

## Marcus O. Gary – curriculum vitae

Professional Geoscientist, State of Texas  
Senior Hydrogeologist, Edwards Aquifer Authority, San Antonio, Texas  
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**OBJECTIVE** – Conduct hydrogeologic investigations to expand the understanding of karst forming processes, and study the implications that karst geology has on natural resource management.

### EDUCATION

#### *The University of Texas, Austin, Texas*

- Ph.D. in hydrogeology; dissertation topic – Speleogenesis and karst hydrogeology of deep phreatic caves, Sistema Zacatón, Mexico, December 2009 – GPA = 3.875.
- B.S. degree in hydrogeology / environmental geology, December 2001 – Major GPA = 3.5.
- Geological Society of America presenter covering personal research of deep phreatic caves.
- Research team member collecting coral cores in Barbados for U-series isotopic dating.
- Organized and funded initial studies of deep, phreatic hydrothermal cave system in Mexico resulting in three publications as an undergraduate student and ten as a graduate student.
- Chairman, University of Texas Grotto: National Speleological Society chapter (2001-2003).
- Maintain and operate continuous water quality meter at Jacob's Well – analyze data.
- Co-chief scientist of DEPTHX project – NASA funded robotic underwater cave exploration.

#### *College of Oceaneering, Los Angeles, California*

- Associate of Science degree in Marine Technology with highest honors, February 1994.
- Studied applied commercial diving techniques for industrial and scientific purposes.
- Specialized in emergency medical and hyperbaric treatment of diving related accidents.

#### *HONORS AND AWARDS*

- National Speleological Society, Certificate of Merit; for research on deep, water-filled limestone sinks at Rancho La Azufrosa, Tamaulipas, Mexico, August 15, 2008.
- National Brunton Award – distinction in field geology, May 2002.
- Graduated with highest honors at College of Oceaneering, 1994.

### WORK HISTORY

#### *Edwards Aquifer Authority, Senior Hydrogeologist*

*2011 – present*

- Perform gain/loss studies in the Edwards Aquifer recharge zone and contributing zone.
- Evaluate interformational flows from the Trinity Aquifer to the Edwards Aquifer.
- Plan and manage aquifer dye tracer investigations.
- Develop continuous water quality monitoring network for major springs.
- Compile recharge data and compile quarterly reports for recharge structures.

#### *Zara Environmental LLC, Senior Hydrogeologist*

*2007 – 2011*

- Professional Geoscientist, State of Texas; lic. # 10386.
- Manage karst recharge study at Camp Bullis, San Antonio, TX.
- Oversee karst impacts of geotechnical drilling for LCRA power lines in sensitive areas.
- Manage field operations for dye trace study from the Blanco River to San Marcos Springs.
- Manage field operations for dye trace study in Kinney County, Texas.
- Manage field operations for dye trace study at San Felipe Springs, Del Rio, Texas.
- Perform geologic assessments in sensitive karst areas.

- Prepare groundwater technical reports for NEPA documentation.
- Prepare hydrogeologic chapters for EIS projects within the Edwards Aquifer.
- Create and manage karst feature database for Edwards Aquifer area.
- Analyze and publish reports on area-wide recharge within Camp Bullis, TX.
- Conduct downhole camera surveys and prepare reports on karst features located in boreholes.
- Prepare groundwater sections for HCP and EIS for the Edwards Aquifer RIP.

***The University of Texas at Austin, Department of Geological Sciences*** ***2011 – present***

- Adjunct Professor.
- Teach graduate/undergraduate course in “Applied Karst Hydrogeology.”

