

George R. Herrmann, Ph.D., P.E., P.H., D.WRE, CFM, SIT

Full Name: George V Rudolph Herrmann

Current Residence: Lubbock, Texas

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Formal Education

Doctor of Philosophy

Major: Civil Engineering, Water Resources Specialty

Texas Tech University, December 2013

Graduate GPA 3.914/4.0. Dissertation title *Conceptual, Algorithmic, and Statistical Exploration of Relations Between Runoff Generation, Stream Geomorphology, and Watershed Topography in West Texas.*

Graduate Certificate

Major: Geographical Information Science and Technology (GIS)

Texas Tech University, December 2013

Master of Science

Major: Civil Engineering, Water Resources Specialty

Texas Tech University, December 2002

Graduate GPA 3.9/4.0. Thesis Title *Unit Hydrographs and Watershed Scale.*

Bachelor of Science

Major: Civil Engineering, Water Resources Specialty

Texas Tech University, January 1982–May 1988

Current Position

Instructor, Texas Tech University, Department of Civil, Environmental, and Construction Engineering

Principle, Desert Sky Engineering and Hydrology (sole proprietor)

Adjunct Scientist, Texas Tech University Department of Geosciences

Relevant Professional Experience

U. S. State Department Speaker Program Universidad Catolica Boliviana Symposia on Water Resources Santa Cruz, Cochabamba, and Tarija, Bolivia, March–April 2016

Texas Tech University Department of Civil and Environmental Engineering

Research Associate/Assistant, Department of Civil and Environmental Engineering, July

2012–December 2013 (matriculated with doctoral degree)

Texas Department of Transportation, West Region Office
Assistant Regional Director for Project Development, July 2009–June 2012 (retired from
TxDOT)

Texas Department of Transportation, San Angelo District Office
District Advanced Project Development Engineer, April 1998–September 2001 and January
2003–June 2009.
District Design Engineer, September 1997–March 1998

Texas Department of Transportation, Pampa Area Office, Amarillo District
Assistant/Associate Area Engineer, April 1994–August 1997
Engineering Assistant II/III/IV, August 1988–March 1994

Relevant TxDOT Technical Experience

During 24 years of service with TxDOT, designed and oversaw the construction of a large number of major and minor bridges; culverts; detention ponds with outlet works; energy dissipaters; storm sewers; and drainage channels. Performed bridge hydrologic and hydraulic analyses for the evaluation of in-service bridges in Texas for scour vulnerability. Performed numerous site investigations and site-specific analyses in response to drainage complaints. Assisted in numerous analyses that fell outside of standard DOT design guidelines.

Extensive experience in a wide variety of methods of hydrologic estimation: rainfall/runoff modeling using SCS TR-20 and HEC-HMS, gauge analysis using PeakFQ, extensive experience using the R programming environment, graphical estimation by plotting position formulae, regression methods, step-backwater, as well as developing advanced techniques and specialty models to solve or provide insight into unique problems.

Relevant Research–Related Experience

Team Member, NCHRP Project 15-61 Applying Climate Change Information to Hydrologic and Hydraulic Design of Transportation Infrastructure

Team Member, team to update FHWA HEC-17 to address adaptation to climate change

Chair and Member, Texas Department of Transportation Research Management Committee 3 (RMC3) Technical Advisory Panel (TAP) 1997–2009

Project Director on numerous TxDOT-Sponsored research projects with focus on hydraulics and hydrology, 1998–2009.

Project Advisor on all TxDOT-sponsored research projects with focus on hydraulics and hydrology, as well as water-related environmental projects, 1998-2009.

Member, Transportation Research Board (TRB) , Committee on Hydraulics, Hydrology, and Water Quality (AFB600, 2004–present. Currently Subcommittee Chair for Hydrology Subcommittee, AFB60.

Project Oversight Committee, National Cooperative Highway Research Program (NCHRP) Project 15-36 Estimating Joint Probabilities of Design Coincident Flow at Stream Confluences, 2006–2010.

