Randall W. Gentry, Ph.D., P.E.
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The University of Tennessee
311 Conference Center Bldg.
Knoxville, TN 37996
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Education and Professional Experience:

Education:

Doctor of Philosophy in Civil Engineering, The University of Memphis, December 1998; dissertation project: "The Development of a Genetic Algorithm Technique to Solve the Inverse Ground Water Problem Associated with Accretion to a Semi-confined Aquifer".

Master of Science in Civil Engineering, The University of Memphis, May 1996; thesis project: "The Migration of Carbon Tetrachloride Through an Unsaturated Porous Medium".

Bachelor of Science in Civil Engineering, Memphis State University, December 1991.

Professional Positions:

May 2007 to Present, Director, Institute for a Secure and Sustainable Environment, University of Tennessee.
Feb 2007 to April 2007, Interim Director, Institute for a Secure and Sustainable Environment, University of Tennessee.
August 2006 to Present, Associate Professor, Civil & Environmental Engineering, University of Tennessee.
July 2006 to February 2007, Water Resources Group Leader, Institute for a Secure and Sustainable Environment, University of Tennessee.
November 2003 to Present, Director, Southeastern Water Resources Institute, University of Tennessee.
August 2002 to July 2006, Assistant Professor, Civil & Environmental Engineering, University of Tennessee.
January 1999 to July 2002, Associate Director, Ground Water Institute, University of Memphis.
September 2000 to July 2002, Assistant Professor, Civil Engineering, University of Memphis.
January 1995 to December 1998, Research Assistant, Ground Water Institute, University of Memphis.
January 1992 to January 1995, Environmental Engineer, Memphis Environmental Center.

Professional Credentials:

Registered Professional Engineer, TN # 00103874

Professional Affiliations:

American Society of Civil Engineers (ASCE)
American Association for the Advancement of Science (AAAS)
American Geophysical Union (AGU)

International Association of Hydrological Sciences (IAHS)

Research and Scholarly Activities:

Editorial Boards:

Associate Editor, ASCE Journal of Hydrologic Engineering, November 2004 to June 2008.

Journal Manuscripts:

Ivey, S.S., Gentry, R.W., Larsen, D., and Anderson, J.L. 2008. Case Study of the Sheahan Wellfield Using $^{3}H/^{3}He$ Field Data to Determine Localized Leakage Areas, Journal of Hydrologic Engineering, *accepted for publication*.

Ivey, S.S., Gentry, R.W., Larsen, D., and Anderson, J.L. 2008. Inverse Application of Age-distribution Modeling using Environmental Tracers $^{3}H/^{3}He$, Journal of Hydrologic Engineering, *accepted for publication*.

Franklin, S.B., Kupfer, J.A., Pezeshki, R., Gentry, R.W., and Smith, R.D. 2008. Efficacy of the Hydrogeomorphic Model (HGM): A Case Study from Western Tennessee, Ecological Indicators, *in press*.

Koirala, S.R., Perfect, E., Gentry, R.W., and Kim, J.W. 2008. Effective Saturated Hydraulic Conductivity of 2-dimensional Random Multifractal Fields, Water Resources Research, doi:10.1029/2007WR006199, *in press*.

Koirala, S.R., Gentry, R.W., Perfect, E., Schwartz, J., and Sayler, G.S. 2008. Temporal Variation and Persistence of Bacteria in Streams, Journal of Environmental Quality, *in press*.

Gentry, R.W., Layton, A., McKay, L., McCarthy, J., Williams, D., Koirala, S.R., and Sayler, G.S. 2007. Efficacy of *Bacteroides* for Reducing the Statistical Uncertainty Associated with Hydrologic Flow and Fecal Loads in a Mixed Use Watershed, Journal of Environmental Quality, V36, n5, pp. 1324-1330.

Gentry, R.W., McCarthy, J., Layton, A., McKay, L., Williams, D., Koirala, S.R., and Sayler, G.S. 2006. *Escherichia coli* Loading at or Near Baseflow in a Mixed-Use Watershed, Journal of Environmental Quality, V35, n6, pp. 2244-2249.

Gentry, R.W., Ku, T-L., Luo, S., Todd, V., Larsen, D., and McCarthy, J.F. 2006. Resolving Aquifer Behavior Near a Focused Recharge Feature Based Upon Synoptic Wellfield Hydrogeochemical Tracer Results, Journal of Hydrology, V323, n1-4, pp387-403.