***United States Geological Survey, Water Resources Division*** ***2000 – 2007***

- Process groundwater and sediment samples for analysis.
- Manage data for water contamination study.
- Fabricate sampling equipment.
- Diving support for coring projects and karst monitoring projects.
- Design, installation, and operation of continuous water quality monitor – Barton Springs.
- Cave diving coordinator and Central Region Dive Safety Officer, USGS.
- Maintain and operate stream gauging stations.
- Maintain and operate automated water samplers.
- Maintain and operate variety of continuous water quality instruments.
- Field Supervisor – Geochemical investigation of Barton Springs Segment of Edwards Aquifer.
- Field Supervisor – TMDL study of Arroyo Colorado
- Field Supervisor/Data Manager – SWAP Toxic Algae study of Texas reservoirs
- Develop methods to quantify karst spring flow using acoustic Doppler velocity technology.
- Project Chief – Jacob’s Well Spring monitoring project
- Project Chief – Comal Springs/San Marcos Springs Springflow Quantification Pilot Study.

***Raytheon Contractors and Engineers*** ***1996 – 1997***

- Diver recovering ICBMs on remote Pacific Ocean missile test facility – Kwajalein Atoll.
- Maintained and operated: two-manned submarine; remote underwater vehicle; side-scanning SONAR; and related search and recovery equipment.
- Conducted hyperbaric medical treatments for both diving and non-diving related conditions.
- Engineered and completed refit of hyperbaric treatment facilities.

***Espey – Huston and Associates*** ***1995 – 1996***

- Diver conducting archeological surveys precluding construction on inter-coastal waterways along the Texas gulf coast.
- Operate magnetometer and rotating SONAR scanning unit for submarine surveys.
- Designed and fabricated high-pressure air regulating manifold to supply divers breathing air.

***College of Oceaneering*** ***1993 – 1995***

- Maintenance supervisor of diving systems and harbor facilities for commercial diving school.
- Designed and fabricated breathing air distribution system.
- Original employment served as student work – study apprenticeship.

**APPLIED SKILLS, CERTIFICATIONS, AND PROFESSIONAL MEMBERSHIPS**

- Member; Edwards Aquifer Authority, Aquifer Science Advisory Panel.
- Director; Manville Water Supply Corporation Board of Directors.

- Professional Geoscientist, State of Texas; lic. # 10386.
- Engineer and support diver for deep cave diving project in east- central Mexico reaching world – records depths in submerged caves.
- Geological Society of America member.
- American Institute of Hydrology member.
- National Speleological Society member.
- American Geophysical Union member
- Metal fabrication specializing in MIG welding techniques.
- Emergency Medical Technician (EMT 1A): State of California and National Registry of Emergency Technicians.
- Diver Medical Technician: National Board of Diving and Hyperbaric Technicians.
- Cave diver: National Speleological Society – Cave Diving Section; National Association for Cave Diving.
- USGS trained in water quality field methods for surface water and ground water.
- Application of shallow sub-surface geophysical methods in hydrogeologic investigations.
- High-precision mapping of karst features using GPS, LIDAR, SONAR, and ER geophysics

### **SELECTED MEDIA ARTICLES RELATED TO RESEARCH**

*Changing the World: Stories Celebrating 100 Years of Graduate Education at The University of Texas at Austin*, University of Texas Press, 2010, p. 40-41.

*Robot Seeks New Life – and New Funding – in the Abyss of Zacatón*, **Science**, v. 315, no. 5810, p. 322-324.

*Sinkhole Expert Says Curiosity Drives Him to Explore*, **Earth/Sky: A Clear Voice for Science**, podcast aired on National Public Radio, June 13, 2007.

*The New Explorers: The Deep-Earth Diver*, **Men’s Journal**, v. 16, no. 9 (October 2007), p. 100.

*Mexican Sinkhole May Lead NASA to Jupiter*, **The Washington Post**, May 14, 2007, p. A06.

*How Low Can Geologists Go?*, **Geology.com**, June 6, 2007.

### **FUNDED PROJECTS PRIOR TO EMPLOYMENT WITH ZARA ENVIRONMENTAL**

**DEPTHX (The Deep Phreatic Thermal Explorer) (2004-2007)** – Development and testing of autonomous underwater vehicle for exploring and characterizing deep underwater caves  
Funding Organization – National Aeronautics and Space Administration  
Funding amount - \$ 5,300,000.

