

Thomas J. McDonald

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Education

Ph.D. Oceanography, Texas A&M University, 1988
M.S., Oceanography, Texas A&M University, 1982
B.S., Chemistry, Texas A&M University at Galveston, 1980

Professional Training

ThermoQuest Corporation, Techniques of GC-LC/MS-MS, 1999
Hewlett Packard Company, Fundamentals and Operation of LC/MS, 1990
Perkin Elmer Company, Fundamentals of Gas Chromatography, 1981

Professional Experience

Associate Professor, Health Science Center, School of Rural Public Health, Texas A&M System, September 2006 – present.
Assistant Professor, Health Science Center, School of Rural Public Health, Texas A&M System, September 2004 – August-2006.
Lecturer, Health Science Center, School of Rural Public Health, Texas A&M University System, September 2001 – August 2004.
TEES Associate Research Scientist, Department of Civil Engineering, Texas A&M University, August 1998 – August 2002.
Senior Project Manager, TDI-BI. July 1996 -present.
TEES Assistant Research Scientist, Department of Civil Engineering, Texas A&M University, January 1996 – August 1998.
Manager, Mass Spectrometry Group, Geochemical and Environmental Research Group, Texas A&M University, September 1993 - January 1996.
Assistant Research Scientist, Geochemical and Environmental Research Group, Texas A&M University, September 1989 - January 1996.
Post-Doctoral Research Associate, Geochemical and Environmental Research Group, Texas A&M University, June 1988 - August 1989.
Research Assistant, Department of Oceanography, Texas A&M University, November 1984 - May 1988.

Selected Professional Activities/Awards

Session Co-Chairperson: Geochemistry Session on Quantitative Determinations of Biological Markers, ACS National Meeting 1994.
Outstanding Graduate Student Award - Division of Environmental Chemistry, American Chemical Society 1988.
Organic Geochemist, Ocean Drilling Project, Leg 104, 1985.
Organic Geochemist, Deep Sea Drilling Project, Leg 84, 1982.

Selected Publications

- Naspinski, C, R. Lingenfelter, L. Cizmas, Z. Naufal, L.Y. He, A. Islamzadeh, Z. Li, Z. Li, T.J. McDonald, and K.C. Donnelly. 2008. A comparison of concentration of polycyclic aromatic compounds detected in dust samples from various regions of the world. *Env. Inter.* (34) 988-993.
- Bruce, E.D., R.L. Autenrieth, R. Burghardt, K.C. Donnelly, and T.J. McDonald. 2008. Using quantitative structure-activity relationships (QSAR) to predict toxic endpoints for polycyclic aromatic hydrocarbons (PAH). *J Toxicol Environ Health A*. 2008; 71(16):1073-84.
- Barbee, G.C., J. Barich, J.W. Bickham, C.W. Matson, C.J. Hintze, R.L. Autenrieth, G.D. Zhou, T.J. McDonald, L. Cizmas, and K.C. Donnelly. 2008. In Situ biomonitoring of PAH-contaminated sediments using juvenile coho salmon (*Oncorhynchus kisutch*). *Ecotoxicology and Environmental Safety*, Oct; 71(2): 454-464.
- Desai, A.M., R.L. Autenrieth, P. Dimitriou-Christidis, and T.J. McDonald, 2008. Biodegradation kinetics of select polycyclic aromatic hydrocarbon (PAH) mixtures by *Sphingomonas paucimobilis* EPA505. *Biodegradation*. 19(2):223-33
- Naufal, Z., G.D. Zhou, T.J. McDonald, L. Zi, L. Zi, and K.C. Donnelly. 2007. Genotoxicity of organic extracts of house dust from Shanxi, China. *J. Toxic. Env. Health. Part A*. 70(24) 2080-2088.
- Dimitriou-Christidis, P., R.L. Autenrieth, T.J. McDonald, and A.M. Desai, A.M., Measurement of biodegradability parameters for single unsubstituted and methylated polycyclic aromatic hydrocarbons in liquid bacterial suspensions. *Biotechnol Bioeng*. 2007 Jul 1;97 (4):922-32.
- Bruce, E.D., A.A. Abusalih, T.J. McDonald, and R.L. Autenrieth. 2007. Comparing deterministic and probabilistic risk assessments for sites contaminated by polycyclic aromatic hydrocarbons (PAHs). *Journal of Environmental Science and Health A*. 42(6): 697-706.
- Nwaneshiudu, O.C., R.L. Autenrieth, T.J. McDonald, K.D. Donnelly, E.D. Degollado, and A.A. Abusalih. 2007. Risk of polycyclic aromatic hydrocarbon (PAH) exposure from ingested food: the Azerbaijan case study. *Journal of Environmental Science and Health B*. 42(6): 697-706.
- Matson, C, M. Lambert, T. McDonald, R. Autenrieth, K.C. Donnelly, Islamzadeh, A, Politov, D, and Bickham, J. 2006. Evolutionary Toxicology: Population-Level Effects of Chronic Contaminant Exposure on the Marsh Frogs (*Rana ridibunda*) of Azerbaijan. *Environmental Health Perspective*. 114(4): 547-552.
- Hokanson, R, W. Hanneman, M. Hennessey, K. C. Donnelly, T. J. McDonald, R. Chowdhary, and D.L. Busbee. 2006. DEHP, bis(2)-ethylhexyl phthalate, alters gene expression in human cells: possible correlation with initiation of fetal developmental abnormalities. *Human Exposure Toxicology*. 25 (12) 687-695.
- Matson, C.W., G. Palatnikov, A. Islamzadeh, T.J. McDonald, R.L. Autenrieth, K.C. Donnelly, and J. W. Bickham. 2005. Chromosomal Damage in two species of aquatic turtles (*Emys orbicularis* and *Mauremys caspica*) inhabiting contaminated sites in Azerbaijan. *Ecotoxicology*, 513-525.
- Ottinger, S. Barhoumi, R., McKenzie, K.S., McDonald, T., Burghardt, R, Huebner, H.J., and Phillips, T.D. 2005. FIA/MS analysis of temporally ozonated benzo(a)pyrene and pyrene and their reaction products: Inhibition of gap junction-mediated intercellular communication. *Chemosphere Vol. 60*, 1025-1033.

