Congress, Minneapolis, MN, June 3-7 2018.
- Thompson, T.M. and E. Hickman\*. 2018. Flow resistance in regenerative step pool stormwater conveyance structures (aka RSCs). Presented at the EWRI World Environmental and Water Resources Congress, Minneapolis, MN, June 3-7 2018.
- Thompson, T.M., A. Akinola\*, S. Hoomehr\*, W. Garnand\*, and M. Eick. 2018. Changes in fluvial erosion of cohesive streambank soils with stream chemistry (Invited). Presented at Wolman Club Symposium, Baltimore, MD, June 1, 2018.

- Hickman, E.L.\* and T.M. Thompson. 2017. Flow resistance in regenerative step pool stormwater conveyance structures. Presented at the Mid-Atlantic Stream Restoration Conference, Baltimore, MD, September 20-22, 2017.
- Hickman, E.L.\* and T.M. Thompson. 2017. In-stream structure design guidance – Identifying knowledge gaps. Presented at the Mid-Atlantic Stream Restoration Conference, Baltimore, MD, September 20-22, 2017.
- Stone S., Z. Agioutantis, G.R. Whittecar, W.L. Daniels, T. Thompson, and K. Dobbs. 2017. Wetbud – A free water budget modeling tool for created wetland design. Presented at the 8th International Conference on Sustainable Development in the Minerals Industry, Beijing China, June 25-29, 2017.
- Thompson, T. 2017. Feast or Famine: The challenge of nitrogen removal in treatment wetlands (Invited). Presented at the 2017 Annual Meeting of the Society for Freshwater Sciences, Raleigh, NC, June 4-8, 2017.
- Withers, U.\* and T. Wynn-Thompson. 2017. Using Bowen's Ratio to calculate crop coefficients for a shrub/carr wetland. Presented at the 17th Annual Meeting of the American Ecological Engineering Society, Athens, GA, May 23-25, 2017.
- Hickman, E.\* and T. Wynn-Thompson. 2017. Regenerative stormwater conveyance: Predictions and reality. Presented at the 17th Annual Meeting of the American Ecological Engineering Society, Athens, GA, May 23-25, 2017.
- Akinola, A.\*, T. Thompson, C.G. Olgun, and S. Mostaghimi. 2016. Soil and water temperature effects on the fluvial erosion of cohesive sediments. Poster session presented at the meeting of American Geophysical Union 2016 Conference, San Francisco, CA, December 12-16, 2016.
- Thompson, T. M., W.L. Daniels, G.R. Whittecar, and Z. Agioutantis. 2016. Wetbud: A model for mitigation wetland design. Presented at EcoSummit 2016, Montpelier, France, August 28 - September 1, 2016.
- Krometis, L. H., P. Smyntek, T. Thompson, W. Strosnider, R. Wagner, and S. Carvajal-Sanchez. 2016. Passive biological treatment approaches to reduce conductivity in mining wastewaters. Presented at EcoSummit 2016, Montpelier, France, August 28 - September 1, 2016.
- Daniels, W. L., G.R. Whittecar, T.M. Thompson, Z. Agioutantis, and M. Rolband. 2016. Wetbud – A New Water Budget Modeling Program for Created Wetland Design. In 2016 Annual Meeting, Society of Wetland Scientists. Corpus Christi, TX.
- Whittecar, G. R., W.L. Daniels, T.M. Thompson, Z. Agioutantis, and S.F. Stone. 2016. WETBUD calculates wetland water budgets efficiently using regional weather data for Virginia sites. In 2016 Annual Meeting, Geological Society of America. Denver CO: Geological Society of America. Retrieved from <https://gsa.confex.com/>
- Thompson, T. M., W.L. Daniels, G.R. Whittecar, and Z. Agioutantis. 2016. Wetbud: A wetland hydrologic design model. Poster presented at the meeting of ASCE 2016 World Environmental & Water Resources Congress, West Palm Beach, Florida, May 22-23, 2016.
- Akinola, A.\*, T. Thompson, F. Cuceoglu, C.G. Olgun, and S. Mostaghimi. 2016. Temperature effects on cohesive riverbank erosion. Presented at the meeting of ASCE 2016 World Environmental & Water Resources Congress, West Palm Beach, Florida, May 22-23, 2016.
- Hickman, E.\*, T. Thompson. 2016. In-stream structure design standards: Identifying knowledge gaps. Poster presented at the meeting of ASCE 2016 World Environmental & Water Resources Congress, West Palm Beach, Florida, May 22-23, 2016.
- Withers, U.\*, T. Thompson, L.A. Krometis, and M. Burchell, M. 2016. Are there alternative methods for treating wastewater in the rural Southeast. Poster presented at the 16th Annual Meeting of the American Ecological Engineering Conference, Knoxville, TN, June 7-9, 2016.



