Amy C. Tidwell

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Research Interests:

Watershed hydrology; streamflow forecasting; water resources management; climate change impact assessments for water resources; uncertainty characterization.

Education:

Ph.D., Georgia Institute of Technology, Civil Eng., 2006.
M.S., Georgia Institute of Technology, Civil Eng., 2004.
B.S., University of Alaska Fairbanks, Civil Eng., 2001.

Professional Appointments:

Postdoctoral Fellow, Water and Environmental Research Center, University of Alaska Fairbanks, 2006 – present.
Research Associate and Program Coordinator, Georgia Water Resources Institute and Georgia Institute of Technology, 2001 – 2006.
Engineer, Utility Services of Alaska, 2000 – 2001.
Research Assistant, University of Alaska Fairbanks, Department of Civil Engineering, 1999 – 2000.

Awards/Honors:

President's International Polar Year Postdoctoral Fellow, University of Alaska, 2006 - present
Georgia Tech President's Fellowship, 2001-2005
National Science Foundation Graduate Research Fellowship, 2001 - 2004
Marion Frances Boswell Memorial Award, University of Alaska Fairbanks, 2001
Gray S.Tilly Memorial Award, University of Alaska Fairbanks, 2001
Dodson Scholar, Tau Beta Pi Engineering Honor Society (National), 2000
Focht Scholar, Chi Epsilon Civil Engineering Honor Society (National), 2000
Outstanding Sophomore Engineering Student, Tau Beta Pi (UAF), 1999
Outstanding Freshman Chemistry Student, University of Alaska Fairbanks, 1997

Academic Teaching Experience:

Hydrology (Georgia Tech, CEE 4210), Primary Instructor Fall 2002, Co-Instructor Fall 2003;
Probability and Statistics for Civil and Environmental Engineers (Georgia Tech, CEE 6231), Teaching Assistant Fall 2002-2005;
Water Resources Management (Georgia Tech, CEE 6241), Teaching Assistant Spring 2005.

Professional Teaching Experience (International):

"NILE DECISION SUPPORT TOOL: APPLIED TRAINING WORKSHOP" sponsored by the Food and Agriculture Organization (FAO) of the United Nations, Entebbe, Uganda, February 2-20, 2004. The aim of this workshop was to train 20 modelers from the Nile Basin Nations in the use of the Nile DST. The workshop spanned three weeks of intensive hands-on training in data base management and quality control, hydrologic simulation and assessment, river basin planning and management, agricultural planning, and remote sensing of rainfall. The workshop consisted of 90 hours of lectures and hands-on exercises.

"NATIONAL SEMINAR FOR STRENGTHENING PARTNERSHIPS AND COORDINATION OF MALARIA CONTROL ACTIVITIES IN SUDAN: THE NORTHERN STATE," Khartoum, Sudan, February 9-11, 2004. The Nile Decision Support Tool was presented with potential application as an epidemiological and environmental information system for East Africa as well as an integral component for a malaria early warning and intervention system.

"NILE DECISION SUPPORT TOOL: METHODS" sponsored by the Food and Agriculture Organization (FAO) of the United Nations, Dar es Salaam, Tanzania, June 2-28, 2002. The aim of this workshop was to develop the understanding of the Nile Basin engineers and scientists on the methods of the Nile DST (data management, watershed hydrology, river simulation and reservoir management, agricultural planning, and remote sensing). Workshop participants included 20 modelers, two from each Nile Basin. The workshop consisted of 90 hours of lectures.

Research Project Experience:

"CLIMATE CHANGE IMPACT ASSESSMENTS FOR WATER RESOURCES IN EAST AFRICA AND THE SOUTHEAST US," Research Associate, sponsored by the Georgia Water Resources Institute; 2003-Present.
Scope: This research develops new methods for generating plausible regional climate scenarios based on general circulation model (GCM) output. The resulting ensemble of sequences are downscaled and coupled with hydrologic and river basin models to carry out integrated impact assessments. The assessments include uncertainty characterization stemming from GCM output, regional assumptions in scenario development, and downscaling procedures.

"A DECISION SUPPORT TOOL FOR THE NILE BASIN," Research Associate, sponsored by the Food and Agricultural Organization of the United Nations, Rome, Italy; 2000-2003.
Scope: This project developed an integrated decision support system aimed at the development and transfer of modern river basin management technologies to the Nile Basin Countries.

“EPIDEMIOLOGICAL AND ENVIRONMENTAL MALARIA INFORMATION SYSTEM FOR EAST AFRICA,”
Research Associate. Research development project sponsored by The Georgia Institute of Technology and Centers for Disease Control (CDC); 2003-2004.
Scope: This project aims at conceptualizing and developing an information system for Malaria Monitoring and Control in Sudan.

Publications:

Tidwell, A. and A. Georgakakos. "Climate Change Assessment for the Lake Victoria Basin 1: Climate Scenario Development and Assessment." In preparation.

Tidwell, A. and A. Georgakakos. "Climate Change Assessment for the Lake Victoria Basin 2: Hydrologic and Water Resources Assessment." In preparation.

Tidwell, A., 2006. “Assessing the Impacts of Climate Change on River Basin Management: A New Method with Application to the Nile River.” Ph.D. Dissertation, Georgia Institute of Technology, p. 264.

Georgakakos, A., A. Tidwell, and M. Benedict, 2004. “Epidemiological and Environmental Malaria Information System for East Africa.” Project report, Georgia Tech/Centers for Disease Control, Atlanta, GA, USA.

Georgakakos, A., H. Yao, and A. Tidwell, 2006. "Integrated Framework for Water, Energy, and Environmental Resources Assessment, Planning, and Management: Lake Victoria Application." Invited Paper, AGU Fall Meeting, December 19, 2006.

Kimaite, F., A. Tidwell, C. Braneon, M. Kistenmacher, H. Yao, and A. Georgakakos, 2007. "Decision Support Tools for River Basin Planning and Management." Georgia Water Resources Conference, Athens, Georgia, March 27 to 29, 2007.

Visone, L., A. Tidwell, and A. Georgakakos, 2003. “Nile Decision Support Tool (Nile DST): Watershed Hydrology.” Technical report, Georgia Water Resources Institute/UN-FAO, pp. 49.

Software Packages:

Georgakakos, A., H. Yao, K. Brumbelow, C. Demarchi, S. Bourne, A. Tidwell, L. Visone, 2003. “Nile Decision Support Tool.” This decision support system combines extensive hydroclimatic databases with state of the science hydrologic, agricultural, and water resources models to assess the impacts of various development and management scenarios for the Nile Basin. The Nile DST software and associated reports (6 volumes) and user manuals (6 documents) have been developed and provided to the Nile Basin countries. Training and technology transfer activities are on-going.