Layton, A.C., Williams, D., Garrett, V., McKay, L., Gentry, R.W. and Sayler, G.S. 2006. Development of Bacteroides 16S rRNA Gene TaqMan-Based Real-Time PCR Assays for Estimation of Total, Human, and Bovine Fecal Pollution in Water, Applied and Environmental Microbiology, V72, n6, pp. 4214-4224.

Goff, K. and Gentry, R.W. 2006. A Sensitivity Analysis of the Influence of Watershed and Development Characteristics on the Cumulative Impacts of Storm Water Detention Ponds, Water Resources Management, V20, n6, pp. 829-860.

Perfect, E., Gentry, R.W., Sukop, M.C., and Lawson, J.L. 2006. Multifractal Sierpinski Carpets: Theory and Application to Modeling Reservoir Heterogeneity, Geoderma, V134, n3-4, pp. 240-252.

Gentry, R.W., Larsen, D., Ivey, S.S. 2003. Efficacy of genetic algorithm to investigate small scale aquitard leakage, ASCE Journal of Hydraulic Engineering, V129, n7, pp. 527-535.

Larsen, D., Gentry, R.W., and Solomon, D.K. 2003. The geochemistry and mixing of leakage in a semi-confined aquifer at a municipal well field, Memphis, Tennessee USA, Applied Geochemistry, v18, n7, pp. 1043-1063.

Larsen, D., Spann, E.W., McClure, D.M., and Gentry, R. 2003. Stratigraphic and contaminant hydrology implications of selected sediment properties of Quaternary deposits, Shelby County, Tennessee. Southeastern Geology, vol. 42, no. 2, p. 99-110.

Gentry, R.W., Camp, C.V., Anderson, J.L. 2001. Use of a GA to determine areas of accretion to a semi-confined aquifer, ASCE Journal of Hydraulic Engineering, v127, n9, pp. 738 – 746.

Kupfer, J. A., Franklin, S. B., Pezeshki, S.R., Hanson, R.A, Scheff, T.L., Gentry, R.W. 2001. A comparison of hydrology and vegetation between a channelized stream and a nonchannelized stream in western Tennessee, Physical Geography, v22, n3, pp. 254-274.

Conference Manuscripts, Reports, and Other Contributions to Edited Volumes:

Gentry, R.W., McKay, L., Thonnard, N., Anderson, J.L, Larsen, D., Carmichael, J.K., and Solomon, K. 2006. Novel Techniques for Investigating Recharge to the Memphis Aquifer. American Water Works Association. 97pp.

Gentry, R.W., McKay, L., Layton, A., and McCarthy, J. 2005. Development of Novel Tracer Techniques for Better Understanding of Karst Transport Characteristics and Surface Water Influences. pp 1-6 In: R. Walton (Ed.) Impacts of Global Climate Change, ASCE Press, New York, NY.

Gentry, R.W. 2004. Assessing ground water and surface water interaction through tracer observation. pp 1-7 In: G. Sehlke, D.F. Hayes, and D.K. Stevens (Eds.) Critical Transitions in Water and Environmental Resources Management, ASCE Press, New York, NY.

Gentry, R.W. 2004. Using environmental tracers to verify and investigate conceptual models of highly localized aquitard leakage. pp 1-7 In: G. Sehlke, D.F. Hayes, and D.K. Stevens (Eds.) Critical Transitions in Water and Environmental Resources Management, ASCE Press, New York, NY.

Larsen, D., Gentry, R.W., Ivey, S., Solomon, D.K., and Harris, J. 2003. Groundwater leakage through a leaky confining unit beneath a municipal well field, Memphis, Tennessee, USA. In Schulz, H.D., and Hadeler, A., eds., Geochemical Processes in Soil and Groundwater, Wiley-VCH, Berlin, p. 51-64.

Franklin, S.B., J.A. Kupfer, S.R Pezeshki, N. van Gestel & R.W. Gentry, 2001. Channelization effects on floodplain functions in western Tennessee. Pp. 189-201 In: R.A. Falconer & W.R. Blain (eds.) River Basin Management, WITpress, Southampton, Boston.

Book Reviews:

Gentry, R. W., Review of *Multilayered Aquifer Systems: Fundamentals and Applications* by Alexander H.-D. Cheng. ASCE Journal of Hydraulic Engineering, v127, n5, pp 435-436.

