

# CURRICULUM VITA

**GLENN ALAN TOOTLE**

**ASSOCIATE PROFESSOR**

**DEPARTMENT OF CIVIL, CONSTRUCTION AND ENVIRONMENTAL ENGINEERING**

**UNIVERSITY OF ALABAMA**

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## I. EDUCATION

University of Nevada, Las Vegas Aug 2005  
Department of Civil Engineering and Environmental Engineering  
*Ph.D. in Engineering*

University of Florida May 1987  
Department of Civil Engineering  
*Master of Civil Engineering*

University of Florida Dec 1985  
Department of Civil Engineering  
*Bachelor of Science in Civil Engineering*

## II. EXECUTIVE TRAINING

Naval Post Graduate School, Monterey, CA, *Naval Corporate Business Course*. Two week executive business course for senior (O-6) naval officers. Graduated 2010.

Naval Supply School, Athens, GA (provided by the University of North Carolina, Chapel Hill, MBA Program), *US Navy Advanced Management Planning Course*. Three week executive business course for senior (O-5/O-6) naval officers and GS 13-15. Graduated 2009.

## III. PROFESSIONAL LICENSE

State of Nevada  
Professional Engineer (No. 14169)

State of Florida  
Professional Engineer (No. 48855)

## IV. EMPLOYMENT

### a. ACADEMIC EXPERIENCE

**University of Alabama (Tuscaloosa) – Associate Professor** Aug 2012 to present  
Department of Civil, Construction and Environmental Engineering

**University of Tennessee (Knoxville) – Assistant Professor** Aug 2008 to July 2012  
Department of Civil and Environmental Engineering

**University of Wyoming – Assistant Professor** Aug 2005 to Aug 2008\*  
Department of Civil and Architectural Engineering  
\*Involuntarily recalled to active duty (Aug 2006 to Mar 2007)

**University of Nevada, Las Vegas – Research Assistant and Instructor** Aug 2002 to Aug 2005  
Department of Civil Engineering and Environmental Engineering

**University of Florida – Adjunct Lecturer**  
Department of Civil Engineering

Jan 1997 to Aug 1999

**University of Florida – Teaching Assistant**  
Department of Civil Engineering

Jan 1986 to May 1987

**b. PROFESSIONAL EXPERIENCE**

**United States Navy Reserves, Civil Engineer Corps**

Oct 1988 to Dec 2013

**Spink Corporation (Nimbus Engineers) – Reno, NV**

Aug 1999 to Oct 2000

**Water and Air Research, Inc. – Gainesville, FL**

Aug 1997 to Aug 1999

**Kelley Engineering, Inc. – Gainesville, FL**

May 1987 to Aug 1997

**V. TEACHING AND GRADUATE / UNDERGRADUATE ADVISING**

**a. Principal Areas of Teaching and Research**

Principal areas of teaching and research are water resources (surface water hydrology), modeling, streamflow forecasting, hydroclimatology and paleohydrology.

<i>Number</i>	<i>Title (Enrollment)</i>	<i>Semester</i>	<i>Credits</i>
CE 475/575	Hydrology (44)	UA (Fall 16)	3
CE 378	Water Resources Engineering (72)	UA (Fall 16)	3
CE 378	Water Resources Engineering (68)	UA (Spring 15)	3
CE 271	Glaciology (13)	UA (Summer 15)	4
CE 270/470	Water Resources: European Alps (40)	UA (Summer 15)	4
CE 401	Senior Design (41)	UA (Spring 15)	3
CE 378	Water Resources Engineering (63)	UA (Spring 15)	3
CE 401	Senior Design (32)	UA (Fall 14)	4
CE 671	Hydrologic Modeling (5)	UA (Fall 14)	3
CE 271	Glaciology (8)	UA (Summer 14)	4
CE 270/470	Water Resources: European Alps (33)	UA (Summer 14)	4
CE 401/402	Senior Design (32)	UA (Spring 14)	4
CE 570	Hydrologic Modeling (5)	UA (Fall 13)	3
CE 401/402	Senior Design (23)	UA (Fall 13)	4
CE 270/470	Water Resources: European Alps (24)	UA (Summer 13)	4
CE 401/402	Senior Design (37)	UA (Spring 13)	4
CE 409	Climate and Climate Change: European Alps (13)	UT (Summer 12)	3
CE 400	Senior Design (48)	UT (Spring 12)	3
ENV/GEOL 535	Applied Groundwater Hydrology (26)		3
CE 494	Water Resources II (20)	UT (Fall 11)	3
ENVE 532	Statistical Methods in Water Resources (7)		3
ENV/GEOL 535	Applied Groundwater Hydrology (21)	UT (Spring 11)	3
ENV 691	Climate and Environmental Change (10)		3
CE 494	Water Resources II (37)		3
CE 400	Senior Design (27)	UT (Fall 10)	3
ENV 508	Environmental Engineering Seminar (15)		1
ENV 508	Environmental Engineering Seminar (15)	UT (Spring 10)	1
ENV/GEOL 535	Applied Groundwater Hydrology (22)		3
CE 494	Water Resources II (30)	UT (Fall 09)	3
ENV 595	Stochastic Hydrology (11)		3
CE 416	Hydrology (45)	UT (Spring 09)	3
CE 400	Senior Design (44)		3
CE 416	Hydrology (35)	UT (Fall 08)	3

<i>Number</i>	<i>Title (Enrollment)</i>	<i>Semester</i>	<i>Credits</i>
CE 5880	Advanced Hydrology (7)		3
CE 4350	Design of Hydraulic Eng Systems (16)	UW (Spring 08)	3
CE 4900	Comprehensive Design Experience (15)		3
CE 4800	Hydrology (42)	UW (Fall 07)	3
CE 4820/5810	Groundwater Hydrology (25)		3
CE 5880	Advanced Hydrology (7)	UW (Summer 07)	3
	Recalled to Active Duty	Fall 06 and Spring 07	
CE 5880	Advanced Hydrology (11)		3
CE 4350	Design of Hydraulic Eng Systems (27)	UW (Spring 06)	3
CE 4900	Comprehensive Design Experience (14)		3
CE 4800	Hydrology (32)	UW (Fall 05)	3
CEG 406/606	Engineering Hydrology	UNLV (2002 & 2003)	3
CEG 404/604	Open Channel Flow	UNLV (2003 & 2004)	3
CEG 495/695	Computer Applications in Water Resources	UNLV (2003 & 2004)	3
CWR 4306	Urban Stormwater System Design	UF (1997 to 1999)	3

## **b. Graduate Advising**

### **PhD Committee Chair and Dissertation Advisor**

- Dhondia, Juzer. Proposed UA Dissertation: “Climatic Teleconnections and Forecasting Coastal MS-AL Hydrology.”
  - Sadeghi, Sahar Tabatabaei. Proposed UA Dissertation: “Multi-century Drought in Coastal MS-AL Streamflow.”
- (3) Anderson, SallyRose. UT Dissertation: “Incorporating Climatic Variability in Paleo Reconstructions of Hydrologic Variables,” Graduate UT May 2012. Dissertation published in *Tree Ring Research, Journal of Hydrology* and *Journal of the American Water Resources Association*.
- (2) Aziz, Oubeid. UT PhD Dissertation: “Use of Oceanic-Atmospheric Variability in Hydrologic Forecasting,” Graduated UT Aug 2011. Dissertation published in *Water Resources Research, Journal of Hydrology* and *Journal of Hydrological Sciences*.
- (1) Moser, Cody. UT PhD Dissertation: “Use of Remote Sensing, Climate Reconstructions, and Forecasting for Improved Water Resources Planning and Management,” Graduated UT May 2011. Dissertation published in *International Journal of Remote Sensing*.

