

KEWEI YU, PhD

Department of Biological and Environmental Sciences

McCall Hall Room 210-C

Troy University, Troy, AL 36082

OBJECTIVE

To be an educator for next generation, to conduct integrated research, and to provide services

EDUCATION

Ph.D in Biogeochemistry 2000

Department of Oceanography and Coastal Sciences, Louisiana State University, USA

M.S. in Microbial Ecology 1991

Graduate School and Institute of Applied Ecology, Chinese Academy of Sciences, China

B.S. in Biochemistry 1988

Department of Chemistry and Department of Molecular Biology, Jilin University, China

EMPLOYMENT

- | | | |
|-----------------------|----------------|-------------------------------------|
| ▪ Assistant Professor | 2009 - present | Troy University, USA |
| ▪ Senior Researcher | 2001 - 2008 | Louisiana State University, USA |
| ▪ Research Assistant | 1998 - 2000 | Louisiana State University, USA |
| ▪ Assistant Professor | 1994 - 1998 | Institute of Applied Ecology, China |
| ▪ Visiting Scientist | 1994 and 1996 | University of Copenhagen, Denmark |
| ▪ Research Associate | 1991 - 1994 | Institute of Applied Ecology, China |

COURSES AT TROY UNIVERSITY

- Principles of Environmental Sciences (BIO 2202) and Lab (BIO L202)
- Environmental Pollution and Control (BIO 3328) and Lab (BIO L328)
- Pollution Science (BIO/EBS 6630) and Lab (BIO/EBS L630)
- Seminars in Biological and Environmental Sciences (BIO/EBS 6617/6618)
- Principles of Biology (BIO 1100) and Lab (BIO L100) - online

HONORS AND AWARDS

- Chancellor Award of Distinction for Sponsored Program Success, Troy University, 2011

- Adjunct research professor at Institute of Applied Ecology, Chinese Academy of Sciences, 1998 to present
- Fellowship Award Danish International Development Agency (DANIDA), Denmark, 1996

PROFESSIONAL MEMBERSHIPS

- Member of Soil Science Society of America (1998 - present)
- Member of Society of Wetland Scientists (2003 - present)

PROFESSIONAL SERVICES

- Editorial Board Member (2003 - present) of *Archives of Agronomy and Soil Science* (Science Citation Index Journal, Taylor & Francis Group)
- Co-editor of a special issue of *Archives of Agronomy and Soil Science* from the presentations in the 10th International Symposium on Wetland Biogeochemistry (2007) Annapolis, Maryland, USA
- Expert Review of the 2013 Wetlands Supplement, the Second Order Draft (SOD) of the 2013 Supplement to the 2006 IPCC (Intergovernmental Panel on Climate Change) Guidelines for National Greenhouse Gas Inventories: Wetlands
- Proposal review for
United States Department of Agriculture (USDA)
Louisiana Board of Regents
- Manuscript review for 20 + academic journals
Acta Physiologiae Plantarum; Advances in Atmospheric Sciences; Archives of Agronomy and Soil Science; Australian Journal of Soil Research; Biology and Fertility of Soils; Chemosphere; Environmental Pollution; Environmental Science and Pollution Research; European Journal of Soil Sciences; Journal of Environmental Quality; Journal of Hazardous Materials; Korean Society of Soil Science and Fertilizer; Atmospheric Environment; Ecological Modeling; Global Change Biology; Water, Air, and Soil Pollution; Wetlands; Soil and Sediment contamination; Soil Science and Plant Nutrition; Soil Science Society of America Journal; Toxicological and Environmental Chemistry; Journal of Environmental Science and Health; Journal of Freshwater Ecology; Petroleum Science; Agriculture, Ecosystems and Environment; Analytical Letters; Environmental Technology

PUBLICATIONS (Science Citation Index, h index = 11)

Referred journal articles

- 1) Tao R and Yu KW, 2013. Nitrate addition has minimal effect on anaerobic biodegradation of benzene in coastal saline (salt), brackish and freshwater marsh sediments. *Wetlands*, 33:759-767.

