

Iftekhhar Ahmed, Ph.D., P.E., CPESC

Assistant Professor

Department of Civil & Environmental Engineering
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Education

- Ph.D., Civil Engineering (Water Resources with Minor in Systems Engineering), 2001, University of Arizona, Tucson, AZ
- M.S., Civil Engineering (Computational Hydraulics), 1997, University of Arizona, Tucson, AZ
- B.S., Civil Engineering, 1995, University of Arizona, Tucson, AZ

Professional Registration

- P.E. Arizona No. 41842 (Water Resources)
- CPESC (Certified Professional in Erosion and Sedimentation Control) No. 2828

Research and Professional Interests

- Stochastic Modeling, Risk Management & Scale Issues
- Computational & Applied Hydraulics
- Water Resources Systems
- River Restoration & Flood Control
- Applied Sedimentation Engineering & Geomorphology
- Pipe Network Design, Operational Optimization & Energy Efficiency
- Water Quality Modeling (Surface Water and Pipelines)
- Groundwater Modeling & Solute Transport
- GIS and Computer Applications in Water Resources

Teaching

Undergraduate Courses:

- CVEG 3063: Hydraulics
- CVEG 4063: Water Resources Engineering
- CVEG 4473: Sr. Design & Professionalism – I
- CVEG 4483: Sr. Design & Professionalism – II
- GNEG 1121: Laboratory for Calculus I

Graduate/Special Topics Courses:

- Seepage and Earth Dams

Employment

- Assistant Professor, Department of Civil & Environmental Engineering, Prairie View A&M University, September 2009-
- Project Engineer, Stantec Consulting, Inc., Phoenix, AZ, January 2007 – November 2008
- Sr. Water Resources Engineer, WEST Consultants, Inc., Tempe, AZ, July 2002 – July 2006
- Research Assistant, University of Arizona, August 1998 – August 2001
- Research/Teaching Assistant, University of Arizona, January 1996 – August 1997

Affiliations

- American Society of Civil Engineers (ASCE)
- International Association of Hydraulic Research (IAHR)
- Tau Beta Pi

Publications

Dissertation/Thesis

- **Ph.D. Dissertation:** On the Determination of Multi-reservoir Operating Policy Under Uncertainty.
- **M.S. Thesis:** Application of the Gradient Method for (Gradually Varied) Unsteady Flow in Water Networks

Selected Conference Publications (River Engineering, Reservoir Operations, Optimization Based Water Distribution Systems Design and Analyses)

- Holmes, J., and Ahmed, I. (2008). “Comparison of 1-D and 2-D Modeling of Rivers: Upper New River ADMP Study, Arizona Floodplain Management Association (AFMA), Spring Conference, Tucson, AZ.
- Ahmed, I., and Freeman, G.E. (2004). “Estimating Stage-Discharge Uncertainty for Flood Damage Assessment.” *Arid Lands Symposium, Proc., World Water and Environmental Resources Congress*, ASCE/EWRI, June, Salt Lake City, UT.
- Ahmed, I., and Lansley, K.E. (2006). “Mean-Variance Model for Reservoir Operations.” IAHR 7th Hydroinformatics Conference, September, Nice, France. Peer Reviewed.
- Ahmed, I., and Lansley, K.E. (2005). “Reservoir Operations Under Hydroclimatic Uncertainty.” IAHR 9th International Symposium on Stochastic Hydraulics, May, TU Delft, The Netherlands. Peer Reviewed.
- Ahmed, I., Lansley, K.E., and Araujo, J. (1999). “Data Collection for Water Distribution

Network Calibration.” Peer Reviewed, *Proc., International Conference on Computing and Control for the Water Industry*, CCWI’99, September, University of Exeter, Exeter, Devonshire, England, UK.

- Ahmed, I., and Lansey, K.E. (1999). “Analysis of Unsteady Flow in Networks Using a Gradient Algorithm Based Method.” *Proc., 26th Annual ASCE Specialty Conference on Water Resources Planning and Management*, June, Tempe, AZ.

Refereed Publications (Municipal Water Distribution Systems: Design, Uncertainty analyses through model calibration, Reliability/Availability Analysis)

- Closure to “Calibration Assessment and Data Collection for Water Distribution Networks.” By K.E. Lansey, W. El-Shorbagy, I.Ahmed, J.Araujo, and C.T. Haan, *J. of Hydraulic Engineering*, ASCE, Vol. 128(12), pp. 1106-7.
- Lansey, K.E., El-Shorbagy, Ahmed, I., Araujo, J, and Haan, C.T. (2001). “Calibration Assessment and Data Collection for Water Distribution Networks.” *J. of Hydraulic Engineering*, ASCE, Vol. 127(4), pp. 270-279.
- Mallick, K.N., Ahmed, I., and Lansey, K.E. (2002). “Determining Pipe Groupings for Water Distribution Networks.” *J. of Water Resour. Plng. & Mgmt*, ASCE, Vol. 128(2), pp. 130-139.
- Shinstine, D.S., Ahmed, I., and Lansey, K.E. (2002). “Reliability/Availability Analysis of Municipal Water Distribution Networks: Case Studies.” *J. of Water Resour. Plng. & Mgmt*, ASCE, Vol. 128(2), pp. 140-151.