- Krometis, L. H., M. Burchell, S. Withers\*, and T. Thompson 2016. A review of alternative wetland systems for wastewater treatment in the rural Southeast. Presented at the 16th Annual Meeting of the American Ecological Engineering Society, Knoxville, TN, June 7-9, 2016.
- Thompson, T. M., W. L. Daniels, G.R. Whittecar, and Z. Agioutantis. 2016. Wetbud: A model for mitigation wetland design. Poster presented at the meeting of 2016 American Ecological Engineering Conference, Knoxville, TN, June 7-9, 2016.
- Akinola A. \*, T. Wynn Thompson, G. Olgun, F. Cuceoglu. 2015. Temperature effects on cohesive riverbank erosion. Presented at the ASCE 2015 Watershed Management Symposium, Reston, VA, August 6, 2015.
- Wynn Thompson T. 2015. The stream restoration body of knowledge. Presented at the Maryland Stream Restoration Association Education Forum, Baltimore, MD, August 20, 2015.
- Waller, L., G. Evanylo, T. Thompson, L. Krometis, B. Badgley. 2015. Factors affecting denitrification potential and the microbial ecology of established bioretention cells across the Mid-Atlantic Region. Annual meeting of the Virginia Branch of the American Society for Microbiology, Richmond, VA, USA.
- Waller, L., , T. Thompson, G. Evanylo, L. Krometis, B. Badgley. 2015. Factors affecting denitrification potential and the microbial ecology of established bioretention cells across the Mid-Atlantic Region. Water Resources Conference of the Virginias, Roanoke, VA, USA.
- Krometis L., T. Wynn Thompson, T. Blair\*, E. Kauffman, W. Hession. 2015. Grade school student changes in STEM self-efficacy following participation in undergraduate-designed laboratory activities. Presented at the American Society of Ecological Engineers meeting, Stillwater, OK, June 3-5, 2015.
- Waller, L., G. Evanylo, T. Thompson, L. Krometis, B. Badgley. 2015. Microbial diversity and denitrification potential in functioning bioretention cells across the Mid-Atlantic Region. General Meeting of the American Society for Microbiology, New Orleans, LA, USA.
- Neher, T., L. Willard\*, T. Thompson, L. Krometis, B. Badgley. 2014. Spatial distributions of total and denitrifying microbial populations in a mature bioretention cell. Annual Meeting of the Virginia Branch of the American Society for Microbiology, Harrisonburg, VA, USA.
- Willard, L. \*, T. Wynn Thompson, L. Krometis, G. Evanylo, B. Badgley. 2014. Does it pay to act mature? Assessing the performance of a bioretention cell 7 years post-construction. 14th Annual American Ecological Engineering Society Meeting, June 9th, 2014, Charleston, SC.
- Moehrle J. \*, T. Wynn Thompson. Evapotranspiration estimates for an herbaceous floodplain wetland. Virginia Association of Wetland Professionals, 26 September 2014, Waverly, VA (poster).
- Wynn Thompson T., W. Daniels, R. Whittecar, Z. Agioutantis. 2014. Wetbud: A wetland hydrologic design model. Virginia Association of Wetland Professionals, 26 September 2014, Waverly, VA (poster).
- Hession, W., D. Scott, Z. Easton, T. Thompson. 2014. Virginia Tech's Stream Research, Education, and Management (StREAM) laboratory. Joint Aquatic and Freshwater Management, Portland, Oregon. May, 2014.
- Wynn-Thompson, T., S. Hoomehr\*, O.W. Parks\*, and M. Eick. 2013. Physicochemical effects of temperature and water chemistry on cohesive channel erosion. American Geophysical Union Fall Meeting, December 9-13, 2013, San Francisco, CA (poster).
- Neuhaus, E.\* and T. Thompson. 2013. Evaluation of a water budget model for use in wetland design. American Ecological Engineering Society, June 10-12, 2013, East Lansing, MI (poster).
- Wynn-Thompson, T., S. Hoomehr\*, O. W. Parks\*, and M. Eick. 2013. Physicochemical effects of temperature and water chemistry on streambank erosion. American Ecological Engineering

- Society, June 10-12, 2013, East Lansing, MI.
- Hoomehr, S.\*, O.W. Parks\*, and T. Wynn-Thompson. 2012. Effect of water temperature on cohesive streambank erosion. American Geophysical Union Fall Meeting. December 3-7. San Francisco, CA (poster).
- Parks, O.W.\* and T.M. Wynn Thompson. 2012. Water temperature and cohesive soil erosion. American Ecological Engineering Society, June 7-9, 2012, Syracuse, NY.
- Hall, K.\* and T. Wynn Thompson. 2012. Surface water flow resistance due to emergent wetland vegetation. American Ecological Engineering Society, June 7-9, 2012, Syracuse, NY.
- Wynn Thompson, T., W. C. Hession, D. Scott, B. Benham, L.-A. Krometis, J. Lutz, L. Teany, and G. Yagow. 2012. Stream Research, Education, and Management Laboratory (StREAM Lab), Virginia Tech, USA. 21st Century Watershed Technology Conference: Improving Water Quality and the Environment, May 27-30, 2012, Bari, Italy.
- Parks, O.W.\*, T. Wynn Thompson, and M. Eick. 2012. Do increases in stream temperature accelerate fluvial streambank erosion? Soil to Sea Geomorphology: East Coast 2012 Symposium, May 18-19, 2012, Philadelphia, PA.
- Wynn Thompson, T.M. and B.C. Utley\*. 2011. Quantifying sediment loads from channel erosion over short time scales. International Symposium on Erosion and Landscape Evolution, September 18-21, 2011, Anchorage, AK.
- Wynn, T.M., W.C. Hession, D. Scott, B. Benham, L.-A. Krometis, J. Lutz, L. Teany. 2011. Sediment Research at the Stream Research, Education, and Management (StREAM) Laboratory, Virginia Tech. Joint USGS-CUAHSI Workshop: In Situ Optical Water Quality Sensor Networks, 8-10 June 2011, Shepherdstown, WV.
- Hopkinson, L.C.\* and T.M.Wynn. 2011. Field methods to determine boundary shear stress along vegetated streambanks. American Ecological Engineering Society Conference, May 22-25, 2011, Asheville, NC.
- Gloe, M.A.\* and T.M. Wynn. 2011. Evaluating a process-based mitigation wetland water budget model. American Ecological Engineering Society Conference, May 22-25, 2011, Asheville, NC (poster).
- Laird, D.\* and T.M. Wynn. 2010. Suspended sediment dynamics in an urban headwater stream. American Water Resources Association, November 1-4, 2010, Philadelphia, PA (poster).
- Wynn, T.M. and W.C. Hession. 2010. The STREAM lab at Virginia Tech: A living laboratory. American Water Resources Association, November 1-4, 2010, Philadelphia, PA (poster).
- Gloe, M.\* and T. Wynn. 2010. Evaluating a process based mitigation wetland water budget model incorporating influences from vegetation. American Water Resources Association, November 1-4, 2010, Philadelphia, PA.
- Utley, B.C.\*, T.M. Wynn, and N. Zhang. 2010. Continuous suspended sediment concentration monitoring using a permittivity sensor. Joint Federal Interagency Conference, June 27 – July 1, 2010, Las Vegas, NV (poster).
- Charonko, C.\* and T.M. Wynn. 2010. Evaluation of an in-situ measurement technique for streambank critical shear stress and soil erodibility. Joint Federal Interagency Conference, June 27 – July 1, 2010, Las Vegas, NV (poster).
- Hopkinson, L.C.\* , and T. M. Wynn. 2009. Application of a boundary shear stress model along vegetated streambanks. American Geophysical Union Fall Meeting. December 14-19. San Francisco, CA.
- Wynn, T.M. and L.C. Hopkinson\*. 2009. Reach-Scale Influence of Riparian Vegetation on Fluvial Erosion. American Geophysical Union Fall Meeting. December 14-19. San Francisco, CA.
- Piercy, C.\*, T. Wynn, A. Ludwig, and W.C. Hession. 2009. Modeling surface water flow through emergent vegetation in a small floodplain wetland (poster). American Geophysical Union Fall