### **Master’s Committee Chair and Thesis**

- David, Chris. Proposed UA Thesis: “El Nino and Coastal MS-AL Precipitation and Streamflow.”
- (18) Rudolph, Jordan. UT MSCE Thesis: “Impacts of Beetle Kill on Modeled Streamflow Response in the North Platte River Basin,” Graduated UT December 2012.
- (17) Marks, Jeffrey. UT MSCE Thesis: “Estimates of Glacier Mass Loss and Contribution to Streamflow: Wind River Range (Wyoming, USA), Graduated UT December 2012. Thesis research published in the *ASCE Journal of Hydrologic Engineering*.
- (16) Bowen, Amanda. UT MSCE Thesis: “Upper North Platte River Snowpack Reconstructions,” Graduated UT May 2011.
- (15) Ogle, Ross. UT MSCE Thesis: “Streamflow Reconstructions in the Tennessee Valley Using Tree-Ring Chronologies,” Graduated UT December 2010.
- (14) Geren, Tate. UT MSCE Thesis: “Streamflow Reconstructions of Southern Appalachian (North Carolina) Headwater Gages Using Tree Rings,” Graduated UT December 2010.
- (13) Anderson, SallyRose. UT MSCE Thesis: “Wind River Range Snowpack Reconstruction Using Dendochronology and Sea Surface Temperatures,” Graduated UT December 2010.
- (12) Edmunds, Jake. UW MSCE Thesis: “Glacier Variability in the Teton Range, Wyoming, USA,” Graduated UW May 2010, MSCE. Thesis research published in the *Journal of the American Water Resources Association*.
- (11) Bell, Jeb. Thesis: “Glacier Meltwater Contributions to Streamflow,” Graduated UW December 2009, MSCE. Thesis research published the *ASCE Journal of Hydrologic Engineering*.

- (10) Thompson, Derrick. Thesis: "Glacier Variability (1966 to 2006) in the Wind River Range, Wyoming, USA," Graduated UW December 2009, MSCE. Thesis research published in the ASCE *Journal of Hydrologic Engineering*.
- (9) Aziz, Oubeid. Thesis: "Sea-surface Temperature Variability and Western U.S. Snowfall," Graduated UW August 2009, MSCE. Thesis research published in *Water Resources Research* and the proceedings of the ASCE 2009 World Water & Environmental Resources Congress.
- (8) Follum, Mike. Thesis: "Precipitation Reconstruction in the Wind River Range," Jan 2008 to May 2009," Graduated UW May 2009, MSCE.
- (7) Bellamy, John. Thesis: "Drought Frequency and Duration in Reconstructed Streamflow," Graduated UW December 2008, MSCE. Thesis research published in the ASCE *Journal of Hydrologic Engineering* and in the proceedings of the ASCE 2008 World Water & Environmental Resources Congress.
- (6) Soukup, Ty. Thesis: "Long Lead-time Streamflow Forecasting of the North Platte River Incorporating Oceanic-Atmospheric Climate Variability," Graduated UW May 2008, MSCE. Thesis research published in the *Journal of Hydrology*.
- (5) Moser, Cody. Thesis: "Incorporating Antecedent Soil Moisture Into Streamflow Forecasting Within the North Platte River Basin, Wyoming," Graduated UW May 2008, MSCE. Thesis research published in the proceedings of the ASCE 2008 World Water & Environmental Resources Congress.
- (4) Barnett, Anthony. Thesis: "Upper Green River Basin Streamflow Reconstructions and Drought Variability," Graduated UW December 2007, MSCE. Thesis research published in the ASCE *Journal of Hydrologic Engineering*.
- (3) Cheesbrough, Kyle. Thesis: "Glacial Recession in Wyoming's Wind River Range," Graduated UW December 2007, MSCE. Thesis research published in the *Remote Sensing*.
- (2) Watson, Tom. Thesis: "Wind River Basin (Wyoming) Streamflow Reconstructions," Graduated UW August 2007, MSCE. Thesis research published in the *Journal of the American Water Resources Association*.
- (1) Hunter, Thad. Thesis: "Oceanic-Atmospheric Variability and Western U.S. Snowfall" Graduated UW May 2007, MSCE. Thesis research published in *Geophysical Research Letters* and in the proceedings of the ASCE 2006 World Water & Environmental Resources Congress.

#### **Undergraduate Research Advisor / Mentor**

Lamparter, Tyler. University of Alabama (2016). CE 498

Clements, Emma. University of Alabama (2016). Computer Based Honors Student

David, Chris. University of Alabama (2016). MS-AL Sea Grant.

Roe, Michael. University of Alabama (2016). Choctawhatchee River Tree Ring Proxy Collections.

Lamparter, Tyler. University of Alabama (2016). Choctawhatchee River Tree Ring Proxy Collections.

Thomas, Halle. University of Alabama (2016). Choctawhatchee River Tree Ring Proxy Collections.

Jann, Siera. University of Alabama (2015). Choctawhatchee River Tree Ring Proxy Collections.

Koranda, Caitlin. University of Alabama (2015). Choctawhatchee River Tree Ring Proxy Collections.

Leder, Natalie. University of Alabama (2015). Choctawhatchee River Tree Ring Proxy Collections.

Loria, Aubrey. University of Alabama (2015). Choctawhatchee River Tree Ring Proxy Collections.

Mitchell, Mallory. University of Alabama (2015). Choctawhatchee River Tree Ring Proxy Collections.

Moat, Thomas. University of Alabama (2015). Choctawhatchee River Tree Ring Proxy Collections.

Spector, Sam. University of Alabama (2015). Choctawhatchee River Tree Ring Proxy Collections.

Jann, Siera. University of Alabama (2014). Weather Modification Impacts on Streamflow.

Diamond, Allison. University of Alabama (2014). Weather Modification Impacts on Streamflow.

Walker, Justin. University of Alabama (2014). Weather Modification Impacts on Streamflow.

Jennings, Kyle. University of Alabama Emerging Scholars (2014). Weather Modification Impacts on Streamflow.

Cooley, Dylan. University of Alabama Emerging Scholars (2014). Glacier Variability in the Wind River Range.

Hiles, Katie. University of Alabama Emerging Scholars (2014). Glacier Variability in the Wind River Range.

Lewis, Maddy. University of Alabama Emerging Scholars (2014). Glacier Variability in the Wind River Range.

Lott, Lauren. University of Alabama Emerging Scholars (2014). Glacier Variability in the Wind River Range.

Harper, Claire. State of Wyoming Water Research Program (2013). Weather Modification Impacts on Streamflow.

Maloof, Abigail. State of Wyoming Water Research Program (2013). Weather Modification Impacts on Streamflow.