- 2) **Yu KW** and DeLanue RD, 2012. A comparison analysis of edge-of-field runoff from two sugarcane fields. *Archives of Agronomy and Soil Science* 58: 51-59.
- 3) Yu JO, Tao R, and **Yu KW**, 2012. Anaerobic biodegradation of benzene in salt marsh sediment of the Louisiana Gulf coast. *Ecological Engineering*, 40: 6-10.
- 4) **Yu KW** and Rinklebe J, 2011. Advancement in soil microcosm apparatus for biogeochemical research. *Ecological Engineering* 37: 2071-2075.
- 5) **Yu KW**, Seo DC and DeLanue RD, 2010. Incomplete acetylene inhibition of nitrous oxide reduction in potential denitrification assay as revealed by using ¹⁵N-nitrate tracer. *Communications in Soil Science and Plant Analysis* 41: 2201–2210.
- 6) Koh HS, Ochs CA and **Yu KW**, 2009. Hydrologic gradient and vegetation controls on CH₄ and CO₂ fluxes in a spring-fed forested wetland. *Hydrobiologia* 630: 271–286.
- 7) Huang B, **Yu KW** and Gambrell RP, 2009. Effects of ferric iron reduction and regeneration on nitrous oxide and methane emissions in a rice soil. *Chemosphere* 74: 481-486.
- 8) **Yu KW**, DeLanue RD, Devai I, Tao R and Jugsujinda A, 2008. Total and methyl mercury in wetland sediments of Lake Pontchartrain Basin (USA). *Journal of Environmental Science and Health Part A –Toxic/Hazardous Substances and Environmental Engineering* 43(14): 1657 – 1662.
- 9) Seo DC, **Yu KW** and DeLanue RD, 2008. Comparison of monometal and multimetal adsorption in Mississippi River Alluvial wetland sediment: batch and column experiments. *Chemosphere* 73: 1757–1764.
- 10) **Yu KW**, DeLanue RD, Tao R and Beine RL, 2008. Nonpoint source of nutrients and herbicides associated with sugarcane production and its impact on water quality. *Journal of Environmental Quality* 37: 2275-2283.
- 11) **Yu KW**, Struwe S, Kjølner A and Chen GX, 2008. Nitrous oxide production and consumption potential in an agricultural and a forest soil. *Communications in Soil Science and Plant Analysis* 39: 2205-2220.
- 12) Seo DC, **Yu KW** and DeLanue RD, 2008. Influence of salinity level on sediment denitrification in a Louisiana estuary receiving diverted Mississippi River water. *Archives of Agronomy and Soil Science* 54: 249-257.
- 13) **Yu KW**, Faulkner SP and Baldwin MJ, 2008. Effect of hydrological conditions on nitrous oxide, methane, and carbon dioxide dynamics in a bottomland hardwood forest and its implication on soil carbon sequestration. *Global Change Biology* 14: 798-812.
- 14) **Yu KW**, Struwe S, Kjølner A and Chen GX, 2008. Denitrification rate determined by nitrate disappearance is higher than determined by nitrous oxide production with acetylene blockage. *Ecological Engineering* 32: 90-96.
- 15) **Yu KW**, Böhme F, Rinklebe J, Neue HU and DeLaune RD, 2007. Major biogeochemical processes in rice soils – a microcosm incubation from reducing to oxidizing conditions. *Soil Science Society of America Journal* 71: 1406-1417.
- 16) **Yu KW**, Chen GX and Xu H, 2006. Rice yield reduction by chamber enclosure: a possible effect on enhancing methane production. *Biology and Fertility of Soils* 43: 257-261.