- Meeting. December 14-19. San Francisco, CA.
- Hopkinson, L.C.\* and T.M. Wynn. 2009. Methods to measure boundary shear stress along hydraulically rough streambanks. *Geomorphology and Vegetation: Interactions, Dependencies, and Feedback Loops: The 40th Annual Binghamton Geomorphology Symposium*. October 2-4. Virginia Tech: Blacksburg, VA.
- Bezak, B., E. Yagow, W.C. Hession, and T. Wynn. 2009. Urban channel erosion quantification in upland coastal zone streams of Virginia, USA (poster). *Geomorphology and Vegetation: Interactions, Dependencies, and Feedback Loops: The 40th Annual Binghamton Geomorphology Symposium*, October 2-4, 2009, Virginia Tech: Blacksburg, Virginia.
- Piercy, C.D.\* and T.M. Wynn. The relationship between friction factor and vegetation properties in emergent vegetated flows (poster). *Geomorphology and Vegetation: Interactions, Dependencies, and Feedback Loops: The 40th Annual Binghamton Geomorphology Symposium*, October 2-4, 2009, Blacksburg, VA.
- Hopkinson, L.C.\* and T.M. Wynn. 2009. Determining field methods to measure boundary shear stress along hydraulically rough streambanks (poster). *Geomorphology and Vegetation: Interactions, Dependencies, and Feedback Loops: The 40th Annual Binghamton Geomorphology Symposium*, October 2-4, 2009, Virginia Tech: Blacksburg, Virginia.
- Charonko, C.\* and T. Wynn. 2009. Precision of the multiangle submerged jet test device for soil critical shear stress and soil erodibility (poster). *Geomorphology and Vegetation: Interactions, Dependencies, and Feedback Loops: The 40th Annual Binghamton Geomorphology Symposium*, October 2-4, 2009, Virginia Tech: Blacksburg, Virginia.
- Wynn, T.M., B.C. Utley\*, K.E. Davis\*, and J.A. Simpson\*. 2009. Sediment dynamics in an urbanized headwater stream. 9th Annual American Ecological Engineering Society Meeting, June 23-26, 2009.
- Piercy, C.D.\* and T.M. Wynn. 2009. The relationship between hydraulic resistance and vegetation properties in emergent vegetated flows. 9th Annual American Ecological Engineering Society Meeting, June 23-26, 2009.
- Hopkinson, L.C.\* and T.M. Wynn. 2009. Vegetation impacts on near bank flow. GSA Graduate Research Symposium. March 25. Virginia Tech: Blacksburg, VA.
- Hopkinson, L.C.\* and T.M. Wynn. 2009. Vegetation impacts on near bank flow. Second Annual GSO Research Symposium. March 19. Virginia Tech: Blacksburg, VA.
- Piercy, C.D.\* and T.M. Wynn. 2008. Vegetation-induced roughness in low-Reynold's number flows (poster). American Geophysical Union, December 15-19, 2008, San Francisco, CA.
- Utley, B.C.\* and T.M. Wynn. 2008. Spatial and temporal changes in bank retreat rates in a small headwater stream. American Geophysical Union, December 15-19, 2008, San Francisco, CA.
- Hopkinson, L.C.\* and T.M. Wynn. 2008. Vegetation impacts on near bank flows (poster). American Geophysical Union, December 15-19, 2008, San Francisco, CA.
- Wynn, T.M., B.C. Utley\*, K. Davis\*, J.A. Simpson.\* 2008. Turbidity dynamics in an urbanized headwater stream (poster). American Geophysical Union, December 15-19, 2008, San Francisco, CA.
- Utley, B.C.\* and T.M. Wynn. 2008. Patterns of Streambank Retreat on a Headwater Creek in Southwest Virginia: Implications for Stream Restoration. *Stream Restoration in the Southeast: Advancing the Science and Practice*, November 3-6, 2008, Asheville, NC.
- Hession, W.C., T.M. Wynn, F.M. Smith\*, J.P. Resop. 2008. Quantifying Uncertainty in Stream Restoration Design: What, Why, and How? *Stream Restoration in the Southeast: Advancing the Science and Practice*, November 3-6, 2008, Asheville, NC.
- Sparks, A.\* , L.C. Hopkinson\*, T.M. Wynn. 2008. Changes in boundary shear stress due to streambank vegetation. McNair/MAOP Summer Research Symposium, August 1, 2008. Virginia