- Butler, Blair. University of Alabama Emerging Scholars (2013). Glacier Variability in the Teton Range.
- Herndon, Morgan. University of Alabama Emerging Scholars (2013). Glacier Variability in the Teton Range.
- Pelle, Angela. NSF Research Experiences for Undergraduates (REU) (2012). Upper Colorado River Basin Snowpack Reconstructions Incorporating Climate Variability.
- Chapman, Shayna. NSF Research Experiences for Undergraduates (REU) (2012). Upper Colorado River Basin Snowpack Reconstructions Incorporating Climate Variability.
- Ensley, James. NSF Research Experiences for Undergraduates (REU) (2011). Upper Colorado River Basin Snowpack Reconstructions Incorporating Climate Variability.
- Lemons, Ebony. NSF Research Experiences for Undergraduates (REU) (2011). Upper Colorado River Basin Snowpack Reconstructions Incorporating Climate Variability.
- Edmunds, Jake. NSF EPSCoR Summer Research Fellowship (2008). Use of remote sensed products to evaluate glacier variability in the Teton Range (Wyoming).
- Watson, Tom. NSF EPSCoR Summer Research Fellowship (2006). Evaluation of tree-ring and streamflow datasets in the Wind River Range (Wyoming).

## VI. PUBLICATIONS

*Web of Science* articles (H Index = 13)

Chaired graduate students are underlined

### 2015

- (29) Marks, J., J. Piburn, **G. Tootle**, G. Kerr and A. Oubeidillah. 2015. Estimates of Glacier Mass Loss and Contribution to Streamflow in the Wind River Range in Wyoming: Case Study. *American Society of Civil Engineers Journal of Hydrologic Engineering*, DOI: 10.1061/(ASCE)HE.1943-5584.0001050.

### 2014

- (28) Oubeidillah, A.A., S.C. Kao, M. Ashfaq, B. S. Naz, and **G. Tootle**. 2014. A Large-Scale, High-Resolution Hydrological Model Parameter Dataset for Climate Change Impact Assessment for the Conterminous United States. *Hydrology and Earth System Sciences*, 18:67–84.

### 2013

- (27) Bellamy, J., **G.A. Tootle**, S. Huzurbazar, L. Pochop and A. Barnett, 2013. Case Study of Drought Frequency and Risk in Upper Green River Basin Reconstructed Streamflow, Wyoming (USA). *American Society of Civil Engineers Journal of Hydrologic Engineering*, 18:888-896.

### 2012

- (26) Acharya, A., T. Piechota, and **G. Tootle**, 2012. Quantitative Assessment of Climate Change Impacts on the Hydrology of the North Platte River Watershed, Wyoming. *American Society of Civil Engineers Journal of Hydrologic Engineering*, 17:1071-1083.
- (25) Anderson, S., **G. Tootle**, and H. Grissino-Mayer, 2012. Reconstructions of Soil Moisture for the Upper Colorado River Basin using Tree-Ring Chronologies, 2012. *Journal of the American Water Resources Association*, 48(4):849-858.
- (24) Anderson, S., O. Aziz, **G. Tootle**, H. Grissino-Mayer and A. Barnett, 2012. Using Pacific Ocean Climatic Variability to Improve Hydrologic Reconstructions. *Journal of Hydrology*, 434:69–77.
- (23) Bell, J., **G. Tootle**, G. Kerr, L. Pochop and R. Sivanpillai, 2012. Glacier Impacts on Summer Streamflow in the Wind River Range, Wyoming, USA. *American Society of Civil Engineers Journal of Hydrologic Engineering*, 17(4):521-527.
- (22) Edmunds, J., **G. Tootle**, G. Kerr, R. Sivanpillai and L. Pochop, 2012. Glacier Variability (1967-2006) in the Teton Range, Wyoming, USA. *Journal of the American Water Resources Association*, 48(1):187-196.
- (21) Anderson, S., C. Moser, **G.A. Tootle**, H.D. Grissino-Mayer, J. Timilsena and T. Piechota, 2012. Snowpack Reconstructions Incorporating Climate in the Upper Green River Basin (Wyoming). *Tree Ring Research*, 68(2):105-144.
- (20) Oubeidillah, A.A., **G.A. Tootle** and S. Anderson, 2012. Atlantic Ocean Sea Surface Temperatures and Adour Garonne (France) Regional Streamflow Variability. *Journal of Hydrological Sciences*, 57(3):496 – 506.

### 2011

- (19) Lamb, K.W., T.C. Piechota, O.A. Aziz and **G. A. Tootle**, 2011. Basis for Extending Long-Term Streamflow Forecasts in the Colorado River Basin. *American Society of Civil Engineers Journal of Hydrologic Engineering*, 16(12):1000-1008.

- (18) Oubeidillah, A.A., G.A. Tootle, C. Moser, T. Piechota and K. Lamb, 2011. Upper Colorado River and Great Basin Streamflow and Snowpack Forecasting using Pacific Oceanic-Atmospheric Variability. *Journal of Hydrology*, 410(3-4):169-177.
- (17) Acharya, A., T. Piechota, H. Stephen and **G. Tootle**, 2011. Modeled Streamflow Response Under Weather Modification in the North Platte River Watershed. *Journal of Hydrology*, 409(1-2):305-314.
- (16) Thompson, D., G. Tootle, G. Kerr, R. Sivanpillai and L. Pochop, 2011. Glacier Variability in the Wind River Range, Wyoming, USA. *American Society of Civil Engineers Journal of Hydrologic Engineering*, 16(10):798-805.
- (15) Moser, C.L., G. A. Tootle, A.A. Oubeidillah, and V. Lakshmi, 2011. A comparison of SNOTEL and AMSR-E snow water equivalent datasets in western U.S. watersheds. *International Journal of Remote Sensing*, 32(21):6611-6629.

### **2010**

- (14) Aziz, O. A., G. A. Tootle, S. T. Gray, and T. C. Piechota, 2010. Identification of Pacific Ocean sea surface temperature influences of Upper Colorado River Basin snowpack. *Water Resources Research*, 46:W07536.
- (13) Barnett, F.A., S. Gray and G. Tootle, 2010. Upper Green River Basin (United States) Streamflow Reconstructions. *American Society of Civil Engineers Journal of Hydrologic Engineering*, 15(7):567-579.

### **2009**

- (12) Cheesbrough, K., J. Edmunds, G. Tootle, G. Kerr and L. Pochop, 2009. Estimated Wind River Range (Wyoming, USA) Glacier Melt Water Contributions to Agriculture. *Remote Sensing*, 2009, 1(4):818-828.
- (11) Soukup, T., O., Aziz, G. Tootle, S. Wulff and T. Piechota, 2009. Long Lead-time Streamflow Forecasting of the North Platte River Incorporating Oceanic-Atmospheric Climate Variability. *Journal of Hydrology*, 368(1-4):131-142.
- (10) Timilsena, J., T.C. Piechota, **G. Tootle** and A. Singh, 2009. Associations of Interdecadal/Interannual Climate Variability and Long-Term Colorado River Basin Streamflow. *Journal of Hydrology*, 365(3-4), 289-301.
- (9) Watson, T., F.A. Barnett, S. Gray and G. Tootle, 2009. Reconstructed Streamflow for the Headwaters of the Wind River, Wyoming USA. *Journal of the American Water Resources Association*, 45(1):224-236.