**Jacob’s Well Springflow Monitoring (2005-2006)** – Install and maintain continuous real-time gauge.  
Funding Organizations – Hays-Trinity Groundwater Conservation District / USGS  
Funding Amount - \$ 120,000

**San Marcos / Comal Springs Springflow Quantification (2006-2007)** – Evaluate the application of Acoustic Doppler Velocity Meters to gauge spring flow.  
Funding Organizations – Edwards Aquifer Authority / USGS  
Funding Amount - \$ 175,000.

**Jacob’s Well Monitoring (2006-2008)** – Continue monitoring of spring  
Funding Organizations – Texas Commission for Environmental Quality / USGS  
Funding amount - \$ 99,417.

### **SELECTED PROJECT REPORTS AT ZARA ENVIRONMENTAL**

Groundwater Direct, Indirect, and Cumulative Effects – U.S. Highway 281 Environmental Impact Study, Bexar County; chapter sections prepared for Jacobs Engineering, January 12, 2011.

Geologic Assessment – U.S. Highway 281 Environmental Impact Study, Bexar County; report prepared for Jacobs Engineering, December 6, 2010.

Geologic Assessment – Loop 1604 Environmental Impact Study, Bexar County: report prepared for Michael J. Baker Jr., Inc., November 19, 2010.

Groundwater Technical Report; Spur 53, San Antonio Texas; report prepared for Texas Department of Transportation, June 25, 2010.

Hays County Karst Invertebrate Distribution and Cave Development, report prepared for Hays County and Texas Parks and Wildlife Department, July 15, 2010.

Groundwater Technical Report; Interstate Highway 10-Loop 1604 Interchange; report prepared for Cox/McClain, August 15, 2009.

Geologic Assessment – DPS Academy near Florence, Texas; report prepared for URS Corporation, November 15, 2008.

## PRESENTATIONS AND CONFERENCE SESSION CHAIRS

\* invited speaker

- Session Chair, Interconnection of the Edwards and Trinity (Glen Rose) Aquifers, U.S. Fish and Wildlife Karst Conservation Initiative, Austin, Texas, February 17, 2011
- U.S. Fish and Wildlife Karst Conservation Initiative, February 17, 2011, *Spatial and temporal recharge variability related to groundwater interconnection of the Edwards and Trinity Aquifers, Camp Bullis, Bexar and Comal Counties, Texas*, Austin, Texas.
- Session Chair, Karst Hydrogeologic Systems of the Central United States and Northern Mexico, Geological Society of America, 2010 North-central and South-central joint meeting, Branson, Missouri.
- \* Texas Speleological Association, 2010 Spring Convention, March 27, 2010, *3-D mapping and characterization of Sistema Zacatón from DEPTHX (Deep Phreatic Thermal Explorer)*, Cedar Park, Texas,.
  - \* The University of Cincinnati Colloquium Lecturer Series, May 8, 2009, *Geologic and biologic discoveries at Sistema Zacatón: New technologies in underwater cave exploration*, Cincinnati, Ohio.
  - \* State of Kentucky Student Technology Learning Program, May 6, 2009, *From underwater caves to outer space: A quest for extraterrestrial life*, Lexington, Kentucky.
  - \* American Society of Civil Engineers, 11<sup>th</sup> Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Aspects of Karst, September 23, 2008, *3-D mapping and characterization of Sistema Zacatón from DEPTHX (Deep Phreatic Thermal Explorer)*, Tallahassee, Florida.
  - \* National Cave and Karst Research Institute distinguished lecturer series, , January 3, 2008, *Geologic and biologic discoveries at Sistema Zacatón: New technologies in underwater cave exploration*, Carlsbad, New Mexico.
- Special Session Chair, Geological Society of America, Annual Convention, Denver, CO, October 29, 2007, *The Deep Phreatic Thermal Explorer: Robotic exploration and characterization of Sistema Zacatón on the mission path to Europa*, Denver, Colorado.
- \* South Texas Geological Society, May 9, 2007, *From the aquifer to outer space: Unique underwater cave research in Mexico*, San Antonio, Texas.
  - \* Geological Society of America, Annual Convention, Philadelphia, October 24, 2006, *Electrical resistivity imaging of travertine-capped sinkholes: deep lakes with lids*.
  - \* Austin Geological Society, October 2, 2006, *Mysteries of Sistema Zacatón: A connection between caves, water, microbes and space*. Austin, Texas.