Licenses and Certifications

- Professional Engineer, licensed in Texas (License No. 79293, 1994), and in Nevada (License No. 23132, 2014).
- Certified Floodplain Manager, (Certification No. 0313-01N, 2001).
- Registered Professional Hydrologist, American Institute of Hydrology (Certification No. 1679, surface water hydrology, 2004).
- Surveyor in Training, Texas Board of Land Surveying (2008).
- Diplomate, Water Resource Engineer, American Academy of Water Resource Engineers (2015).

Selected Publications

- Kilgore, Roger I, George (Rudy) Herrmann, Wilbert O. Thomas, Jr., and David B. Thompson
Highways in the River Environment- Floodplains, Extreme Events, Risk, and Resilience
Federal Highway Administration Hydrologic Engineering Circular No. 17, second edition
U.S. DOT FHWA June, 2016
- Neale, Caroline M., Cristal C. Tay, George R. Herrmann, and Theodore G. Cleveland
TXHYETO.XLS A Tool to Facilitate Use of Texas-Specific Hyetographs for Design Storm Modeling.
Proceedings of the World Environmental and Water Resources Congress 2015: Floods, Droughts, and Ecosystems, pp 241-254 ASCE, 2015
- Tay, Cristal C., Caroline M. Neale, George R. Herrmann, and Theodore G. Cleveland
Updated Rainfall Coefficients for Texas The EBDLKUP-NEW.XLS Tool
Proceedings of the World Environmental and Water Resources Congress 2015: Floods, Droughts, and Ecosystems, pp 442-452 ASCE, 2015

- Cleveland, Theodore G., Caroline M. Neale, Cristal C. Tay, and George R. Herrmann
Empirical Flow Parameters: A Tool for Hydraulic Model Screening
Proceedings of the World Environmental and Water Resources Congress 2015:
Floods, Droughts, and Ecosystems, pp 2549-2557 ASCE, 2015
- Herrmann, George R.,
Conceptual, Algorithmic, and Statistical Exploration of Relations
Between Runoff Generation, Stream Geomorphology, and
Watershed Topography in West Texas
Doctoral Dissertation, Texas Tech Univ., 2013.
- Asquith, William H, George R. Herrmann, and Theodore G. Cleveland
Generalized Additive Regression Models of Discharge and
Mean Velocity associated with Direct-Runoff Conditions in Texas:
The Utility of the U.S. Geological Survey Discharge Measurement Database
American Society of Civil Engineers, Journal of Hydrologic Engineering, volume 18,
no. 10, October, 2013, pp 1331–1348.
- Herrmann, George R. and Theodore G. Cleveland
Moving Substrate in an Ephemeral Stream: Case Study in Bridge Survival
Transportation Research Record, Journal of the Transportation Research Board, no.220,
Bridge Engineering Vol. 2
(proceedings of the 7th International Bridge Engineering Conference 2010, San Anto-
nio, Texas)
- Herrmann, George R. and Theodore G. Cleveland
Consideration of Fundamental Loss Components, Rational Coefficients,
and Arid Climate
Proceedings, AIH/AHS HydroSymposium 2009, American Institute of Hydrology.
Arizona Hydrological Society, American Institute of Hydrology.
- Herrmann, George R. and Theodore G. Cleveland
Generation of Simulated Monthly Rainfall Accumulations and Associated
Monthly Evaporation Depths For Use in the Management of Small Reservoirs
and Water Harvesting For Central Texas,
Proceedings, AIH/AHS HydroSymposium, Scottsdale, AZ, 2009,
Arizona Hydrological Society, American Institute of Hydrology.
- Herrmann, George R.
Unit Hydrographs and Watershed Scale
Masters Thesis, Texas Tech Univ., 2002.
- Herrmann, George R.
Sonora Relief Route Investigative Study Final Report
TxDOT San Angelo District, 2010