- Wiles, M.C, Huebner, H.J., McDonald, T.J. Donnelly, K.C. and Phillips, T.D. 2005. Matrix-immobilized organoclay for the sorption of polycyclic aromatic hydrocarbons and pentachlorophenol from groundwater. *Chemosphere* Vol. 59. 1455-1464.
- Matson, C.W., G. M. Palatnikov, T.J. McDonald, R.L. Autenrieth, K.C. Donnelly, T.A. Anderson, J.E. Canas, A. Islamzadeh, and J. W. Bickham. 2005. Patterns of genotoxicity and contaminant exposure: Evidence of genomic instability in the marsh frog (*Rana Ridibunda*) of Sumgayit, Azerbaijan. *Env Toxicology and Chemistry*, Vol. 24(8) 2055-2064.
- Fuller, C., J. Bonner, C. Page, A. Ernest, T. McDonald, and S. McDonald, 2004. Comparative toxicity of oil, dispersant, and oil plus dispersant to several marine species. *Environmental Toxicology and Chemistry*. Vol. 23(12) 2941-2949.
- Cizmas, L, T.J. McDonald, T.D. Phillips, A. M. Gillispie, R.A. Lingefelter, L.F. Kubena, T.D. Phillips, and K.C. Donnelly. 2004. Toxicity characterization of complex mixtures using biological and chemical analysis in preparation for assessment of mixture similarity. *Env. Sci. and Tech*, Vol. 38, 5127-5133.
- Reeves, W.R., T.J. McDonald, L. Cizmas, and K.C. Donnelly. 2004. Partitoning and desorption behavior of polycyclic aromatic hydrocarbons from disparate sources. *Science of the Total Env.*, Vol. 332, 183-192.
- Norman, R. S., P. Moeller, T.J. McDonald, and P.J. Morris. 2004. Effect of pyocyanin on a crude-oil degrading microbial community. *Applied and Env. Microbiology*, Vol. 70:7, 4004-4011.
- Cizmas, L, G. Zhou, S.H. Safe, T.J. McDonald, L. Zhu, and K.C. Donnelly. 2004. Comparative in Vitro and In Vivo genotoxicities, of 7H-benzo(c) fluorene, manufactured gas plant (MGP) residue, and MGP fractions. *Env. and Molecular Mutagenesis*, Vol. 43, 159-168.
- Ake, C.L., M.C. Wiles, H.J. Huebner, T.J. McDonald, D. Cosgriff, M.B. Richardson, K.C. Donnelly and T.D. Phillips. 2003. Porous organoclay composite for the sorption of polycyclic aromatic hydrocarbons and pentachlorophenol from groundwater. *Chemosphere* Vol. 51, 835-844.
- Swartz, C. D., K.C. Donnelly, A. Islamzadeh, G.T. Rowe, W.J. Rogers, G.M. Palatnikov, A.A. Mekhtiev, R. Kasimov, T.J. McDonald, J.K. Wickliffe, B.J. Presley, and J.W. Bickham. 2003. Chemical contaminants and their effects in fish and wildlife from the industrial zone of Sumgayit, Republic of Azerbaijan. *Ecotoxicology*, Vol. 12, 509-521.
- Cizmas, L, R. Barhoumi, R.C. Burghardt, W.R. Reeves, L. He, T.J. McDonald, and K.C. Donnelly, 2003. A comparison of two methods for fractionating complex mixtures in preparation for toxicity analysis. *J. Toxicology and Environmental Health, Part A*, Vol. 66, 1351-1370.
- Mills, M.A., J.S Bonner, T.J. McDonald, C.A. Page, and, R.L. Autenrieth. 2003. "Evaluation of Intrinsic Remediation of a Petroleum-Impacted Wetland. *Marine Pollution Bulletin*, Vol. 46, 887-899.
- Dimitriou-Christidis, P., B. C. Harris, T. J. McDonald, E. Reese, and R. L. Autenrieth, 2003. Estimation of selected physicochemical properties for methylated naphthalene compounds, *Chemosphere*, Vol. 52, Issue 5, 869-881.