- \* Oklahoma State University, September 27, 2006, *Sistema Zacatón: exploring the deep underwater subsurface in search of microbial life*. Stillwater, Oklahoma.
- \* Texas State University, Geography 4334 class lecture (Rick Illgner, Inst.), August 31, 2006, *Principles of Hydrogeology*, San Marcos, Texas.
- Hays Trinity Groundwater Conservation District, Water Conference to Pose Question: “Save it or Drain it?”, August 18, 2006, *Jacob’s Well Springflow, will it stop flowing?*, Wimberley, Texas.
- \* The Guadalupe-Blanco River Authority, May 22, *Springflow quantification pilot study*, Seguin, Texas, 2006.
- \* The University of Texas Bureau of Economic Geology, Technical Seminar Series, February 17, 2006, *DEPTHX—Autonomous exploration of underwater caves as a path to search for life on Europa*. Austin, Texas.
- \* The Universidad Autonoma de Nuevo Leon Facultad de la Ciencias Tierras, XII Semana Nacional de Ciencia y Tecnológica, , October 24, 2005, *Exploración y Investigación del Sistema Zacatón: Pasado, Presente y Futuro*. Linares, Nuevo Leon, Mexico.
- \* Texas Water Development Board, April 8, 2005, *Deep Phreatic Thermal Explorer – DEPTHX: Exploring and characterizing deep karst aquifers*. Austin, Texas.
- \* VII Congreso Nacional de Espeleología UMAE, February 22, 2005, *Exploración y Investigación del Sistema Zacatón: Pasado, Presente y Futuro*, Monterrey, Nuevo Leon, Mexico.
- Geological Society of America, Annual Convention, November 8, 2004, *Preliminary analysis of microbial habitats and geochemical conditions of Sistema Zacatón, Mexico*. Denver, Colorado.
- Blanco Watershed Summit, Wimberley Valley Watershed Association and the Texas Watch program at Texas State University, July 17, 2004, *Monitoring Springs in Karst Aquifers: Continuous Data for ground-water analysis*, San Marcos, Texas.
- \* Texas Water Development Board, September 2, 2003, *Research Diving in Texas and Mexico: Collecting data in the underwater environment*, Austin, Texas.
- Texas Speleological Association Annual Convention, May 3, 2003, *Estudios de Profundidad: Where we are, were we’ve been, and where we’re going*, Boerne, Texas.
- Environmental Science Institute, The University of Texas at Austin, Border Environment Conference, February 23, 2002, *Goodenough to Investigate: Requantifying Discharge and Quality of Texas’ Third Largest Spring, Goodenough Springs*, Austin, Texas.

## PUBLICATIONS

- Gary, M.O.**, 2011 (in press), Volcanogenic karst processes at Sistema Zacaton: Forming megaporosity in a hypogene setting, Carbonate Geochemistry: Reactions and processes in aquifers and reservoirs, Karst Waters Institute, Billings, MT. p. xx.
- Gary, M.O.**, 2011, Interconnection of the Edwards and Trinity Aquifers, central Texas, U.S.A., 2011 International conference on karst hydrogeology and ecosystems proceedings, Bowling Green, Kentucky, p. 89.
- Gary, M.O.**, Doctor, D.H., Sharp, J.M., Jr., 2011, Aqueous geochemical evidence of volcanogenic karstification: Sistema Zacatón, Mexico, U.S. Geological Survey Karst Interest Group proceedings, Fayetteville, Arkansas, April 26–29, 2011: U.S. Geological Survey Scientific Investigations Report 2011–5031, p. 35.
- Sahl, J.W., **Gary, M.O.**, Harris, J.K., Spear, J.R., 2011, A comparative molecular analysis of water-filled sinkholes in north-eastern Mexico, Environmental Microbiology, v. 13, no. 1, p. 226-240.
- Gary, M.O.**, Shade, B., Gary, R.H., Veni, G., 2010, Spatial and temporal recharge variability related to groundwater interconnection of the Edwards and Trinity aquifers, Camp Bullis,