- 17) **Yu KW**, DeLanue RD and Boeckx P, 2006. Direct measurement of denitrification activity in a Gulf coast freshwater marsh receiving diverted Mississippi River water. *Chemosphere* 65 (11): 2449-2455.
- 18) Kravchenko IK and **Yu KW**, 2006. Relationship between major soil properties and culturable microorganisms affecting CH₄ and N₂O dynamics in rice soils. *Archives of Agronomy and Soil Science* 52 (6): 607-615.
- 19) **Yu KW** and DeLaune RD, 2006. A modified soil diffusion chamber for gas profile analysis. *Soil Science Society of America Journal* 70: 1237-1241.
- 20) **Yu KW**, Faulkner SP and Tao R, 2006. Non-continuous development of reducing conditions in wetland soils. *Communications in Soil Science and Plant Analysis* 37: 1775–1781.
- 21) **Yu KW**, Faulkner SP and Patrick WH, 2006. Redox potential characterization and soil greenhouse gas concentration across a hydrological gradient in a Gulf coast forest. *Chemosphere* 62 (6): 905-914.
- 22) **Yu KW** and Patrick WH, 2004. Redox window with minimum global warming potential contribution from rice soils. *Soil Science Society of America Journal* 68: 2086-2091 (featured in SSSAJ cover and USDA Cover Story).
- 23) **Yu KW**, Chen GX and Patrick WH, 2004. Reduction of global warming potential contribution from a rice field by irrigation, organic matter, and fertilizer management. *Global Biogeochemical Cycles* 18 (3): Art. No. GB3018.
- 24) **Yu KW** and Patrick WH, 2003. Redox range with minimum nitrous oxide and methane production in a rice soil under different pH. *Soil Science Society of America Journal* 67: 1952-1958.
- 25) Chen GX, Xu H, Zhang Y, Zhang XJ, Li YY, Shi RJ, **Yu KW** and Zhang XD, 2003. Plant: a potential source of the atmospheric N₂O. *Quaternary Sciences* 23(5): 504-511 (in Chinese with English abstract).
- 26) **Yu KW**, Wang ZP, Vermoesen A, Patrick WH and Van Cleemput O, 2001. Nitrous oxide and methane emissions from different soil suspensions: effect of soil redox status. *Biology and Fertility of Soils* 34 (1): 25-30.
- 27) **Yu KW**, Chen GX, Struwe S and Kjølner A, 2000. Production and reduction of nitrous oxide in agricultural and forest soils. *Chinese Journal of Applied Ecology* 11(3): 385-389 (in English).
- 28) Chen GX, **Yu KW**, Liao LP and Xu GS, 2000. Effect of human activities on forest ecosystems: N cycle and soil fertility. *Nutrient Cycling in Agroecosystems* 57: 47-54.
- 29) Chen GX, Huang B, Xu H, Zhang Y, Huang GH, **Yu KW**, Du R, Han SJ and Van Cleemput O, 2000. Nitrous oxide emission from terrestrial ecosystems in China. *Chemosphere-Global Change Science* 2: 373-378.
- 30) **Yu KW**, Chen GX, Struwe S and Kjølner A, 1998. Dynamics of denitrification potential in a Danish forest soil. *Chinese Journal of Applied Ecology* 9 (2): 163-167 (in Chinese with English abstract).

- 31) **Yu KW**, Huang B, Chen GX and Wu J, 1997. Field measurement of N₂O flux from soybean plant and effect of light on It. *Chinese Journal of Applied Ecology* 8 (2): 171-176 (in Chinese with English abstract).
- 32) **Yu KW**, Wang ZP and Chen GX, 1997. Nitrous oxide and methane transport through rice plants. *Biology and Fertility of Soils* 24: 341-343.
- 33) Chen GX, Huang GH, Huang B, **Yu KW**, Wu J and Xu H, 1997. Nitrous oxide and methane emissions from soil-plant systems. *Nutrient Cycling in Agroecosystems* 49: 41-45.
- 34) **Yu KW** and Chen GX, et al., 1995. Role of several upland crops in N₂O emission from farmland and its response to environmental factors. *Chinese Journal of Applied Ecology* 6 (4): 387-391 (in Chinese with English abstract).
- 35) Huang GH, Chen GX, Huang B, Wu J, **Yu KW** and Lu CA, 1995. N₂O and CH₄ fluxes from typical upland fields in Northeast China. *Chinese Journal of Applied Ecology* 6 (4): 383-386 (in Chinese with English abstract).
- 36) Chen GX, Huang GH, Huang B, Wu J and **Yu KW**, et al., 1995. CH₄ and N₂O emission from a rice field and effect of Azolla and fertilization on them. *Chinese Journal of Applied Ecology* 6(4): 378-382 (in Chinese with English abstract).
- 37) Huang GH, Chen GX, Xu H, Wu J, Wang YJ and **Yu KW**, 1992. Investigation on emission of nitrous oxide by aseptic soybean plant. *Acta Botanica Sinica*, 34 (11): 835-839 (in Chinese with English abstract).
- 38) Chen GX, Shang SH and **Yu KW**, et al., 1990. Investigation on the emission of N₂O by plant. *Chinese Journal of Applied Ecology* 1(1): 94-96 (in Chinese with English abstract).