Professional Development/Training

- NSF-TUES Grant Writing Workshop, February 21-23, 2010, Arlington, VA.
- RMA2, SED2D & SMS: Hands-on project related training at WEST Consultants, Inc.
- Unsteady HEC-RAS: Computer Workshop for Unsteady Flow Applications, ASCE Sponsored 3-Day Course, January 2008, Phoenix, AZ.
- HEC-RAS: River Analysis System, ASCE Sponsored 3-Day Course, December 11-13, 2002, Tucson, AZ.
- HEC-6T: Sedimentation in Stream Networks, USACE-Omaha District, NE, August 27-29, 2002. Instructors: William (Tony) Thomas, P.E., Dr. David Williams, Ph.D., P.E., D.WRE.
- FLO-2D: 2-day Short Course, Bellevue, WA, March 25-27, 2004. Instructor: Jimmy O’Brien, Ph.D., P.E.
- Toe Scour Course: ASCE 2-day Short Course, Phoenix, AZ, June 2-3, 2005.
- RiverWare - I: Introduction to River-Reservoir Simulation Modeling, CADSWES, University of Colorado, Boulder, CO, July 27-29, 2005.
- RiverWare - II: Introduction to Rule-based River-Reservoir Simulation Modeling, CADSWES, University of Colorado, Boulder, CO, August 24-26, 2005.
- International Erosion Control Association (IECA): How to Select, Install and Inspect Construction Site Erosion and Sediment Control BMPs for NPDES Storm Water Permit Compliance, Tucson, AZ, September, 2001.

Professional Experience

(River Restoration/Hydraulics, Sediment Engineering, Bank Protection, Fluvial Geomorphology, Environmental Litigation Support, Water Supply, Best Management Practices)

- *El Rio Antiquo*: Rillito River Environmental Restoration Project, Tucson, Arizona
U.S. Army Corps of Engineers – L.A. District
- *Tres Rios* PED, North Levee Design (Salt and Gila Rivers), Phoenix, Arizona, U.S. Army Corps of Engineers – L.A. District
- *Tres Rios del Norte* Feasibility Study (Santa Cruz River), Tucson, Arizona,
U.S. Army Corps of Engineers – L.A. District
- Santa Cruz River Bank Protection Alternatives Study, Tucson, Arizona,
U.S. Army Corps of Engineers – L.A. District
- Silver Bow Creek Mine Tailings Analyses, Butte, Montana, Litigation Support
- Sonoqui Wash Channelization Phase-I, Flood Control District of Maricopa County, Phoenix
- US 93 Wickenburg Bypass: Crossing of the Hassayampa River and Sols Wash
Wickenburg, Arizona, Arizona Department of Transportation (ADOT)
- Lower Hassayampa Watercourse Master Plan, Flood Control District of Maricopa County
- Caesars Floating Casino: Sedimentation Mitigation Alternative Development,
Ohio River, Elizabeth, Indiana. In collaboration with U.S. Army Corps of Engineers,
Louisville District
- Central Oregon Highway: Four Bridge Replacement Projects, Oregon Dept. of Transportation
- Sand Wash Bridge Widening Project Scour Analysis on Highway 75, Duncan, Arizona
(ADOT)
- Pecos River Basin “RiverWare” Water Supply System Evaluation, Eastern New Mexico,
Interstate Stream Commission-Santa Fe
- Nogales International WWTP Flood Protection Study, Nogales, Arizona, For PLC
Construction in collaboration with Santa Cruz County Flood Control District
- Upper New River ADMP Phases I & II, Phoenix, Arizona, Flood Control District of Maricopa
County
- BMP: Caltrans Desert Hydrology Manual Revision, California (CalTrans)
- Capay Dam Retrofit Hydraulics, Yolo County, CA, Yolo County Flood Control and Water
Conservation District

Prairie View A&M University Services

- ASCE Chapter, Secondary Faculty Advisor, 2009-2010, Department of Civil & Environmental
Engineering.
- CAHS-GIS Day, November 18, 2009, Poster: *GIS Applications in Water Resources
Engineering*, 1st Prairie View A&M GIS Day, College of Agriculture and Human Sciences.
- Pantherland Day, November, 14, 2009, Faculty advisor/moderator at the Department Desk,
Roy G. Perry College of Engineering.
- Instructor and Assistant Laboratory Experiment Developer, 2009-1010, Freshman Laboratory
for Math (Calculus I), Roy G. Perry College of Engineering.