- Bexar and Comal Counties, Texas, Geological Society of America Abstracts with Programs, 2010 Joint Annual Meeting, Denver, Colorado.
- Zappitello, S.J., **Gary, M.O.**, Cowen, B., 2010, Geologic and anthropogenic controls on carbon dioxide in Edwards and Trinity limestone caves, Bexar County, Texas, Geological Society of America Abstracts with Programs, 2010 Joint Annual Meeting, Denver, Colorado.
- Meyer, N.C., **Gary, M.O.**, Spatial density analysis of karst diagenesis and aquifer recharge sensitivity, Edwards Aquifer, Texas, Geological Society of America Abstracts with Programs, 2010 Joint Annual Meeting, Denver, Colorado.
- Gary, M.O.**, 2010, Karst hydrogeology and speleogenesis of Sistema Zacatón, Association of Mexican Cave Studies, Austin, Texas, Bulletin 21, 114 p.
- Gary, M.O.**, 2010, Karstification of the Sierra Madre Oriental: A hydrogeologic record of regional diagenesis, Geological Society of America, 2010 North-central and South-central joint meeting abstracts with programs, Branson, Missouri, p. 70 (20-6).
- Swartz, B., Doctor, D.H., **Gary, M.O.**, 2010, Quantifiable characteristics for a statistical approach toward karst classification, Geological Society of America, 2010 North-central and South-central joint meeting, Branson, Missouri.
- Gary, M.O.**, 2010, Karst Hydrogeology and speleogenesis of Sistema Zacatón, The University of Texas at Austin Ph.D. dissertation, 232 pp.
- Gary, M.O.**, Sharp, J.M., Jr., 2009, Volcanogenic karstification: Implications of this hypogene process, National Cave and Karst Research Institute Symposium 1, Advances in Hypogene Karst Studies, p. 27-39.
- Stafford, K. W., Land, L., Klimchouk, A., **Gary, M.O.**, 2009 , The Pecos River Hypogene Speleogenetic Province: A New Basin-Scale Karst Paradigm for Eastern New Mexico and West Texas, National Cave and Karst Research Institute Symposium 1, Advances in Hypogene Karst Studies, p. 121-135.
- Gary, M.O.**, Halihan, T., Sharp, J.M., Jr., 2009, Detection of sub-travertine lakes using electrical resistivity imaging, Sistema Zacatón, Mexico, 15<sup>th</sup> International Congress of Speleology Proceedings, Kerrville, Texas, p. 575-579.
- Gary, M.O.**, Sahl, J., Bennett, P.C., Spear, J., Sharp, J.M., Jr., 2009, Aqueous geochemical environments of Sistema Zacatón, 15<sup>th</sup> International Congress of Speleology Proceedings, Kerrville, Texas, p. 370.
- Sahl, J., Harris, J.K., **Gary, M.O.**, Stone, W.C., Spear, J., 2009, An autonomous robotic exploration of deep phreatic sinkholes reveals a wealth of microbial diversity, 15<sup>th</sup> International Congress of Speleology Proceedings, Kerrville, Texas, p. 408-409.
- Doctor, D. H., Schwartz, B. F., **Gary, M. O.**, 2009, Preliminary development of a quantitative karst classification system, PHORMS, 15<sup>th</sup> International Congress of Speleology Proceedings, Kerrville, Texas, p. 843-848.
- Gary, M.O.**, Sharp, J.M., Jr., 2008, Volcanogenic karstification: Implications of this hypogene process, Geological Society of America Abstracts with Programs, 2008 Joint Annual Meeting, Houston, Texas, p. 343.
- Gary, M.O.**, Fairfield, N., Stone, W.C., Wettergreen, D., Kantor, G., Sharp, J.M., Jr., 2008, 3-D mapping and characterization of Sistema Zacaton from DEPTHX (Deep Phreatic Thermal Explorer), Proceedings of the 11th Multidisciplinary Conference on Sinkholes and the Engineering and Environmental Impacts of Karst, American Society of Civil Engineers Geotechnical Special Publication no. 183, pp. 202-212.