Referred book chapters

- 1) **Yu KW** and DeLaune RD, 2013 (in press). A brief history on soil microcosms as an experimental apparatus for biogeochemical research, in: *Microcosms: Ecology, Biological Implications and Environmental Impact* (Ed Harris CC), Nova Science Publishers, Inc. (Invited)
- 2) **Yu KW** and Rinklebe J, 2013 (in press). Soil redox potential and pH controllers, in: *Methods in Biogeochemistry of Wetlands* (Eds DeLaune RD, Reddy KR, Richardson CJ, and Megonigal JP), Chapter 7, Soil Science Society of America (invited)
- 3) **Yu KW**, Hiscox A, and DeLaune RD, 2013 (in press). Greenhouse gas emission by static chamber and eddy flux method, in: *Methods in Biogeochemistry of Wetlands* (Eds DeLaune RD, Reddy KR, Richardson CJ, and Megonigal JP), Chapter 22, Soil Science Society of America (invited)
- 4) **Yu KW**, 2011. Redox potential control on cumulative global warming potentials from irrigated rice fields, In *Understanding Greenhouse Gas Emissions from Agricultural Management* (Eds. Lei Guo, Amrith Gunasekara and Laura McConnell), Chapter 7, pages 121-134, ACS Symposium Series; American Chemical Society (Invited).

- 5) **Yu KW** and Chen GX, 2009. Nitrous oxide emissions from terrestrial plants: observations, mechanisms and implications, in: Nitrous Oxide Emissions Research Progress (Eds Sheldon AI, Barnhart EP), pages 85-104, Nova Science Publishers, Inc. (Invited)
- 6) **Yu KW**, Huang B and Chen GX, et al., 1996. Estimation of total emission and trend prediction of major sources of nitrous oxide in China, In: Concentration and Emission Monitoring of Greenhouse Gases and Their Relative Processes (Wang Gengchen and Wen Yupu, eds), China Environmental Science Press 295-302 (in Chinese with English abstract).
- 7) **Yu KW**, Chen GX, Yang SH, Wu J, Huang B, Huang GH and Xu H, 1996. Role of plants in nitrous oxide emission from agroecosystem and its response to environmental effectors. In: Global Change and China's Living Environment in Future (Fu Chongbin and Yan Zhongwei, eds), Meteorological Press 116-121 (in Chinese with English abstract).
- 8) Huang GH, Chen GX, Huang B, Wu J, **Yu KW** and Lu CA, 1996. Measurement of N₂O flux from upland in Northeastern China and estimation of total emission, In: Concentration and Emission Monitoring of Greenhouse Gases and Their Relative Processes (Wang Gengchen and Wen Yupu, eds), China Environmental Science Press 351-357 (in Chinese with English abstract).
- 9) Chen GX, Huang GH, Huang B, Wu J, **Yu KW**, Xu H and Xue XH, 1996. Nitrous oxide and methane emissions from a rice field and effects of azolla and fertilization, In: Global Change and China's Living Environment in Future (Fu Chongbin and Yan Zhongwei, eds), Meteorological Press, 109-115 (in Chinese with English abstract).
- 10) Chen GX, Huang B, Huang GH, Wu J, **Yu KW**, Xu H and Xue XH, 1996. Measurement of N₂O and CH₄ flux from rice field and estimation of total emission, In: Concentration and Emission Monitoring of Greenhouse Gases and Their Relative Processes (Wang Gengchen and Wen Yupu, eds), China Environmental Science Press 343-350 (in Chinese with English abstract).
- 11) Chen GX, Huang GH, Huang B, **Yu KW**, Wu J and Xu H, 1995. Biogenic nitrous oxide emissions, In: Ye Duzheng, Lin Hai et al., (eds.) China Contribution to Global Change Studies, Science Press (Beijing) 161-163.
- 12) Chen GX and **Yu KW**, et al., 1995. The measuring methods for N₂O emission from terrestrial ecosystem, In: Ding Yihui and Gao Suohua (eds.) Effect of Trace Gases on Agriculture and Ecosystem, Chinese Science and Technology Press (Beijing), 79-90.