### **2008**

- (8) Kalra, A., T.C. Piechota, R. Davies, and **G.A. Tootle**, 2008. Changes in U.S. Streamflow and Western U.S. Snowpack. *American Society of Civil Engineers Journal of Hydrologic Engineering*, 13(3), 156-163 (Nominated, Outstanding Technical Paper for 2008).
- (7) **Tootle, G.A.**, T.C. Piechota and F. Gutierrez, 2008. The Relationships between Pacific and Atlantic Ocean Sea Surface Temperatures and Colombian Streamflow Variability. *Journal of Hydrology*, 349(3-4), 268-276.

### **2007**

- (6) **Tootle, G.A.**, A.K. Singh, T.C. Piechota and I. Farnham, 2007. Long Lead-Time Forecasting of U.S. Streamflow Using Partial Least Squares Regression. *American Society of Civil Engineers Journal of Hydrologic Engineering*, 12(5), 442-451.
- (5) Timilsena, J., T.C. Piechota, H. Hidalgo and **G.A. Tootle**, 2007. Five Hundred Years of Hydrological Drought in the Colorado River Basin. *Journal of the American Water Resources Association*, 43(3), 798-812.

### **2006**

- (4) **Tootle, G. A.**, and T. C. Piechota, 2006. Relationships between Pacific and Atlantic ocean sea surface temperatures and U.S. streamflow variability, *Water Resources Research*, 42(7):W07411.
- (3) Hunter, T., Tootle, G.A., and T.C. Piechota, 2006. Oceanic-atmospheric variability and western U.S. snowfall. *Geophysical Research Letters*, 33(13):L13706.

### **2005**

- (2) **Tootle, G.A.**, T.C. Piechota and A.K. Singh, 2005. Coupled Oceanic / Atmospheric Variability and United States Streamflow. *Water Resources Research*, 41(12):W12408.

### **2004**

- (1) **Tootle, G.A.**, and T.C. Piechota, 2004. Suwannee River Long-Range Streamflow Forecasts based on Seasonal Climate Predictors. *Journal of the American Water Resources Association*, 40(2), 523-532.

### **Peer-reviewed book chapters, technical notes, feature and on-line articles**

- Maloof, A., J. Piburn, G. Tootle and G. Kerr, 2014. Recent Alpine Glacier Variability: Wind River Range, Wyoming, USA. *Geosciences*, 4(191-201); doi:10.3390/geosciences4030191.

- Tootle G.A.**, T.C. Piechota, O. Aziz, W.P. Miller, V. Lakshmi, J.A. Dracup and C. Jerla, 2009. The 2009–2010 El Niño: Hydrologic Relief to U.S. Regions? *American Geophysical Union EOS Transactions*, 90(50), 481-482.
- Tootle, G.A.**, and T.C. Piechota, 2006. *Climate Variability, Water Supply, and Drought in Upper Colorado River Basin*. In *Climate Variability, Climate Change and Water Resources Engineering (Book Chapter)*. American Society of Civil Engineers, pp. 132-142. ISBN 0-7844-0824-6.
- Tootle, G.A.**, T. Mirti, and T.C. Piechota, 2005. Magnitude and Frequency of 2004 Hurricane Rainfall in Florida (Technical Note). *Journal of Floodplain Management*, 5(1), 32-37.
- Piechota, T.C., Hidalgo, H., Timilsena, J., and **G.A. Tootle**, 2004. Western U.S. drought: How bad is it? *American Geophysical Union EOS Transactions*, 85(32), 301-308.
- Tootle, G.A.**, and T.C. Piechota, 2004. Identification of Climate Teleconnections and Forecasting of the Upper Truckee River (Invited Paper). *Journal of the Nevada Water Resources Association*, 1(1), 7-19.

#### **Peer-reviewed proceedings**

- Moser, C., O. Aziz, **G. Tootle**, V. Lakshmi and G. Kerr, 2009. A Comparison of SNOTEL and AMSR-E Snow Water Equivalent Datasets in Western U.S. Watersheds. Proceedings of the Third International Workshop on Knowledge Discovery from Sensor Data (SensorKDD-2009), June 28, 2009, Paris, France.
- Thompson, D., J. Bell, J. Edmunds, **G. Tootle** and G. Kerr, 2009. Glacier Variability in Wyoming's Wind River Range and Teton Range. Proceedings of the American Water Resources Association 2009 Spring Specialty Conference, May 4-6, 2009, Anchorage, Alaska.
- Stephen, H., **G. Tootle**, C. Moser and O. Aziz, 2009. Weather Modification and Climate Variability Impacts on Streamflow. Proceedings of the American Water Resources Association 2009 Spring Specialty Conference, May 4-6, 2009, Anchorage, Alaska.

#### **ASCE Conference Proceedings**

- Aziz, O., **G. Tootle**, T. Piechota and C. Moser, 2010. 2009-2010 El Niño: Predicted Hydrologic Response in the United States. Proceedings of the ASCE World Water & Environmental Resources Congress 2010, May 16-21, 2010, Providence, Rhode Island.
- Aziz, O. and **G. Tootle**, 2009. Paleo Pacific Ocean Sea Surface Temperature Variability and Upper Colorado River Basin Streamflow. Proceedings of the ASCE World Water & Environmental Resources Congress 2009, May 17-22, 2009, Kansas City, Missouri.
- Bellamy, J., **G. Tootle**, G. Kerr and L. Pochop, 2008. Frequency and Duration of Drought in the Green River Basin, WY, USA. Proceedings of the ASCE World Water & Environmental Resources Congress 2008, May 11-17, 2008, Honolulu, HI.
- Moser, C., T. Soukup, **G. Tootle** and T. Piechota, 2008. An Expert System Approach to Improve Streamflow Forecasting in the North Platte River Basin, Wyoming, USA. Proceedings of the ASCE World Water & Environmental Resources Congress 2008, May 11-17, 2008, Honolulu, HI.
- Tootle, G.A.**, T. Hunter and T.C. Piechota, 2006. Pacific Oceanic / Atmospheric Variability and the Wind River Range. Proceedings of the ASCE World Water & Environmental Resources Congress 2006, May 21-25, 2006, Omaha, NE.
- Kalra, A., T.C. Piechota, R. Davies and **G.A. Tootle**, 2006. Is Climate Change Evident in U.S. Streamflow?. Proceedings of the ASCE World Water & Environmental Resources Congress 2006, May 21-25, 2006, Omaha, NE.
- Tootle, G.A.**, and T.C. Piechota, 2005. Interdecadal and Interannual Oceanic / Atmospheric Variability and United States Seasonal Streamflow. Proceedings of the ASCE World Water & Environmental Resources Congress 2005, May 16-20, 2005, Anchorage, AK.
- Tootle, G.A.**, and T.C. Piechota, 2004. Forecasting of Lower Colorado River Basin Streamflow Using Pacific Ocean Sea Surface Temperatures and ENSO. Proceedings of the ASCE World Water & Environmental Resources Congress - Arid Lands Symposium, June 26-July 1, 2004, Salt Lake City, Utah, American Society of Civil Engineers, Washington D.C.
- Tootle, G.A.**, and T.C. Piechota, 2003. Drought and the 2002-2003 El Niño in the Southwest U.S., Proceedings of the ASCE World Water & Environmental Resources Congress 2003, June 22-26, 2003, Philadelphia, Pennsylvania, American Society of Civil Engineers, Washington D.C.