- Tech: Blacksburg, VA.
- Johnson, C.\* and T.M. Wynn. 2008. Evaluation of an in situ measurement technique for streambank critical shear stress and soil erodibility. The National Sedimentation Laboratory: 50 Years of Soil and Water Research in a Changing Agricultural Environment, September 3-5, 2008, Oxford, MS.
- Clark, L.A.\* and T.M. Wynn. 2008. A field method for measuring boundary shear stress along vegetated streambanks. The National Sedimentation Laboratory: 50 Years of Soil and Water Research in a Changing Agricultural Environment, September 3-5, 2008, Oxford, MS.
- Utley, B.C.\*, T.M. Wynn, F.M. Smith\*, K.E. Davis\*, K.M. Debusk\*, L.E. Teany, and J.A. Simpson\*. 2008. Evaluation of continuous turbidity monitoring as a method for measuring streambank retreat. ASABE 2008 Annual International Meeting, June 29- July 2, 2008. Providence, RI .
- Piercy, C.D.\* and T. M. Wynn. 2008. Stream classification in the eastern US. AWRA 2008 Summer Specialty Conference: Riparian Ecosystems and Buffers, Working at the Water's Edge, June 30-July 2, 2008. Virginia Beach, VA.
- Clark, L. A.\*, and T. M. Wynn. 2008. Changes in boundary shear stress due to streambank vegetation. AWRA 2008 Summer Specialty Conference: Riparian Ecosystems and Buffers, Working at the Water's Edge, June 30-July 2, 2008. Virginia Beach, VA.
- Piercy, C.D.\* and T. M. Wynn. 2008. Vegetation-induced roughness: A flume study with natural wetland plants. American Ecological Engineering Society Conference, June 11-13, 2008, Blacksburg, VA.
- DeBusk, K. M.\* and T. M. Wynn. 2008. Reductions in stormwater quantity and pollutant loads due to bioretention and structural soil practices. American Ecological Engineering Society Conference, June 11-13, 2008, Blacksburg, VA.
- Johnson, C.\* and T. M. Wynn. 2008. Evaluation of an in situ measurement technique for streambank critical shear stress and soil erodibility. American Ecological Engineering Society Conference, June 11-13, 2008, Blacksburg, VA.
- Clark, L.A.\* and T.M. Wynn. 2008. Changes in boundary shear stress due to streambank vegetation. American Ecological Engineering Society Conference, June 11-13, 2008, Blacksburg, VA.
- Smith, F. M.\*, T. M. Wynn, W. C. Hession, and G. Yagow. 2008. Restoration of Stroubles Creek in Southwest Virginia. American Ecological Engineering Society Conference, June 11-13, 2008, Blacksburg, VA.
- Utley, B.C.\*, T.M. Wynn, C. Johnson\*, F.M. Smith\*, and J.A. Simpson\*. 2008. Spatial and temporal changes in bank erosion rates in a small headwater urban stream. American Ecological Engineering Society Conference, June 11-13, 2008, Blacksburg, VA.
- DeBusk, K.M.\* and T.M. Wynn. 2008. Reductions in stormwater quantity and pollutant loads due to bioretention and CU structural soil practices. American Society of Civil Engineers, Environmental Water Resources Research Institute Conference, May 12-16, 2008, Honolulu, HI.
- Wynn, T.M. 2008. Cohesive soil erosion: Theory and practice. American Society of Civil Engineers, Environmental Water Resources Research Institute Conference, May 12-16, 2008, Honolulu, HI.
- Davis, K.\* and T.M. Wynn. 2008. Evaluation of sensor deployment techniques for continuous turbidity monitoring (poster). 6th Annual Virginia Tech Undergraduate Research and Prospective Graduate Student Conference, Tuesday, April 1, 2008, Blacksburg, VA.
- Clark, L.A.\* and T.M. Wynn. 2007. Boundary shear stress along vegetated streambanks (poster). American Geophysical Union, December 10-14, 2007, San Francisco, CA.
- DeBusk, K.M.\* and T.M. Wynn. 2007. Reductions in stormwater quantity and pollutant loads due to bioretention and structural soil practices. VA/WVA Water Research Symposium; Blacksburg,