- Kiesling, R.L., Gary, R.H., and **Gary, M.O.**, 2008, Monitoring indicators of harmful Cyanobacteria in Texas: U.S. Geological Survey Fact Sheet 2008–3009, 2 p.
- Gary, M.O.**, Gary, R.H., Asquith, W.A., 2008, Evaluation of acoustic Doppler velocity meters to quantify flow from Comal Springs and San Marcos Springs, Texas, USGS Scientific Investigations Report 2008-5083, 37 p.
- Ramirez Fernandez, J.A., Velasco Tapia, F., Viera Decida, F., Vasconcelos Fernandez, J.M., **Gary, M.O.**, 2007, Tertiary interplate mafic magmatism in the Eastern Mexican alkaline province : Villa Aldama volcanic complex, Geological Society of America abstracts with programs, 2007 Annual Meeting, Denver, p. 390.
- Gary, M.O.**, 2007, Establishing Temporal Trends: The first two years of continuous monitoring at Jacob's Well Spring, Woodcreek, Texas, 15<sup>th</sup> National Nonpoint Source Monitoring Workshop, Texas Commission for Environmental Quality, Austin, Texas.
- Gary, M.O.**, Sharp, J.M., Jr., Halihan, T., and Ramirez Fernandez, J.A., 2007, Mammoth discovery: Paleontological and geophysical evidence for timing and sequence of karstification at Sistema Zacatón, Mexico: Geol. Soc. America, Abs. with Programs (South-Central Sec. Mtg.), v. 39, no. 3, p. 28.
- Caramana, G., **Gary, M.O.**, 2006, Applicazioni di metodologie di immersione scientifica e ROV (Remote, Operated, Vehicle) nello studio geologic comparator die due sinkholes allagatie piú profondi del pianeta: Pozzo del Merro (Lazio, Italia Centrale), El Zacatón (Tamaulipas, Messico), Italian Institute for Environmental Protection and Research, [http://www.apat.gov.it/site/\\_files/sinkhole/211\\_228.pdf](http://www.apat.gov.it/site/_files/sinkhole/211_228.pdf)
- Gary, M.O.**, Asquith, W.A., 2006, Karst spring monitoring using acoustic Doppler velocity data, Geological Society of America, 2006 Philadelphia Meeting, Topical Session T74, paper 74-3.
- Gary, M.O.**, Halihan, T., Sharp, J.M., Jr., Mouri, S., Thorstad, J., 2006, Electrical resistivity imaging of travertine-capped sinkholes: deep lakes with lids, Geological Society of America, 2006 Philadelphia Meeting, Topical Session T65, paper 218-4.
- Gary, M.O.**, Ramirez Fernandez, A.J., Sharp, J.M., Jr., 2006, Limestone dissolution driven by volcanic activity, Sistema Zacatón, México, XII Symposium on Vulcanospeleology, Tepoztlan, México, Program and Abstracts, p. 13.
- Gary, M.O.**, Sharp, J.M., Jr., 2006, Volcanogenic Karstification of Sistema Zacatón, Geological Society of America Special Paper 404: Harmon, R., Wicks, C. eds., pp. 79-89.
- Gary, M.O.**, Fairfield, N., Stone, W.C., Wettergreen, D., Kantor, G., Sharp, J.M., Jr., 2006, DEPTHX: Underwater mapping and imaging of deep karst shafts, American Association of Petroleum Geologists Annual Meeting, Houston technical program.
- Gary, M.O.**, Asquith, W.A., 2005, Monitoring Springs in Karst Aquifers, National Ground Water Association, Ground Water Summit Program and Abstract Book, San Antonio, p. 241.
- Asquith, W.A., **Gary, M.O.**, 2005, Acoustic Doppler velocity monitoring within Main Barton Spring, Barton Springs, Austin, Texas, April-September 2004 – enhancing the accuracy of springflow data, USGS Fact Sheet 2005-3044, pp. 1-4.
- Gary, M.O.**, 2005, Exploración y Investigación del Sistema Zacatón: Pasado, Presente y Futuro, VII Congreso Nacional de Espeleología UMAE, pp. 22-26.
- Gary, M.O.**, 2004, Preliminary analysis of microbial habitats and geochemical conditions of Sistema Zacatón, Mexico, Geological Society of America, 2004 Denver Annual Meeting, Abstracts with Programs v. 36 no. 5, p. 259
- Gary, M.O.**, 2004, Monitoring springs in karst aquifers, Abstract, Blanco Watershed Summit, Wimberly Valley Watershed Association, San Marcos, Texas.
- Gary, M.O.**, Asquith, W.H., Turnipseed, D.P., 2003, Using acoustic Doppler velocities to index the surface-water – ground water interface in Barton Springs, Edwards Aquifer, Central Texas, USGS Surface Water Conference Proceedings, San Antonio, p. 34.