- Motz, L.H., P.A. Chadik, B.L. Koopman, K. Hatfield, R.L. Hutton, **G.A. Tootle** and R.W. Watts, 1992. Use of Groundwater Models to Simulate Remediation. Proceedings of the Hydraulic Engineering Sessions at ASCE Water Forum '92 (pages 281-286, ASCE 0-87262-879-5, 1280 pages).
- Motz, L.H., K. Hatfield and **G.A. Tootle**, 1991. Transport Models to Simulate Nitrate Contamination. ASCE Symposium on Ground Water - Proceedings of the International Symposium (pages 238-243, ASCE 0-87262-817-5, 336 pages).
- Tootle, G.A.**, K. Hatfield and L.H. Motz, 1989. Spreadsheet Applications to Analytical Groundwater Modeling of the Floridan Aquifer. Computing in Civil Engineering: Computers in Engineering Practice - Proceedings of the ASCE Sixth Conference (pages 685-690, ASCE 0-87262-722-5, 961 pages).
- Tootle, G.A.** and K. Hatfield, 1988. Spreadsheet Applications to Stormwater Management. Computing in Civil Engineering: Microcomputers to Supercomputers - Proceedings of the ASCE Fifth Conference (pages 700-709, ASCE 0-87262-635-0, 860 pages).

## VII. INVITED PRESENTATIONS

### a. Presentations at International and National Conferences

- Lamb, K., J. Fayne, A. Kalra, W.P. Miller, V. Lakshmi, G. Tootle and T. Piechota, 2016. 2015-16 ENSO, Precipitation, and the Ridiculously Resilient Ridge. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-16, 2016, San Francisco, California.
- Tootle, G., M. Therrell, V. Lakshmi, W.P. Miller, K. Lamb, A. Kalra and N. Santos, 2016. The 2015-2016 El Niño and Alabama-Mississippi Hydrologic Response. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-16, 2016, San Francisco, California.
- Pathak, P., A. Kalra, M. Bernardez, K. Lamb, W.P. Miller, G. Tootle, J. Fayne, V. Lakshmi, N. Santos and T. Piechota, 2016. Trends and shift changes in the SWE in the western US. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-16, 2016, San Francisco, California.
- Santos, N., T. Piechota, W.P. Miller, K. Lamb, V. Lakshmi, G. Tootle, A. Kalra, M. Bernardez, J. Fayne and P. Pathak, 2016. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-16, 2016, San Francisco, California.
- Tootle, G., M. Therrell, T. Moat and M. Meko, 2015. Seasonal Streamflow Reconstructions of the Choctawhatchee River (AL-USA). Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-18, 2015, San Francisco, California.
- Lamb, K., W. Miller, V. Lakshmi, T. Piechota, G. Tootle, N. Santos, and A. Kalra, 2015. From Parched to Pouring: Can the 2015 – 2016 El Niño Event Bring Drought Relief to California and the Western U.S. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-18, 2015, San Francisco, California.
- Miller, W., K. Lamb, T. Piechota, V. Lakshmi, N. Santos, G. Tootle, A. Kalra and J. Fayne, 2015. An Application of Advanced Ensemble Streamflow Prediction Methods to Assess Potential Impacts of the 2015 – 2016 ENSO Event over the Colorado River Basin. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-18, 2015, San Francisco, California.
- Greer, A., M. Therrell and G. Tootle, 2014. Hydrologic Drought Reconstruction Potential in the Southeast US. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 15-19, 2014, San Francisco, California.
- Pelle, A., G. Tootle, L. Johnson, R. Cifelli and C. Hsu, 2014. Threshold Frequency Estimation for the Russian River, CA. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 15-19, 2014, San Francisco, California.
- Tootle, G., A. Pelle, A. Oubeidillah and G. Kerr, 2014. Relating Snowpack and Snowmelt in Weather Modified Watersheds. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 15-19, 2014, San Francisco, California.
- Maloof A., B. Fang, G. Tootle, V. Lakshmi and G. Kerr, 2013. Glacier Area and Mass Variability in the Wind River Range (Wyoming, USA): 2006 to 2012. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 9-13, 2013, San Francisco, California.
- Tootle, G., S. Anderson, A. Maloof and G. Kerr, 2013. Drought in Paleo and Future Streamflow: North Platte River Basin (Colorado & Wyoming, USA). Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 9-13, 2013, San Francisco, California.



- Tootle, G., S. Anderson and H. Grissino-Mayer, 2012. Reconstructions of Soil Moisture for the Upper Colorado River Basin using Tree Ring Chronologies. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 3-7, 2012, San Francisco, California.
- Pelle, A., S. Chapman, S. Anderson, A. Oubeidallah, G. Tootle and H. Grissino-Mayer, 2012. Climatic Drivers of Upper Colorado River Basin Dendrochronologic and Hydrologic Datasets. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 3-7, 2012, San Francisco, California.
- Conroy, J., S. Mandia, J. Abraham, S. Moffitt and G. Tootle, 2012. Environmental Litigation and the Role of Climate Scientists. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 3-7, 2012, San Francisco, California.
- Anderson, S., G. Tootle, S. Parkinson, P. Holbrook and D. Blestrud, 2012. Long Lead-Time Forecasting of Snowpack and Precipitation in the Upper Snake River Basin using Pacific Oceanic-Atmospheric Variability. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 3-7, 2012, San Francisco, California.
- Kerr, G., J. Piburn, J. Rudolph, G. Tootle and J. Marks, 2012. Use of Remote Sensed Imagery to Evaluate Land Cover Change: North Platte River Basin. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 3-7, 2012, San Francisco, California.
- Tootle, G., W. P. Miller, G. DeRosa and G. Kerr, 2011. Paleo Streamflow Variability in Glaciated and Non-Glaciated Watersheds: Wind River Range (Wyoming, USA). Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 5-9, 2011, San Francisco, California.
- Marks, J., G. Tootle and G. Kerr, 2011. Estimates of Glacier Mass Loss and Contributions to Streamflow: Wind River Range (Wyoming, USA). Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 5-9, 2011, San Francisco, California.
- Anderson, S., G. Tootle, O. Aziz, C. Moser, and H. Grissino-Mayer, 2011. Reconstructions of Upper Green River Basin Snowpack Using Pacific Ocean Climatic Variability. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 5-9, 2011, San Francisco, California.
- Aziz, O., G. Tootle and C. Moser, 2011. Colorado River and Great Basin Streamflow and Snowpack Forecasting using Pacific Oceanic-Atmospheric Variability. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 5-9, 2011, San Francisco, California.
- Acharya, A., T. Piechota and G. Tootle. Development of Streamflow Projections for Various Climate Scenarios over the North Platte Watershed, Wyoming, 2011. Presentation at *ASCE World Water & Environmental Resources Congress 2011*, May 22-26, 2011, Palm Springs, California.
- Moser, C., R. Ogle, A. Bowen and G. Tootle, 2010. A Tree-Ring Reconstruction of Precipitation in the Tennessee Valley. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-18, 2010, San Francisco, California.
- Acharya, A., T. Piechota, H. Stephen and G. Tootle, 2010. Weather Modification and its Hydrologic Impact on the North Platte Watershed, Wyoming. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-18, 2010, San Francisco, California.
- Aziz, O., G. Tootle and S. Anderson, 2010. Identification of Atlantic Ocean Sea Surface Temperature Drivers of French Streamflow. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-18, 2010, San Francisco, California.
- Anderson, S., C. Moser, G. Tootle, H. Grissino-Mayer and G. Kerr, 2010. Snowpack Reconstructions Incorporating Climate for Mountain Ranges Implementing Weather Modification. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-18, 2010, San Francisco, California.
- Aziz, O., G. Tootle, T. Piechota and C. Moser, 2010. 2009-2010 El Niño: Predicted Hydrologic Response in the United States. Proceedings of the *ASCE World Water & Environmental Resources Congress 2010*, May 16-21, 2010, Providence, Rhode Island.
- Tootle, G.A., G. Kerr, C. Moser, S. Anderson and H. Stephen, 2010. Weather Modification and the North Platte River Basin, Wyoming. Presentation at the *Weather Modification Association Annual Meeting*, April 22, 2010, Santa Fe, New Mexico.
- Tootle, G.A., G. Kerr, D. Thompson, J. Bell and L. Pochop, 2009. Glacier Variability (1966 to 2006) in the Wind River Range, Wyoming, USA. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-19, 2009, San Francisco, California.