- VA; November 26-27, 2007.
- Piercy, C.D.\* and T. M. Wynn. 2007. Vegetation-induced roughness: A flume study with natural wetland plants. VA/WVA Water Research Symposium; Blacksburg, VA; November 26-27, 2007.
- Wynn, T.M., F.M. Smith\*, K.E. Davis\*, K.M. DeBusk\*, B.C. Utley\*, L.E. Teany, and J.A. Simpson\*. 2007. Evaluation of continuous turbidity monitoring as a method for measuring sediment loading from streambank retreat (poster). VA/WVA Water Research Symposium; Blacksburg, VA; November 26-27, 2007.
- Utley, B.C.\* and T. M. Wynn. 2007. Use of capacitance sensors for continuous suspended sediment concentration monitoring. VA/WVA Water Research Symposium; Blacksburg, VA; November 26-27, 2007.
- Resop, J.P., W.C. Hession, J.L. Kozarek, L.A. Clark\*, S.C. Ranganath\*, C.D. Heatwole, and T.M. Wynn. 2007. Comparison of methods for measuring streambank retreat. VA/WVA Water Research Symposium; Blacksburg, VA; November 26-27, 2007.
- Bezak, B., E. Yagow, W.C. Hession, and T. M. Wynn. 2007. Urban channel erosion quantification in upland coastal zone streams of Virginia, USA. VA/WVA Water Research Symposium; Blacksburg, VA; November 26-27, 2007.
- Clark, L.A.\* and T.M. Wynn. 2007. Near bank shear stress along vegetated streambanks. VA/WVA Water Research Symposium; Blacksburg, VA; November 26-27, 2007.
- Wynn, T.M., F.M. Smith\*, K.E. Davis\*, K.M. DeBusk\*, B.C. Utley\*, L.E. Teany, and J.A. Simpson\*. 2007. Evaluation of continuous turbidity monitoring as a method for measuring sediment loading from streambank retreat (poster). Mid-Atlantic Stream Restoration Conference, November 6-8, 2007, Cumberland, MD.
- Clark, L.A.\* and T.M. Wynn. 2007. Boundary shear stress along vegetated streambanks (poster). Complexity in Geomorphology: The 38th Annual Binghamton Geomorphology Symposium, October 5-7, 2007. Duke University, Durham, NC.
- Utley, B.C.\* and T. M. Wynn. 2007. Predicting cohesive soil erosion (poster). Complexity in Geomorphology: The 38th Annual Binghamton Geomorphology Symposium, October 5-7, 2007. Duke University, Durham, NC.
- Harris, J.R., S. Day, N. Bassuk, Q. Xiao, J. Bartens, T. Hafner, J. Dove, and T. M. Wynn. 2007. Integrating the urban forest into stormwater management: A first step in restoring hydrologic function to urbanized environments. American Society for Horticultural Sciences, July 16–19, 2007. Phoenix, AZ
- Crompton-Utley, B.J.\* , T.M. Wynn, and N. Persaud. 2007. Use of capacitance sensors for continuous suspended sediment concentration monitoring. American Society of Agricultural and Biological Engineers, June 17-20, 2007. Minneapolis, MN.
- Piercy, C.D.\* and T. M. Wynn. 2007. Vegetation-induced roughness: A flume study with natural wetland plants. American Society of Agricultural and Biological Engineers, June 17-20, 2007. Minneapolis, MN.
- Clark, L.A.\* and T.M. Wynn. 2007. Methods for determining streambank critical shear stress and soil erodibility: Implications for erosion rate predictions (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.
- Clark, L.A.\* and T.M. Wynn. 2007. Near bank shear stress along vegetated streambanks (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.
- Piercy, C.D.\* and T.M. Wynn. 2007. Predicting root density in streambanks (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.
- Piercy, C.D.\* and T.M. Wynn. 2007. Vegetation-induced roughness: A flume study with natural wetland plants (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.

- Simpson, J.A.\* and T.M. Wynn. 2007. Evaluation of continuous turbidity monitoring as a method for measuring streambank retreat (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.
- Utley, B.C.\* and T.M. Wynn. 2007. Use of capacitance probes for continuous suspended sediment monitoring (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.
- Wynn, T.M., M.B. Henderson\*, and D.H. Vaughan. Changes in critical shear stress and soil erodibility due to soil weathering (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.
- Wynn, T.M., N. A. Staley\*, and B.L. Benham. Modeling channel erosion at the watershed scale: A comparison of GWLF, SWAT, and CONCEPTS (poster). Virginia Tech Dean's Forum on the Environment, February 26, 2007, Blacksburg, VA.
- Wynn, T. M., M. B. Henderson\*, and N. A. Staley\*. 2006. Reconsidering the significance of subaerial processes in streambank retreat. American Geophysical Union Fall Meeting, December 11-15, 2006, San Francisco, CA.
- Piercy, C., T. M. Wynn, and C. Hession\*. 2006. Evaluating a stream classification system in the mid-Atlantic US using discriminant and cluster Analysis (poster). American Water Resources Association Annual Conference, November 6-9, 2006, Baltimore, MD.
- Wynn, T. and C. Hession. 2006. Stream restoration at Virginia Tech (poster). Southeast Regional Stream Conference, October 2-5, 2006, Charlotte, NC.
- Yagow, E., B. Benham, T. M. Wynn, and T. Younos. 2006. Implementation strategies in the Stroubles Creek watershed (poster). 14th National Nonpoint Source Monitoring Workshop, September 24-28, 2006, Minneapolis, Minnesota.
- Staley, N. A. \*, T. M. Wynn, and B. Benham. 2006. Modeling channel erosion at the watershed scale: A comparison of GWLF, SWAT, and CONCEPTS (poster). American Society of Agricultural and Biological Engineers, July 9-12, 2006. Portland, Oregon.
- Henderson, M. B.\*, T. M. Wynn, and D. A. Vaughan. 2006. Changes in stream bank erodibility and critical shear stress due to surface weathering. American Society of Agricultural and Biological Engineers, July 9-12, 2006. Portland, Oregon.
- Clark, L. A. and T. M. Wynn\*. 2006. Methods for determining stream bank critical shear stress: Implications for erosion rate predictions (poster). American Geophysical Union, May 23-26, 2006. Baltimore, Maryland.
- Clark, L. A.\* and T. M. Wynn. 2005. Comparisons of methods for determining stream bank critical shear stress: Implications for erosion rate predictions. ASAE 2005 International Meeting. Tampa, Florida.
- Piercy, C. D.\* and T. M. Wynn. 2005. Predicting root length density in stream banks. ASAE 2005 International Meeting. Tampa, Florida.
- Wynn, T. M. and S. Mostaghimi. 2004. The effects of vegetation on stream bank erosion. ASAE 2004 International Meeting. Ottawa, Ontario.
- Wynn, T. M. and S. Mostaghimi. 2004. The effects of vegetation on stream bank erosion. AWRA Riparian Ecosystems and Buffers: Multi-scale Structure, Function & Management, June 28-30, Olympic Valley, CA.
- Wynn, T. M. and S. Mostaghimi. 2003. Riparian vegetation effects on freeze-thaw cycling and desiccation of stream bank soils. ASAE 2003 International Meeting. Las Vegas, Nevada.
- Wynn, T., S. Mostaghimi, J. Burger, A. Harpold\*, M. Henderson\*, and L.-A. Henry. 2003. Variation in root density along stream banks. ASAE 2003 International Meeting. Las Vegas, Nevada.
- Wynn, T., S. Mostaghimi, J. Burger, A. Harpold, M. Henderson, and L.-A. Henry. 2003. Variation in root density along stream banks. ASCE World Water and Environmental Resources Congress.