Conference Abstracts & Presentations:

Gentry, R.W. 2007. Urgent Requirements for Developing a Secure and Sustainable Environment, U.S. – China Workshop on Environmental Aspects of Bioenergy Production and Sustainability, Knoxville, TN, September 11-14, 2007.

Gentry, R.W. 2007. Using Watershed Signals as a Means of Evaluating Sustainability and Climate Variability for Natural Resources. Rising to the Challenges of a New Century – 18th Annual SAMAB Conference, October 22-24, 2007, Johnson City, Tennessee.

Koirala, S.R., R.W. Gentry, E. Perfect, and J.S. Schwartz. 2007. Spectral analysis of total coliform in a stream in east Tennessee. Proc. World Environmental and Water Resources Congress, ASCE, Tampa Marriott Waterside, Tampa, FL, May 15-19, 2007, pp 1-9.

Gentry, R.W. 2007. Using Decay Series Isotopic Tracers to Develop Conceptual Models Of Aquifer Behavior. Seventeenth Tennessee Water Resources Symposium, Burns, TN, April 17-19, 2007.

Koirala, S.R., Perfect, E. and Gentry, R.W. 2006. Effective Saturated Hydraulic Conductivity of 2-dimensional Random Multifractal Fields, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract H41E-0451.

Gentry, RW, McCarthy, J., Layton, A., McKay, L., and Koirala, S. 2006. Using Hydrologic Tracers as a Risk Assessment Tool in a Karstic Watershed. EWRI 2006 Congress, May 21-25, 2006, Omaha, Nebraska.

Gentry, RW, McKay, L., Layton, A., McCarthy, J. 2006. Using Novel Tracers for Better Understanding of GWUDI in Karst. SE Geological Society of American, March 23-24, 2006, Knoxville, TN.

Layton, AC, McKay, L., Gentry, RW. 2006. Monitoring Fecal Concentrations and Sources in Streams Using Real-time PCR Assays for *Bacteriodes*. SE Geological Society of American, March 23-24, 2006, Knoxville, TN.

Larsen, D., Gentry, RW, Carmichael, J., Thonnard, N., Mckay, L., Anderson, JL, Solomon, DK. 2006. Recharge to the Memphis aquifer through a window in the upper Claiborne confining unit near a closed municipal landfill, Shelby County, Tennessee, USA. SE Geological Society of American, March 23-24, 2006, Knoxville, TN.

Layton, A., Williams, D., Gentry, RW, and McKay, L. 2006. *Bacteriodes* and an Alternative to *E. coli* as a Fecal Indicator. The Sixteenth Tennessee Water Resources Association Symposium, April19-21, 2006, Burns, TN.

Gentry, R.W., Perfect, E. and Sukop, M. 2005. Scaling of Effective Permeability in a 2-Dimensional Geometrical Multifractal Model for Aquifer Heterogeneity, Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstact H11D-1289.

Todd, V.M., Gentry, R.W., McCarthy, J., and Ku, T. 2005. Development of a Colloid Sampling Technique for Suboxic Groundwaters in Memphis, TN, Eos Trans. AGU, 86(52), Fall Meet. Suppl., Abstact H23E-1483.

Larsen, D., Waldron, B., Anderson, J., Gentry, R.W., Ivey, S.S., Owen, A., and Morat, J. 2005. Insights Into Groundwater Recharge Processes And Pathways Based On Hydrochemical And Tritium Data From Municipal Well Fields In Shelby County, Tennessee, USA. Southeastern Section of The Geological Society of America, March 17-18, 2005, Biloxi, Mississippi.

Gentry, R.W., McKay, L., Layton, A., and McCarthy, J. 2005. Development of Novel Tracer Techniques for Better Understanding of karst Transport Characteristics and Surface Water Influences, ASCE-EWRI 2005 World Water and Environmental Resources Congress, May 15-19, 2005, Anchorage, Alaska.

McKay, L.D., Layton, A., and Gentry, R.W. 2004. Development and testing of real-time PCR assays for determining fecal loading and source identification (cattle, human, etc.) in

surface water and groundwater, Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract H43B-0376.

Luo, S., Ku, T., Todd, V.M., Gentry, R.W., and McCarthy, J.F. 2004. Radium isotopes as an indicator of microbial activity in a deep aquifer at Memphis, Tennessee, USA, Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract H41I-02.