- Aziz, O., G.A. Tootle, T.C. Piechota, W.P. Miller, J.A. Dracup and C. Jerla, 2009. The 2009–2010 El Niño: Hydrologic Relief to U.S. Regions? Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-19, 2009, San Francisco, California.
- Stephen, H., G. Tootle, C. Moser and O. Aziz, 2009. Weather Modification and Climate Variability Impacts on Streamflow. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 12-19, 2009, San Francisco, California.
- Moser, C., O. Aziz, G. Tootle, V. Lakshmi and G. Kerr, 2009. A Comparison of SNOTEL and AMSR-E Snow Water Equivalent Datasets in Western U.S. Watersheds. Presentation at the *Third International Workshop on Knowledge Discovery from Sensor Data (SensorKDD-2009)*, June 28, 2009, Paris, France.
- Miller, P. and T. Piechota, 2009. Analysis of Hydrologic Variability Over the Colorado River Basin under Changing Climate Conditions. Presented by G. Tootle at *ASCE World Water & Environmental Resources Congress 2009*, May 17-22, 2009, Kansas City, Missouri.
- Aziz, O. and G. Tootle, 2009. Paleo Pacific Ocean Sea Surface Temperature Variability and Upper Colorado River Basin Streamflow. Presentation at *ASCE World Water & Environmental Resources Congress 2009*, May 17-22, 2009, Kansas City, Missouri.
- Thompson, D., J. Bell, J. Edmunds, G. Tootle and G. Kerr, 2009. Glacier Variability in Wyoming's Wind River Range and Teton Range. Presentation at *American Water Resources Association 2009 Spring Specialty Conference*, May 4-6, 2009, Anchorage, Alaska.
- Stephen, H., G. Tootle, C. Moser and O. Aziz, 2009. Weather Modification and Climate Variability Impacts on Streamflow. Presentation at *American Water Resources Association 2009 Spring Specialty Conference*, May 4-6, 2009, Anchorage, Alaska.
- Soukup, T., O. Aziz, C. Moser and G. Tootle, 2008. Incorporating Climate into a Long Lead-Time Non-parametric Streamflow Forecast. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 13-18, 2008, San Francisco, California.
- Follum, M., S. Gray and G. Tootle, 2008. Precipitation Reconstructions in the Wind River Range, Wyoming, USA. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 13-18, 2008, San Francisco, California.
- Aziz, O. and G. Tootle, 2008. Pacific Ocean Sea Surface Temperature Variability and Western U.S. Snowpack. Presentation at *CUASHI Annual Meeting*, Boulder, CO.
- Bellamy, J., G. Tootle, G. Kerr and L. Pochop, 2008. Frequency and Duration of Drought in the Green River Basin, WY, USA. Presentation at *ASCE World Water & Environmental Resources Congress 2008*, May 11-17, 2008, Honolulu, HI.
- Moser, C., T. Soukup, G. Tootle and T. Piechota, 2008. An Expert System Approach to Improve Streamflow Forecasting in the North Platte River Basin, Wyoming, USA. Presentation at *ASCE World Water & Environmental Resources Congress 2008*, May 11-17, 2008, Honolulu, HI.
- Edmunds, J., M. Follum, and G. Tootle, 2008. Glacial Change in the Wind River Range. Presentation at *Western Snow Conference*, April 14-17, 2008, Hood River, OR.
- Barnett, F.A., T. Watson, S. Gray and G. Tootle, 2007. Streamflow Reconstructions and Periods of Drought in the Upper Green River Basin, Wyoming, USA. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 10-14, 2007, San Francisco, California.
- Cheesbrough, K., J. Edmunds, G. Tootle, G. Kerr and L. Pochop, 2007. Glacial Change in the Wind River Range. Presentation at *American Geophysical Union (AGU) Fall Meeting*, December 10-14, 2007, San Francisco, California. Awarded Outstanding Presentation (Student Division), 2007.
- Tootle, G., G. Kerr, K. Cheesbrough, J. Edmunds and L. Pochop, 2007. Glacial Change in the Wind River Range. Presentation at *International Commission on Snow and Ice Hydrology (ICSIH) – Glaciers in Watershed and Global Hydrology Workshop*, August 27-31, 2007, Obergurgl, Austria.
- Tootle, G.A., T. Hunter and T.C. Piechota, 2006. Pacific Oceanic / Atmospheric Variability and the Wind River Range. Presentation at *ASCE World Water & Environmental Resources Congress 2006*, May 21-25, 2006, Omaha, NE.
- Kalra, A., T.C. Piechota, R. Davies and G.A. Tootle, 2006. Is Climate Change Evident in U.S. Streamflow?. Presentation at *ASCE World Water & Environmental Resources Congress 2006*, May 21-25, 2006, Omaha, NE.

- Tootle, G.A., and T.C. Piechota, 2005. Coupled Oceanic / Atmospheric Variability and United States Streamflow. Presented at *American Geophysical Union (AGU) Fall Meeting*, December 4-9, 2005, San Francisco, California.
- Piechota, T.C., R. Davies, G.A. Tootle and A. Kalra, 2005. Trends and Step Changes in U.S. Streamflow Data. Presented at *American Geophysical Union (AGU) Fall Meeting*, December 4-9, 2005, San Francisco, California.
- Tootle, G.A., and T.C. Piechota, 2005. Long Lead-time Streamflow Forecasting using Pacific Ocean Climate Teleconnections. Presented at *ASCE World Water & Environmental Resources Congress 2005*, May 16-20, 2005, Anchorage, AK.
- Tootle, G.A., and T.C. Piechota, 2004. Hydrologic Impacts of the Pacific Decadal Oscillation on ENSO Influenced Regions. Presented at *American Geophysical Union (AGU) Fall Meeting*, December 13-17, 2004, San Francisco, California.
- Timilsena, J., T.C. Piechota, and G.A. Tootle, 2004. Hydrologic Drought in the Colorado River. Presented at *American Geophysical Union (AGU) Fall Meeting*, December 13-17, 2004, San Francisco, California.
- Tootle, G.A., J. Timilsena, and T.C. Piechota, 2004. Magnitude and Frequency of Western U.S. Droughts. Presented at *American Institute of Hydrology (AIH) Annual Meeting*, October 18-21, 2004, Las Vegas, Nevada.
- Tootle, G.A., and T.C. Piechota, 2004. Forecasting of Lower Colorado River Basin Streamflow Using Pacific Ocean Sea Surface Temperatures and ENSO. Presented at *ASCE World Water & Environmental Resources Congress 2004*, June 26-July 1, 2004, Salt Lake City, UT.
- Tootle, G.A., and T.C. Piechota, 2003. Identification of Pacific Ocean Sea Surface Temperature Teleconnections with Western United States Streamflow. Presented at *American Geophysical Union (AGU) Fall Meeting*, December 8-12, 2003, San Francisco, California.
- Tootle, G.A., and T.C. Piechota, 2003. Drought and the 2002-2003 El Niño in the Southwest U.S. Presented at *ASCE World Water & Environmental Resources Congress 2003*, June 22-26, 2003, Philadelphia, PA.
- Tootle, G.A. and K. Hatfield, 1988. Spreadsheet Applications to Stormwater Management. Presentation at *Computing in Civil Engineering: Microcomputers to Supercomputers - ASCE Fifth Conference*, March 29-31, 1988, Alexandria, VA.