- Philadelphia, PA.
- Wynn, T. M., S. Mostaghimi. 2002. The effects of vegetation on stream bank erosion. Chesapeake Bay Watershed Restoration Conference. Baltimore, MD.
- Wynn, T. M., S. Mostaghimi, J. W. Frazee, P. W. McClellan, and R. M. Shaffer. 1999. Effects of forest harvesting best management practices on surface water quality in the Virginia Coastal Plain. ASAE 1999 International Meeting. Toronto, Ontario.
- Lee, E., S. Mostaghimi, and T. M. Wynn. 1999. Simulation model to optimize the control of nonpoint source pollution using constructed wetlands. ASAE 1999 International Meeting. Toronto, Ontario.
- Wynn, T., P. Burdette, and M. Seibert. 1997. The Monocacy River Watershed Water Quality Demonstration Project: A commitment to water quality. 1997 National Watershed Water Quality Symposium. Washington, DC.
- Wynn, T.M. and S.K. Liehr. 1996. Evaluation of a constructed subsurface flow wetland simulation model. WEFTEC '96: The 69th Annual Conference and Exposition of the Water Environment Federation. Dallas, TX.
- Wynn, T. M. and S. K. Liehr. 1996. Development of a constructed subsurface flow wetland simulation model. Society of Wetland Scientists 1996 Conference. Kansas City, MO.
- Gidley (Wynn), T. M., S. Mostaghimi, and T. A. Dillaha. 1992. Comparison of various approaches to soil erosion control from disturbed land. ASAE 1992 International Summer Meeting. Charlotte, NC.

#### **INVITED TALKS**

- My Cohesive Erosion Research Journey. Invited speaker on panel discussion at the ASCE EWRI Conference, May 18-20, 2015, Austin, TX.
- Degradation of Eastern Headwater Streams: Past, Present, and Future. Invited presentation at the Amtrak Club "Soil to Sea Geomorphology" Symposium. Johns Hopkins University, May 17-18, 2013.
- Evaluation of the Multi-Angle Submerged Jet Test Device. Invited presentation at the 9<sup>th</sup> Federal Interagency Sedimentation conference, June 27-July 1, 2010, Las Vegas, NV.
- Reach-Scale Influence of Riparian Vegetation on Fluvial Erosion. Invited presentation at the 2009 American Geophysical Union Fall Meeting. December 14-19, 2009. San Francisco, CA.
- Treating Urban Runoff Using Natural Processes. Invited talk with Kim Steika, Community Design Assistance Center, Mid-Atlantic Chapter of the International Society of Arboriculture Annual Conference, September 29 – October 1, 2008, Blacksburg, VA.
- Stream Restoration Science? Keynote address at the 2008 American Ecological Engineering Society Conference, June 11, 2008, Blacksburg, VA.
- Beyond the Stone Age: The Role of Riparian Vegetation in Stream Morphology. Civil and Environmental Engineering Seminar, University of Virginia, April 4, 2008.
- Stream Restoration Science? Keynote address at the 2007 Mid-Atlantic Stream Restoration Conference, November 6-8, 2007, Cumberland, MD.

#### **TECHNICAL REPORTS**

- Daniels, W.L. T. Thompson, G.R. Whittecar, Z. Agoiutantis, S. Stone, S. Klopff, K. Haering, P. Donovan, J. Jones, L. Lehmann, and B. Hiza. 2019. Wetlands restoration and water budget modeling at Huntley Meadows Park. 2017-2017 Monitoring and Research Final Report. Submitted to Wetland Studies and Solutions and the Peterson Family Foundation. 154 pp.
- Thompson, T.M. 2017. Final report: Improving the success of in-stream structures.