Frontera-Suau, R. F.D. Bost, T.J. McDonald, and P.J. Morris, 2002. Aerobic biodegradation of hopanes and other biomarkers by crude oil-degrading enrichment cultures. *Environmental Science and Technology*, Vol. 36 4585-4592.

Page, C. A., J.S. Bonner, T.J. McDonald, and R.L. Autenrieth. 2002. Behavior of a chemically dispersed oil in a wetland environment. *Water Research*, Vol. 36 (15) 3821-3833.

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Simon, M. A, J.S. Bonner, T.J. McDonald, and R.L. Autenrieth. 1999. Bioaugmentation for the enhanced bioremediation of petroleum in a wetland. *Polycyclic Aromatic Compounds* 14&15 231-239.

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Randerath, K., E. Randerath, G.D. Zhou, N. Supongpong, L.-Y. He, T.J. McDonald, and K.C. Donnelly. 1999. Genotoxicity of complex PAH mixtures recovered from contaminated lake sediments as assessed by three different methods. *Environ. Molec. Mutag.* 33:303-312.

Jackson, T.J., T.L. Wade, J.L. Sericano, J.M. Brooks, J.M. Wong, B. Garcia-Romero, and T.J. McDonald (1998). Galveston Bay: Temporal changes in the concentrations of trace organic contaminants in National Status and Trends Oysters (1986-1994). *Estuaries*, 21 718-730.

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- Requejo, A.G., Sassen, R., McDonald, T.J., Denoux, G.J., Kennicutt II, M.C., and Brooks J.M. (1996). Polynuclear aromatic hydrocarbons (PAH) as indicators of the source and maturity of marine crude oils. *Organic Geochemistry* 24: 1017-1033.
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- Kennicutt II, M.C., McDonald, T.J., Comet, P.A., Denoux, G.J., and Brooks, J.M. (1992). The origins of petroleum in the northern Gulf of Mexico. *Geochim. Cosmo. Acta.*, 56: 1259-1280.
- Kennicutt, M.C. II, Brooks, J.M., and McDonald, T.J. (1991). Origins of hydrocarbons in Bering Sea sediments: I. Aliphatic hydrocarbons and fluorescence. *Organic Geochemistry*, 17(1): 75-83.
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- McDonald, T.J., Kennicutt II, M.C. and Brooks, J.M. (1988). Volatile organic compounds at a coastal Gulf of Mexico site. *Chemosphere.* 17(1): 123-136.
- Brooks, J.M., Cox, H.B., Bryant, W.R., Kennicutt II, M.C., Mann, R.G. and McDonald, T.J. (1986). Association of Gas Hydrates and Oil Seepage in the Gulf of Mexico. *Organic Geochemistry*, Vol. 10, pp. 221-234.

Kennicutt II, M.C., Brooks, J.M., Bidigare, R. R., Fay, R.R., Wade, T.L. and McDonald, T.J. (1985). Vent type taxa in a hydrocarbon seep area on the Louisiana Slope. *Nature*, Vol. 317: 351-353.