#### **b. Selected Presentations at Regional Conferences and Universities**

- Tootle, G, 2016. Keynote Address (Paleo, Climate and Alabama Water Resources) at the *Alabama State Water Resources Conference*, September 7, 2016, Orange Beach, Alabama.
- Tootle, G., M. Therrell, M. Meko, T. Moat and A. Greer, 2015. Streamflow Reconstruction Potential: Choctawhatchee River. Presentation at the *Alabama State Water Resources Conference*, September 10, 2015, Orange Beach, Alabama.
- Tootle, G., 2014. Paleohydrology, Glaciers and Weather Modification in the Upper Colorado River. Presentation at the University of Nevada, Las Vegas, October 22, 2014.
- Tootle, G., M. Therrell, A. Greer and A. Pelle, 2014. Southeast US Drought: What needs to be done? Presentation at the *Alabama State Water Resources Conference*, September 4, 2014, Orange Beach, Alabama.
- Tootle, G. and C. Moser, 2011. Reconstructions (using tree-rings) of Precipitation in the Tennessee Valley. Presentation at *Discover Life in America's 2011 All Taxa Biodiversity Inventory Conference*, April 8, 2011, Gatlinburg, Tennessee.
- Geren, T., R. Ogle, A. Bowen, G. Tootle and H. Grissino-Mayer, 2009. Streamflow Reconstructions in Southern Appalachian Mountain Headwaters. Presentation at the *Southern Appalachian Man and the Biosphere Conference*, November 19, 2009, Asheville, North Carolina.
- Piechota, T. and G. Tootle, 2008. Use of Streamflow Reconstructions in Water Resources Planning. Presentation at the *Bureau of Reclamation, Dendrochronology Workshop*, November 13, 2008, Boulder City, Nevada.
- Bellamy, J. and G. Tootle, 2008. Frequency, Duration and Risk Assessment of Drought in the Upper Green River Basin, Wyoming. Presentation at *American Geophysical Union (AGU) Hydrology Days*, March 26-28, 2008, Fort Collins, Colorado.
- Tootle, G., G. Kerr, K. Cheesbrough, J. Edmunds and L. Pochop, 2007. Glacial Change in the Wind River Range. Presentation at University of Colorado, Department of Civil Engineering, Graduate Seminar, January 16, 2008, Boulder, CO.

- Tootle, G., G. Kerr, K. Cheesbrough, J. Edmunds and L. Pochop, 2007. Glacial Change in the Wind River Range. Presentation at University of South Carolina, Department of Geology, Graduate Seminar, November 8, 2007, Columbia, SC.
- Hunter, T. and G.A. Tootle, 2006. Oceanic-Atmospheric Variability and Western Snowfall. Presentation at *American Geophysical Union (AGU) Hydrology Days*, March 20-22, 2006, Fort Collins, Colorado.
- Cheesbrough, K., Watson, T. and G.A. Tootle, 2006. Pacific Oceanic / Atmospheric Variability and the Wind River Range. Presentation at *American Geophysical Union (AGU) Hydrology Days*, March 20-22, 2006, Fort Collins, Colorado.
- Tootle, G.A., and T.C. Piechota, 2004. Identification of Pacific Ocean Sea Surface Temperature Teleconnections with Upper Truckee River Streamflow. Presented at Nevada Water Resources Association Annual Conference, February 24-26, 2004, Mesquite, Nevada.
- Piechota, T.C., and G.A. Tootle, 2003. Climate Teleconnections for Improved Streamflow Forecasting in the Colorado River Basin. Presented at *Nevada Water Resources Association Annual Conference*, February 26-28, 2003, Sparks, Nevada.

## VIII. RESEARCH GRANTS AND CONTRACTS (TOTAL AWARDED AS LEAD-PI = \$1.7M)

### **Sponsored Research – University of Alabama, Tuscaloosa (Awarded \$275K)**

*Assessing Past, Present and Future Drought and Floods in Coastal Mississippi and Alabama*. Mississippi-Alabama Sea Grant Consortium. Principal Investigators: Glenn Tootle (Lead-PI) and Matt Therrell (Co-PI). Total Budget: \$120,000

*Analyzing Extreme Hydroclimate Events in Alabama Watersheds*. Geological Survey of Alabama. Glenn Tootle (Lead-PI) and Matt Therrell (Co-PI). Total Budget: \$52,000

*Environmental Risk Analysis and Support Concept Development to Indigenous Populations in the Prevention of Irregular Warfare – Phase I*. United States Navy. Principal Investigator: Glenn Tootle. Total Budget: \$5,000

*Environmental Protection Course Instructor (Whidbey Island, WA; Jacksonville, FL; San Diego, CA)*. United States Navy. Principal Investigator: Glenn Tootle. Total Budget: \$10,000

*Streamflow Variability Due to Weather Modification*. Wyoming Water Development Commission / University of Wyoming – Phase III. Principal Investigator: Glenn Tootle. Total Budget: \$87,500

### **Sponsored Research – University of Tennessee, Knoxville (Awarded \$699K)**

*Streamflow Variability Due to Weather Modification*. Wyoming Water Development Commission / University of Wyoming – Phase II. Principal Investigator: Glenn Tootle. Total Budget: \$74,462

*Improved Long Lead-time Forecasting of Streamflow and Snowpack*. Idaho Power Company. Principal Investigator: Glenn Tootle. Total Budget: \$69,000.

*Upper Colorado River Basin Snowpack Reconstructions Incorporating Climate Variability – REU Supplement*. National Science Foundation. Principal Investigators: Glenn Tootle (Lead-PI) and Henri Grissino-Mayer (Co-PI). Total Budget: \$19,500.

*Upper Colorado River Basin Snowpack Reconstructions Incorporating Climate Variability*. National Science Foundation. Principal Investigators: Glenn Tootle (Lead-PI) and Henri Grissino-Mayer (Co-PI). Total Budget: \$166,698.

*Climate Extremes and Uncertainty*. Oak Ridge National Lab (ORNL), LDRD. Principal Investigators: Glenn Tootle (UT Lead-PI) and Auroop Ganguly (ORNL Co-PI). Total Budget (UT): \$15,000.