- Submitted to the Chesapeake Bay Trust. 67 pp.
- Thompson, T. M., M.R. Burchell, II, S. Broome, L.A. Krometis, and B. Badgley. 2016. Constructed wetlands to polish wastewater in small rural communities - evaluation of current and potential use to improve water quality trends and protect human health. 29 pp.
- Daniels W., S. Koropchak, K. Haering, P. Donovan, D. Evans, T. Thompson, L. Lehmann, J. Jones. 2015. 2012-2015 Monitoring and Research Summary. Wetlands Restoration at Huntley Meadows Park. 83 pp.
- Evanylo G., D. Sample, T. Thompson, L. Fox, W. Daniels. 2014. Strategies for Reducing Stormwater Pollution by Improved Bioretention Design and Performance Assessment, Final Report.
- Hodges S., J. Fike, T. Thompson, J. Cundiff, R. Grisso, J. Barney, J. Galbraith, J. Ignosh, J. McGee, S. McGinnis, J. Pease, S. Prisley, J. Campbell. 2011. CALS Bioenergy Team. College of Agriculture and Life Sciences at Virginia Tech Integrated, Internal Competitive Grant Program. 4 pp.
- Wynn, T.M., W.C. Hession, and E. Yagow. 2010. Stroubles Creek Restoration Project. Submitted to the Virginia Department of Conservation and Recreation, Richmond, VA. 25 pp.
- Parks, O.W., T.M. Wynn, M. Julian, S. Barlow, and W. Thomas. 2010. Water Quality Evaluation of Equine Farm Management Practices. Submitted to the Prince William Soil and Water Conservation District. 21 pp.
- DeBusk, K.M., T.M. Wynn, and E. Yagow. 2009. Reducing Urban Stormwater Impacts within the Stroubles Creek Watershed. BSE Document Number 2009-0004. Submitted to the Virginia Department of Conservation and Recreation, Richmond, VA. 65 pp.
- Yagow, E., W. C. Hession, T. M. Wynn, and B. Bezak. 2008. Developing Strategies for Urban Channel Erosion Quantification in Upland Coastal Zone Streams. BSE Document Number 2008-0005. Submitted to the Virginia Department of Environmental Quality, Richmond, VA. 33 pp.
- Staley, N. A., T. M. Wynn, B. Benham, and E. Yagow. 2006. *Modeling Channel Erosion at the Watershed Scale: Model Review and Case Study*. BSE Document Number 2006-0009. Submitted to the U.S. Environmental Protection Agency, Washington, DC. 131 pp.
- Yagow, E., B. Benham, T. M. Wynn, and T. Younos. 2006. *Upper Stroubles Creek Watershed TMDL Implementation Plan, Montgomery County, Virginia*. Virginia Departments of Conservation and Recreation and Environmental Quality: Richmond, VA.
- Wynn, T. M., J.-P. Cho, S. Mostaghimi, L. Smock, and G. Garman. 2005. The Polecat Creek Watershed Monitoring Project: Executive Summary. Submitted to the Department of Conservation and Recreation, Richmond, VA. 72 pp.
- Kopeny, M., L. Green, P. Angermeier, T. M. Wynn, P. Diplas, J. Little, M. Aust, C. Burcher, B. Osby, M. Henderson, R. Zeckoski, J. Jessick, K. Greer, V. Singleton, and S. Bowler. 2005. Summary Report Supporting Development of Building Blocks to Prescribe Ecological Flows for the Rivanna River Watershed. Submitted to The Nature Conservancy, Virginia Program, Charlottesville, VA. 138 pp.
- Wynn, T. M. 2004. The Effects of Vegetation on Stream Bank Erosion. PhD Dissertation. Virginia Tech: Blacksburg, VA. 255 pp.
- Mostaghimi, S., T. M. Wynn, J. W. Frazee, P. W. McClellan, R. M. Shaffer, and W. M. Aust. 1999. Effects of Forest Harvesting Best Management Practices on Surface Water Quality in the Virginia Coastal Plain. Report No. FNC0999. Submitted to the Virginia Forestry Association, Richmond, VA. 59 pp.
- Wynn, T. M. and S. Mostaghimi. 1999. Management Feasibility Study for the Tchekey Pond in the



- Rural Community of Ndorna, Arrondissement of Medina Yoro Foula, Department of Kolda, Senegal. USAID Project No. 685-0305. Submitted to the Community Based Natural Resources Management Project, USAID. 19 pp.
- Monocacy River Watershed Water Quality Demonstration Project. 1997. Fiscal Year 1997 Annual Report. Submitted to USDA-CSREES. 63 pp.
- Monocacy River Watershed Water Quality Demonstration Project. 1996. Fiscal Year 1996 Annual Report. Submitted to USDA-CSREES. 61 pp.
- Gidley (Wynn), T. M. 1995. Development of a Constructed Subsurface Flow Wetland Model. M. S. Thesis. North Carolina State University.
- Gidley (Wynn), T. M. 1992. Design of a Constructed Wetland for Control of Dairy Loafing Lot Runoff. Senior Design Project. Virginia Polytechnic Institute and State University.
- Mostaghimi, S., T. A. Dillaha, T. M. Gidley (Wynn), and R. A. Cooke. 1991. Effectiveness of Different Approaches for the Control of Sediment and Nutrient Losses from Disturbed Land. Report No. ST-AC-9112. Submitted to Allied Colloids, Inc., Suffolk, Virginia. 29 pp.

### **FELLOWSHIPS/SCHOLARSHIPS**

- AAUW Selected Professions Fellowship, 2003-2004
- P.E.O. Scholars Award, 2003-2004
- SWCS Kenneth E. Grant Research Scholarship, 2002-2003
- Virginia Tech – General Electric Fellowship, 2002-2004
- AWRA Richard A. Herbert Memorial Education Scholarship, 2002
- Gene and Ina Mae James Graduate Scholarship, 2002
- Waste Policy Institute Graduate Fellowship, 2002
- EPA Science to Achieve Results (STAR) Graduate Fellowship, 1999-2002
- William R. Walker Graduate Research Fellowship, 1999
- Pratt Fellowship, 1998-1999
- National Science Foundation Graduate Research Fellowship, 1992-1995
- Kenan Institute Fellowship, 1993-1994
- NCSU College of Engineering Graduate Fellowship, 1992
- National Merit Scholarship, 1987-1992
- National Society of Professional Engineers Scholarship, 1987-1992