Gentry, R.W., McCarthy, J., Layton, A., Mckay, L., and Koirala, S. 2004. Evaluating microbial water quality and potential sources of contamination in a small rural watershed in karstic terrain. Groundwater Quality 2004-4th International Conference, July 19th - 22nd, 2004, University of Waterloo, Ontario, Canada.

Gentry, R.W. 2004. Using Environmental Tracers to Verify and Investigate Conceptual Models of Highly Localized Aquitard Leakage. ASCE-EWRI, 2004 World Water & Environmental Resources Congress, June 27 – July 1, 2004, Salt Lake City, Utah.

Gentry, R.W. 2004. Assessing Ground Water and Surface Water Interaction through Tracer Observation. ASCE-EWRI, 2004 World Water & Environmental Resources Congress, June 27 – July 1, 2004, Salt Lake City, Utah.

Layton, A., L. McKay, D. Williams, V. Garrett, R. Gentry, J. McCarthy, G. Sayler, 2004. Development of real-time PCR assays for the detection of Bacteroides sp., KY/TN Water Environment Association, Pollutant Source Identifcation Specialty Conference, Murfreesboro, TN, May 20, 2004.

Gentry, R.W., J. McCarthy, A. Layton, L. McKay, and S. Koirala 2004. A Hydrologic Investigation into the Occurrence and Causation of Pathogen Indicators in the Stock Creek Watershed, Knoxville, Tennessee. TN Section American Water Resources Association, Thirteenth Annual Tennessee Water Resources Symposium, March 31 – April 2, 2004, Burns, TN.

Layton, A., Williams, D., Garrett, V., McKay, L., Gentry, R., McCarthy, J. and Sayler, G. 2004. Development of real-time PCR assays for the detection of Bacteroides sp. as a method to quantify fecal contamination. TN Section American Water Resources Association, Thirteenth Annual Tennessee Water Resources Symposium, March 31 – April 2, 2004, Burns, TN.

Gentry, R.W., McKay, L.D., Larsen, D., Carmichael, J.K., Solomon, D.K., Thonnard, N. and Anderson, J.L. 2003. Inter-aquifer Dynamics in and near a Confining Unit Window in Shelby County, Tennessee, USA, Eos Trans. AGU, 84(47), Fall Meet. Suppl., Abstract H21D-0868.

Kenst, A., Perfect, E., McCarthy J. and Gentry, R.W., 2003. Movement of Viruses in the vadose zone: a review of transport mechanisms. 13th Annual Tennessee Water Resources Symposium, April 9-11, 2003, Burns, TN.

Ivey, S.S., Larsen, D., Anderson, J., Gentry, R.W., 2003.Use of lumped parameter models for wellhead protection delineation. 13th Annual Tennessee Water Resources Symposium, April 9-11, 2003, Burns, TN.

Embry, M.S., Gentry, R.W., Larsen, D., and Anderson, J.L., 2003. Assessing the susceptibility of the water table to contamination in Tipton County, Tennessee. 13th Annual Tennessee Water Resources Symposium, April 9-11, 2003, Burns, TN.

Garner, C.B., Larsen, D., Carmichael, J., and Gentry, R., 2003. Hydrostratigraphy of a window through the upper Claiborne confining unit, Memphis, Tennessee. Geological Society of America Abstracts with Programs, v. 35, no. 1, p. 20.

Larsen, D., Gentry, R.W., Ivey, S., Solomon, D.K., and Harris, J. 2002, Groundwater leakage through a leaky confining unit beneath a municipal well field, Memphis, Tennessee, USA. In Proceedings of GeoProc2002, March 4-7, 2002. Bremen, Germany.

Gentry, R.W., 2002. The Use of Genetic Algorithms as an Inverse Technique to Guide the Design and Implementation of Research at a Test Site in Shelby County, Tennessee, Eos Trans. AGU, 83(47), Fall Meet. Suppl., Abstract H51C-05, 2002.

Larsen, D., Gentry, R. W., Waldron, B., Ivey, S., Hudgins, S., and Salyers, M., 2001. Variations in Water Quality and Tritium in the Sheahan and Morton Well Fields, Memphis, Tennessee, USA., TNAWRA, Nashville, April 4-6, 2001.

Gentry, R. W., Caldwell, J., 2001. A Collaboration of Informal Science and Formal Science Water Resources Education at the Children's Museum of Memphis, 10th Annual Tennessee Water Resources Symposium, Nashville, April 4-6, 2001.