McDonald, T. J., Brooks, J.M., and Kennicutt II, M.C. (1984). Release of volatile liquid hydrocarbons from spilled petroleum. *Bull. Environmental Contamination and Toxicology*, 32: 621-628.

Kennicutt II, M. C., Brooks, J.M., and McDonald, T.J. (1984). Volatile organic inputs from an ocean outfall near Barceloneta, Puerto Rico. *Chemosphere*, 13: 535-548.

Brooks, J. M., Kennicutt II, M.C., Fay, R.R., McDonald, T.J. and Sassen, R. (1984). Thermogenic gas hydrates in the Gulf of Mexico. *Science*, 225: 409-411.

Aubouin, J., von Huene, R., Baltuck, M., Arnott, R., Bourgois, J., Filewicz, M., Kvenvolden, K., Leinert, B., McDonald, T., McDougall, K., Ogawa, Y., Taylor, E., Winsborough, B. (1982). Leg 84 of the Deep-Sea Drilling Project - Subduction without accretion: Middle America Trench off Guatemala. *Nature*, 297: 458-460.

BOOK CHAPTERS:

McDonald, T.J., Kennicutt II, M.C., Brooks, J.M., and Fay, R.R. (1993). Volatile organic compounds associated with petroleum seepage in surficial Gulf of Mexico Sediments. In: J. Whelan and J. W. Farrington Eds. *Organic Matter: Productivity, Accumulation, and Preservation in Recent and Ancient Sediments*. Columbia University Press, New York pp. 433-452.

McDonald, T.J., Kennicutt II, M.C. Rafalska, J.K. and Fox, R.G. (1991). Source and maturity of organic matter in selected Prydz Bay sediments Site 739C and Site 741A, ODP Leg 119. In: Barron, J. Larsen, B., et al., *Proc. ODP, Sci Results*, 119: College Station, TX (Ocean Drilling Program) 407-416.

McDonald, S.J., Wade, T.L. Brooks, J.M. and McDonald, T.J. (1991). Assessing the exposure of fish to a petroleum spill in Galveston Bay, Texas. In: *Water Pollution: Modeling, Measuring, and Prediction*. Worbel, L.C. and Brebbia, C.A. (Eds.) Computational Mechanics Publications, Southampton and Elsevier Applied Science, London, pp. 707-718.

McDonald, T.J., Kennicutt II, M.C., Brooks, J.M., and Kvenvolden, K.A. (1989). Organic matter at Sites 642-644, Ocean Drilling Program, Leg 104. In: Eldholm, O., Thiede, J., Taylor, E. et al., *Proc. ODP, Scientific Results*, 104: College Station, TX (Ocean Drilling Program), 309-318.

Kvenvolden, K.A., McDonald, T.J., Pflaum, R.C. and Brooks, J.M. (1989). Hydrocarbon gases of the Voring Plateau, Norwegian Sea. In: Eldholm, O., Thiede, J., Taylor, E. et al., *Proc. ODP, Scientific Results*, 104: College Station, TX (Ocean Drilling Program), 319-328.

Kvenvolden, K.A. and McDonald, T.J. (1989). Organic geochemistry on Leg 104. In: Eldholm, O., Thiede, J., Taylor, E. et al., *Proc. ODP, Scientific Results*, 104: College Station, TX (Ocean Drilling Program), 291-308.

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Jeffrey, A.W.A., Pflaum, R.C., McDonald, T.J., Brooks, J.M., and Kvenvolden, K.A. (1985). Isotopic analysis of core gases at Sites 565-570, Deep Sea Drilling Project Leg 84. In: Initial Reports of the Deep Sea Drilling Project, Vol. 84, pp. 719-726 (R. von Huene, J. Aubouin, et al., editors), U.S. Govt. Printing Office, Washington.

Kennicutt, M.C. II, Brooks, J.M., McDonald, T.J., and Kvenvolden, K.A. (1985). Nonvolatile organic matter at Sites 565-570, Deep Sea Drilling Project Leg 84. In: Initial Reports of the Deep Sea Drilling Project, Vol. 84, pp. 705-717, (R. von Huene, J. Aubouin, et al., editors), U.S. Govt. Printing Office, Washington.

McDonald, T. J., Brooks, J.M. and Kennicutt II, M.C. (1984). The effects of dispersants on incorporation of volatile liquid hydrocarbon into the water column. In: T. E. Allen (Ed.) Oil Spill Dispersants: Research, Experience, and Recommendations. STP 840 American Society for Testing and Materials, Philadelphia., pp. 203-223.