- Gary, M.O.**, Sharp, J.M.Jr., Caramana, G., Havens, R.H., 2003, Volcanically Influenced Speleogenesis: Forming El Sistema Zacatón, Mexico and Pozzo Merro, Italy, the Deepest Phreatic Sinkholes in the World, Geological Society of America, 2003 Seattle Annual Meeting Abstracts with Programs v. 34, no. 7, p. 52.
- Van Metre, P.C., Wilson, J.T., Harwell, G.R., **Gary, M.O.**, Heitmuller, F.T., Mahler, B.J., 2003, Occurrence, trends, and sources in particle-associated contaminants in selected streams and lakes in Fort Worth, Texas, USGS Water-Resources Investigations Report 03-4169, 154 p.
- Gary, M.O.**, Sharp, J.M.Jr., Havens, R.H., Stone, W.C., 2003, Sistema Zacatón: Identifying the connection between volcanic activity and hypogenic karst in a hydrothermal phreatic cave system, *Geo<sup>2</sup>*, Section of Cave Geology and Geography of the National Speleological Society, Volume 29, No. 3 & 4, pp. 1-14.
- Mahler, B.J., Canova, M.G., **Gary, M.O.**, 2002, Occurrence of selected volatile organic compounds and soluble pesticides in Texas public water-supply source waters, 1999-2001, USGS Fact Sheet 02-02, pp. 1-4.
- Gary, M.O.**, 2002, "Understanding Zacatón: Exploration and initial Interpretation of the world's deepest known phreatic sinkhole and related karst features", *Hydrogeology and Biology of Post-Paleozoic Carbonate Aquifers*, Karst Waters Institute Special Publication #7, pp. 141-145.
- Mahler, B.J., **Gary, M.O.**, Canova, M.G., Strom, E.W., Fahlquist, L, Dorsey, M.E., 2002, Volatile organic compound and pesticide data for public water-supply reservoirs and wells, Texas, 1999-2001, USGS Open-File Report 02-093, 105 p.
- Gary, M.O.**, Stone W.C., 2002, Creating a multi-sourced, high resolution 3-D karst aquifer model using LADAR, SONAR, and Earth Resistivity datasets, *Terrain Analysis for Water Resources Applications Symposium*, University of Texas Center for Research in Water Resources, December 16-20, Austin, Texas, <http://www.crrw.utexas.edu/terrainAnalysis/abstracts.cfm>.
- Gary, M.O.**, 2001, Los Cenotes de Rancho La Azufrosa, *Association of Mexican Cave Studies Activities Newsletter*, Vol. 24, pp. 31-38.
- Gary, M.O.**, 2000, Speleogenesis of Zacatón and cenotes of Rancho La Azufrosa, *Proceedings of the 20<sup>th</sup> Annual Symposium/American Academy of Underwater Sciences*, October, 2000, p. 55-56.
- Gary, M.O.**, 2000, Genesis and Evolution of Massive Cenotes, Tamaulipas, Mexico, *Abstracts Geological Society of America South-Central Region Annual Meeting*, Fayette, Arkansas. p. 39.