*Streamflow Variability Due to Weather Modification.* Wyoming Water Development Commission / University of Wyoming. Principal Investigator: Glenn Tootle. Total Budget: \$204,192

*Drought Variability in Reconstructed Streamflow.* USGS 104B. Principal Investigators: Glenn Tootle (Lead-PI) and Henri Grissino-Mayer (Co-PI). Total Budget: \$75,000

*Adaptation of Water Resource Systems to Climate Change through Weather Modification.* Oak Ridge National Lab (ORNL), Joint Directed Research and Development (JDRD) Program. Principal Investigators: Glenn Tootle (UT Lead-PI) and Auroop Ganguly (ORNL Co-PI). Total Budget (UT): \$75,000.

#### **Sponsored Research – University of Wyoming (Awarded \$770K)**

*Weather Modification Impacts and Forecasting of Streamflow.* United States Geological Survey 104B. Principal Investigators: Glenn Tootle (Lead-PI, University of Wyoming) and Tom Piechota (Co-PI, UNLV). Total Budget: \$195,671 (Mar 2007 to Feb 2010).

*Wind River Glacier Study.* Wyoming Water Development Commission. Principal Investigators (University of Wyoming): Glenn Tootle (Lead-PI) and Greg Kerr (Co-PI). Total Budget: \$217,500 (May 2006 to Aug 2009).

*Glacial Change in Grand Teton National Park.* Rocky Mountains Cooperative Ecosystems Studies Unit (RM-CESU). Principal Investigators (University of Wyoming): Glenn Tootle (Lead-PI) and Greg Kerr (Co-PI). Total Budget: \$10,000.

*Climate Variability and Glacial Recession in the Wind River Range and Grand Teton Range, Wyoming.* NASA EPSCoR. Principal Investigators: Glenn Tootle (Lead-PI) and Jessie Cable (Co-PI). Total Budget: \$272,510 (Jun 2008 to May 2011) Note: Award was returned to NASA by UW due to Lead-PI's move to UT.

*Predicting Drought in the Green River Basin.* United States Geological Survey 104B. Principal Investigators (University of Wyoming): Glenn Tootle (Lead-PI) and Steve Gray (Advisor). Total Budget: \$65,122 (Mar 2006 to Feb 2008).

*Atmospheric-Oceanic Variability and Western U.S. Snowfall.* Wyoming NASA Space Grant Consortium 2006 Faculty Grant. Principal Investigator (University of Wyoming): Glenn Tootle (Lead-PI). Total Budget: \$9,028 (May 2006 to Apr 2008).

#### **Sponsored Research – UNLV**

*The Role of Sea Surface Temperature Variability and Watershed Soil Moisture,* Awarded (2003-2005), Graduate Research Fellow, National Science Foundation, Nevada Experimental Program to Stimulate Competitive Research (EPSCoR) of the Advanced Computing in Environmental Sciences (ACES), research fellowship (UNLV).

## **IX. PROFESSIONAL AND SCIENTIFIC SERVICE**

### **a. Scientific and Professional Society Memberships**

American Geophysical Union

### **b. Professional Committee Service**

AGU, Student Awards Committee, Member (2010 to 2012)

ASCE, Climate Change and Variability Committee, Member (2004 to 2006)

### **c. Conference Activities**

Co-Chair, Large-scale climate variability and its impact on hydrological systems, water resources and population, *American Geophysical Union (AGU) Fall Meeting*, December 12-16, 2016, San Francisco, California.

Co-Chair, Regional Climate Impact Studies from CMIP5 Ensemble Model Results II, *American Geophysical Union (AGU) Fall Meeting*, December 9-13, 2013, San Francisco, California.

Moderator, *ASCE World Water & Environmental Resources Congress*: May 17-21, 2009, Kansas City, MO; May 12-16, 2008, Honolulu, HI; May 21-25, 2006, Omaha, NE.

**d. Service**

Associate Editor, *ASCE Journal of Hydrologic Engineering* (2008 to 2014).

University of Alabama and University of Tennessee Institutional Representative to the Consortium of Universities for the Advancement of Hydrologic Sciences (CUAHSI)

Journal Reviewer: *Journal of Hydrology*, *Water Resources Research*, *Journal of Hydrometeorology*, *Water Resources Management*, *ASCE Journal of Irrigation and Drainage*, *ASCE Journal of Hydrologic Engineering*, *ASCE Water Resources Planning and Management*, *Geophysical Research Letters*, *Journal of Nevada Water Resources Association*, *Remote Sensing*, *Journal of Applied Remote Sensing*, *Applied Geography*.

Proposal Reviewer: USGS/NIWR National Competitive Grants Program, NSF Competitive Grants Proposal.

Urban Watersheds Research Institute, Denver, CO. (2006 to 2008). Instructor for two-day short course focusing on U.S. Army Corps of Engineers, Hydrologic Engineering Center (HEC) HEC-RAS and HEC-GeoRAS models.

University of Nevada, Las Vegas Department of Civil and Environmental Engineering Continuing Education (Dec 2002 to present). Instructor for short courses focusing on U.S. Army Corps of Engineers, Hydrologic Engineering Center (HEC) HEC-HMS, HEC-RAS and HEC-GeoRAS models.

University of Wyoming Department of Civil and Architectural Engineering (UW CAE) Continuing Education (Aug 2005). Instructor for three-day short course focusing on U.S. Army Corps of Engineers, Hydrologic Engineering Center (HEC) HEC-HMS, HEC-RAS and HEC-GeoRAS models.

Interdisciplinary Modeling for Aquatic Ecosystems (Jul 2005). Instructor for University of Nevada, Reno three (3) hour graduate course offered at Lake Tahoe, NV.

University of Florida, Center for Training, Research and Education in Environmental Occupations (TREEO Center) Continuing Education (1989 – 2003). Instructor for short courses focusing on Stormwater Design and Permitting, Advanced Stormwater System Design, HEC-RAS and Groundwater modeling.

**X. UNIVERSITY COMMITTEE SERVICE**

**a. University**

UA Faculty Senator, College of Engineering, 2013 to 2015.

**a. Department**

UA CCEE Faculty Search Committee Chair, 2016.

UA ABET Committee, 2015 to present.

UA Graduate Student Committee, 2014 to present.

UA Senior Design Committee, 2013 to 2015.

UT Department of Civil and Environmental Engineering Assessment Committee, 2009.

UW Department of Civil and Architectural Engineering Curriculum Committee, 2007 – 2008.

UW Search Committee Member (Jan to Mar 2006) for State Climatologist / WRDS Director academic appointment position.

UW Department of Civil and Architectural Engineering Graduate Student Committee, 2005 – 2007.

## **XI. HONORS**

UT Department of Civil and Environmental Engineering, Teaching Recognition Award, 2012.

UT Department of Civil and Environmental Engineer, Outstanding Teaching Award, 2011.

UT Faculty Advisor to Oubeid Aziz, 2010 McClure Fellowship Recipient.

UT Department of Civil and Environmental Engineering, Teaching Recognition Award, 2009.

UW Faculty Advisor to Kyle Cheesbrough, AGU 2007 Outstanding Student Presentation (Hydrology Division), *Glacial Recession in the Wind River Range*, AGU Annual Meeting, San Francisco, CA.

UW, College of Engineering, Mortar Board Top Professor Award, Dec 2006.