Larsen, D, Gentry, R., Ivey, S., 2000. Water Quality Impact and Distribution of Modern Recharge on Municipal Pumpage in the Sheahan Well Field, Memphis, Tennessee, USA, GSA December, 2000.

Gentry, R.W., McKay, L. D., Larsen, D., 1999. A Novel Approach for Investigating the Susceptibility of the Memphis Aquifer to Non-Point Pollution Through Windows in the upper Claiborne confining Layer, NGWA AGWS&E Technical Education Program, Nashville, TN, December 3-6, 1999.

Gentry, R.W., Camp, C.V., Anderson, J.L., 1999. The development of a genetic algorithm technique to determine highly probable areas of accretion to a semi-confined aquifer, 9th Annual Tennessee Water Resources Symposium, Nashville, TN, April 12-14, 1999.

Seminars and Invited Presentations:

The Connection Between Bacteroides, E. coli and Catchment Hydrology, ASA-CSSA-SSSA 2007 International Annual Meetings, New Orleans, Louisiana, November 5, 2007.

Emerging Techniques for Quantifying the Persistence of Water Quality Impacts in Watersheds, 4th International Symposium on Persistent Toxic Substances, Beijing, China, November 18-21, 2007.

Urgent Requirements for Developing a Secure and Sustainable Environment. ISCET 2007 & ISBBE 2007, East China University of Science and Technology, Shanghai, China, November 21, 2007.

Sustainability Science: A New Paradigm for Our Common Future, University of Science and Technology of China, Hefei, China, November 25, 2007.

Incorporating Science and Policy: Use of Watershed Signals to Evaluate Sustainability of Natural Systems, Institute for Geographical and Natural Resources Research, Beijing, China, November 28, 2007.

Using Environmental and Geochemical Tracers for Vulnerability Analysis of Leaky Groundwater Systems, the University of Vermont, March 17, 2006.

Using Parameter Estimation Coupled with Environmental Tracers to Explain Aquifer Behavior, Department of Civil Engineering, Louisiana State University, October 13, 2004.

Synoptic Monitoring of Environmental Tracers in and Near Focused Recharge Sites to Better Understand Aquifer Behavior, Department of Civil Engineering, Auburn University, September 15, 2004.

Hydrogeology and Implications of Leakage Between Aquifer Units in the Northern Mississippi Embayment, East Tennessee Geological Society, Pellissippi State Technical Community College, April 12, 2004.

Research on the Nature of Aquitard Windows, Engineers Club of Memphis – PDH, July 14, 2003.

Elevating Ground Water Resources Issues in the Regional Community: Education and New Tools for Decision Makers, EERC – Knoxville, Tennessee, October 22, 2002.

The Use of Environmental Tracers to Better Understand the Risks to Semi-Confined Aquifers from Abandoned or Proposed Waste Sources, Air & Waste Management Association - Knoxville, October 2, 2002.

The Future of Inverse Techniques Within Ground Water Hydrology With Environmental Tracer Data, ORNL-Oakridge, Tennessee, September 27, 2002.

Protecting Ground Water Sources: Quality & Quantity, Tennessee Clean Water Network Conference Franklin, Tennessee, September 20, 2002.

Using Multiple Techniques to Evaluate Aquifer Susceptibility, CEB-Knoxville, Tennessee, September 13, 2002.

Ground water resources: Some concepts behind the hydraulics and hydrology, Bethel College, March 20, 2001.

An overview of ground water resources and research within the northern Mississippi Embayment, Arkansas State University, February 15, 2001.

Concepts behind Contaminant Fate and Transport and the Ground Water Hydrology of the Mississippi Embayment, Carroll-Gibson County Environmental Group, March, 2001.

The use of environmental tracers to better understand inter-aquifer hydraulics in Shelby County, Tennessee, AwwaRF Technology Transfer Conference, Miami, January 25, 2001.

Inverse modeling: *A comparison of a genetic algorithm technique with a modified Gauss-Newton technique for predicting accretion to a semi-confined aquifer*, Rhodes College, October 10, 2000.

Research Funding (as PI):

University of Tennessee, SARIF Equipment and Infrastructure Fund, SARIF Equipment Proposal for Programmable Water Sampling and Monitoring Equipment, R. Gentry (PI), McKay, L. (Co-PI), McCarthy, J. (Co-PI), Schwartz, J. (Co-PI), Layton, A. (Co-PI), Sanseverino, J. (Co-PI), Sayler, G. (Co-PI), *$25,650*.