### **HONORS/AWARDS**

- Turner Fellow of Engineering, 2015-2020.
- Outstanding Faculty Member, Alpha Epsilon, 2005
- Graduate Dissertation Award of Merit, Gamma Sigma Delta, 2005
- 1<sup>st</sup> place, PhD poster competition, Torgersen Graduate Research Awards, 2004
- Outstanding Graduate Student, College of Engineering, 2001-2002
- Outstanding Graduate Student, BSE Department, 2000-2001
- Gamma Sigma Delta, Alpha Epsilon, Tau Beta Pi
- Appointed Upper Potomac Tributary Strategies Team Member, 1997
- Graduated *Summa Cum Laude* (3.9/4.0) for M.S. and B.S., 1992 and 1995
- Virginia Tech 1992 Woman of the Year
- Virginia Commonwealth Scholar, 1992
- Outstanding Junior Award, VPI & SU Agricultural Engineering Department, 1991

## PROFESSIONAL ACTIVITIES

- American Ecological Engineering Society, 2005 – present
  - President, 2014-2015; Vice-President, 2013-2014; Treasurer, 2011-2013.
  - Conference co-chair: Beyond Wetlands: Engineering the Landscape, Blacksburg, Virginia, June 11-13, 2008.
- American Society of Civil Engineers, 2005 – present
  - River Restoration Committee: Secretary, 2016-2018; Vice-chair, 2018-2020
- American Geophysical Union, 2004 - present
  - Executive Committee, 2015-2019, Earth and Planetary Surface Processes Section
  - Surface Water Committee, 2008 - 2012
  - Water Quality Committee, 2008 – 2012
- American Society of Agricultural and Biological Engineers, Member, 1989 – present
  - Founded and organized Women in ASABE group to provide networking and mentoring among women members of ASABE, 2004-2006.
  - Conference organizing committee: Self-Sustaining Solutions for Streams, Wetlands, and Watersheds; St. Paul, MN; September 12-15, 2004; Soil Erosion Research, Anchorage, AK, 2011.
  - ED-416, Continuing Professional Development Committee, 2003 - 2005
  - SW-21, Hydrology Committee, Member, 1999 – present
  - SW-224, Pollution by Sediments Committee
    - ◆ Member, 1999 – present
    - ◆ Vice-chair, 2007-2008
    - ◆ Chair, 2009-2010
  - SW-25, Water Resource Structures Committee
    - ◆ Member, 1999 - 2008
    - ◆ Secretary, 2007-2008
  - Treasurer, Student Southeast Region, 1990-1991
  - Student Engineers' Council Representative, VA Tech Student Branch, 1989-1992
- Associate Editor, Transactions of the ASAE and Applied Engineering in Agriculture, 2006-2008
- Reviewer for Design of Urban Runoff Controls Manual of Practice, Water Environment Federation and American Society of Civil Engineers, 2007-2008
- Reviewer for Journal of the American Water Resources Association, Environmental Management, Journal of Environmental Quality, Geomorphology, Hydrological Processes, Journal of Geophysical Research, Journal of Hydraulic Engineering, Journal of Hydrologic Engineering, The Science of the Total Environment, Transactions of the American Society of Agricultural Engineers, Water Research, Water Resources Research, and the U.S. Geological Survey.
- Proposal reviewer for the National Science Foundation, Water Resources Research Institute of The University of North Carolina, North Carolina Sea Grant, University of Minnesota Water Resources Center, and the College of Agriculture and Life Sciences, Virginia Tech.
- Reader panel, Nature, 2009
- National Urban Streams Research Group, Executive Committee
- Virginia Department of Environmental Quality Stream Mitigation Advisory Workgroup, 2005
- VT ADVANCE
  - Pipeline Work Group member, 2003-2004
  - Policy Workgroup member, 2006-2007

- Virginia Stream Alliance
  - Member, 2005-present
  - Organizing committee for the Stream Restoration Lessons Learned Conference, Syria, Virginia, 11/2-3/06
- Search Committee for the Dean of the College of Engineering, 2002
- Mentor to undergraduate student, VPI & SU, 1999-2000
- College of Engineering Graduate Student Committee, 1999-2003
  - Chair, 2002-2003 ; Secretary, 2001-2002
  - Helped organize Professional Development Seminar, October 20, 2001
  - Served as judge for Torgersen Graduate Research Awards, 2002
- Conducted free workshops for local real estate agents on water quality and well testing, 10/8/98 and 1/11/00
- Assisted with NSF-sponsored SAGE-VA (Science and Gender Equity in Virginia) program to encourage girls to choose science-based careers, Spring 1999
- College of Agriculture and Life Sciences committees
  - Nutrient Management, 2011-present
- College of Engineering committees
  - College Undergraduate Curriculum, 2012-present
  - Assistant/Associate Department Heads, 2012-present
- Biological Systems Engineering departmental committees
  - Promotion and Tenure, 2012-2014
  - Curriculum, chair, 2012-present
  - Assessment, 2013-present
  - Awards, 2000-2012
  - Alumni/Public Relations, 1999-2000
  - Graduate and Research, 1999-2000, 2004-2008
  - Placement and Career Planning, 1998-1999

#### **PROFESSIONAL CERTIFICATION/TRAINING**

- EIT Certification - Virginia #0402031564T
- Maryland Certified Nutrient Management Consultant
- OSHA 40-hour HAZWOPER and Confined Space Certifications
- Riparian Buffer Systems short course
- Stream Stability and CONCEPTS short courses, May 2002
- USGS Sediment Data Collection Techniques, October 2003