Tennessee Department of Environment and Conservation, Efficacy of using algae chloroplasts and berillyum-7 to aid in GWUDI determination. R. Gentry (PI), L. McKay (Co-PI), J. McCarthy (Co-PI), and A. Layton (Co-PI), *$161,920 External Funds*.

National Park Service**,** Cumberland Gap National Historic Park analysis of water monitoring data and recommendations for future activity, R. Gentry (PI) and R. B. Robinson (Co-PI), *$2,500 Total External Funds*.

Tennessee Department of Environment and Conservation, An evaluation of watershed practices and the occurrence of *E. Coli*, R. Gentry (PI), Alice Layton (Co-PI), John McCarthy (Co-PI) and Larry McKay (Co-PI), *$25,000 Total External Funds*.

National Park Service, Little Yellow Creek Planning Level Assessment, 2002-2003, R. Gentry (PI), R. Robinson (Co-PI), G. Reed (Co-PI), *$35,000 Total External Funds.*

Tennessee Department of Environment and Conservation, A Proposal for the Development of a Science Based River/Groundwater Education Exhibit at the Children's Museum of Memphis, 2000-2001, R. Gentry (PI), *$18,960 Total External Funds.*

Tennessee Water Resources Research Center, An Investigation to Identify Sources and Quantities of Modern Recharge to the Memphis Aquifer in the Sheahan Well field in Shelby County, Tennessee, 2000-2001, R. Gentry (PI), D. Larsen, J. Harris, J. Anderson, K. Solomon. *$24,996 Total External Funds.*

American Water Works Association Research Foundation, A Novel Approach for Understanding the Recharge Mechanisms to the Memphis Aquifer in Shelby County, Tennessee, 2000-2005, R. Gentry (Research PI) with L. McKay, N. Thonnard, J. Anderson, D. Larsen, K. Solomon, and J. Carmichael. *$350,000 External Funding, $494,812 Total Project Funds.*

Research Funding (as Co-PI)*:*

U.S.-China Workshop on Bioenergy Consequences of Global Environmental Change, National Science Foundation (NSF- 0757267), Zhuang, J. (PI), Sayler, G.S. (Co-PI), and Gentry, R.W. (Co-PI), *$49,500*.

University of Tennessee, SARIF Equipment and Infrastructure Fund, Acquisition of an Ultra Rock-Core Centrifuge for Determining Hydraulic Properties of Variably-Saturated Porous Media, Perfect, E. (PI), Jardine, P. (Co-PI), Gentry, R.W. (Co-PI), McCarthy, J.F. (Co-PI), and McKay, L. (Co-PI), *$51,362*.

Tennessee Department of Environment and Conservation, Development And Testing Of Improved Methods For Dye Tracing In The Sub-Visual Range, McKay, L.D. (PI), Gentry, R.W. (Co-PI), and McCarthy, J. (Co-PI), *$150,000.*

National Science Foundation, Acquisition of an Unsaturated Flow Apparatus (UFA) with Technical Support to Investigate Hydrologic Processes in the Vadose Zone. Perfect, E. (PI), McCarthy, J. (Co-PI), McKay, L. (Co-PI), and Gentry, R. (Co-PI), *$160,000 Total External Funds*.

National Science Foundation, Collaborative Research (USC and UT): A Study of Naturally Occurring Decay-Series Isotopes as Quantitative Hydro-Geochemical Tracers, T. Ku (PI), J. McCarthy (Co-PI), R. Gentry (Co-PI), *$90,000 Federal Funds, $114, 306 Total UT Project Funds*.

Tennessee Water Resource Research Center, Evaluation of pathogen occurrence and causation within the stock creek watershed (Knox County) as a model for watershed restoration, J. McCarthy (PI), A. Layton (Co-PI), R. Gentry (Co-PI) and L. McKay (Co-PI), *$34,070 External Funds, $102,580 Total Project Funds.*

Shelby County Ground Water Quality Control Board, Preliminary study to determine whether modern water is entering the Memphis Sand aquifer beneath Memphis and Shelby County, TN., 1999-2000, with J. Anderson (PI), and D. Larsen. *$46,500 Total External Funds.*

U.S. Army Corps of Engineers Waterways Experiment Station, The Forest Communities and Hydrology of Western Tennessee Floodplains, 1998-2000, with S. Franklin (PI), R. Pezeshki, J. Kupfer. *$65,000 Total External Funds.*

Teaching and Student Mentoring:

Ph.D. Students Supervised:

Koirala, Shesh (2007) Time and Frequency Domain Analyses of Hydrologic and Stream Water Quality Data, The University of Tennessee, Completed Ph.D. Civil Engineering, December 2007.

Thesis Graduate Students Supervised:

McKenna, Amanda (2007) Characterizing Groundwater-Surface Water Interactions in Great Smoky Mountains National Park Using Hydrologic, Geochemical & Isotopic Data, Completed M.S. Environmental Engineering, December 2007.

Owen, Candice (2007) Using Multivariate Analysis of Geochemical Data to Better Define Hydrologic Interfaces in Surface Water - Groundwater Systems, Completed M.S. Environmental Engineering, December 2007.

McMahon, Patrick (2005) The Inverse Application of Conformal Mapping Techniques to Describe Groundwater Flow-Regimes Through a Window in the Upper Claiborne Confining Layer, The University of Tennessee, Completed M.S. Environmental Engineering, May 2005.

Johnson, Matthew (2004) A Synoptic Evaluation of Water Quality for Little Yellow Creek in Cumberland Gap National Historic Park. M.S. thesis, The University of Tennessee, Completed M.S. Environmental Engineering, May 2004.

Goff, Karen Marie (2003) A Sensitivity Analysis of the Influence of Watershed and Development Characteristics on the Cumulative Impacts of Stormwater Detention Ponds. M.S. thesis, The University of Tennessee, completed M.S. Environmental Engineering May 2003.

Non-Thesis Graduate Students Supervised:

McCall, Michael, University of Tennessee, M.S. Env. Engineering, December 2007.
Hu, Xiaoting, University of Tennessee, M.S. Env. Engineering, December 2007.
Crouch, Michael, University of Tennessee, M.S. Env. Engineering December 2004.
Cavalcanti, Nicole, University of Tennessee, M.S. Env. Engineering August 2004.
Buckingham, Richard, University of Tennessee, M.S. Civil Engineering August 2003.

Courses Taught:

[†]Hydrology (CE395), Undergraduate, University of Tennessee.
Water Resources Engineering (CE490), Undergraduate/Graduate, University of Tennessee.
Senior Design Project (CE400), Undergraduate, University of Tennessee.
[†]Groundwater Hydrology (ENV 535), Graduate, University of Tennessee.
Open Channel Hydraulics (ENV 520), Graduate, University of Tennessee.
Groundwater Hydraulics (CIVL 7195), Graduate, University of Memphis.
Groundwater Quality & Control (CIVL 7197), Graduate, University of Memphis.

[†]In addition to on-campus offering, these courses were also offered through the distance education program at The University of Tennessee.

Service:

State of Tennessee:

Member, Water Resources Technical Advisory Committee (October 2007 – present)

University of Tennessee:

Civil and Environmental Engineering

Member, Assessment Committee, 2003-2004
Faculty Meeting Secretary, 2002-2003

Other University Partnerships & Affiliations

Faculty Senate, 2005-2008
- Member of Research Council
  - Strategic Planning Sub-committee
  - Centers & Institutes Review Sub-committee

Earth Science Fair, 2003
Southeastern Water Resources Institute Planning Committee
Water, Science and Policy in the 21st Century Symposium Planning Committee

ASCE-Environmental Water Resources Institute:

Ground Water Management Committee

Vice-Chair for Task Committees, Groundwater Management Committee 2002-2004

Ground Water Hydrology Committee

Vice-Chair, Groundwater Hydrology Committee, September 2007 – present
Secretary, Groundwater Hydrology Committee, 2003-2004

Consortium for the Advancement of the Hydrological Sciences (CUASHI):

Board of Directors Alternate for the University of Tennessee, 2002-2004
Participant in the Santee River Basin Hydrologic Observatory Prospectus
Participant in the Yazoo River Basin Hydrologic Observatory Prospectus

TN-American Water Resources Association:

President, Tennessee Section of the AWRA (TNAWRA), 2002-2003

Awards:

Department of Civil & Environmental Engineering, Service Recognition Award, 2008.
Department of Civil & Environmental Engineering, Scholar Recognition Award, 2007.
Department of Civil & Environmental Engineering, Service Recognition Award, 2006.
Department of Civil & Environmental Engineering, Teaching Recognition Award, 2005.