Conference presentations with refereed proceedings

- 1) **Yu KW**, Chen GX and Patrick WH, 2005. Soil redox window with minimum nitrous oxide and methane production: its application in rice field. Third International Nitrogen Conference, October 12-16 2004, Nanjing, China, 694-700 (oral presentation).
- 2) Chen GX, Xu H, Huang B, Zhang Y, Huang G, **Yu KW**, Du R. and Wu J, 1999. N₂O emissions from terrestrial ecosystems in China. International Workshop on the Atmospheric N₂O Budget: an analysis of the state of our understanding of sources and sinks of atmospheric N₂O, March 23-25, Tsukuba, Japan (oral presentation).

- 3) Chen GX, Huang GH, Huang B, **Yu KW**, Xu H, Du R and Wu J, 1996. N₂O and CH₄ emissions from some typical terrestrial ecosystems in China, In: Proceedings of Japan-China Symposium on Environmental Science, Nov. 22-24, Chiba, Japan, 435-440 (oral presentation).
- 4) **Yu KW**, Struwe S and Kjølner A, 1995. Denitrification and nitrous oxide reduction in slurry experiments with agricultural and beech forest soils. In: Proceedings of the China-EC Workshop on Greenhouse Gases: N₂O and CH₄ Productions and Emissions from Agricultural and Forest Ecosystems. Sep. 11-20 1994, Shenyang, China 43-52 (oral presentation).
- 5) **Yu KW**, Chen GX, Yang SH and Wang ZP, 1995. Role of plant in nitrous oxide emission from soil-plant system and its response to light. In: Proceedings of the China-EC Workshop on Greenhouse Gases: N₂O and CH₄ Productions and Emissions from Agricultural and Forest Ecosystems. Sep. 11-20 1994, Shenyang, China, 149-158 (oral presentation).
- 6) Chen GX, Huang GH, Huang B, **Yu KW**, Wu J and Xu H, 1995. Nitrous oxide and methane emission from soil-plant systems. In: Proceedings of the China-EC Workshop on Greenhouse Gases: N₂O and CH₄ Productions and Emissions from Agricultural and Forest Ecosystems. Sep. 11-20 1994. Shenyang China, 17-24 (oral presentation).
- 7) Chen GX, Huang GH, Shang SH, Li N, Wu J, **Yu KW**, Xu H, Wang YJ and Li L, 1993. Measurement of N₂O emission from soils, plants and soil-plant systems. In: Contribution to Global Change: Biosphere-Atmosphere Interactions (A. Ghazi ed.), Luxembourg, Proceedings of the CEC-China Workshop, Oct 26-29 1992, Beijing, China, 109-114 (oral presentation).
- 8) Chen GX, Shang SH and **Yu KW**, et al., 1990. Study on the release of N₂O from plant. In: China National Symposium on Geological and Geochemical Records and Environmental Changes, Guizhou Scientific and Technical Publishers, China, 199-202 (oral presentation).

PATENTS

- 1) **Yu KW**, Chen GX and Xu H. Separate static chambers for study of gas exchange in soil-plant systems, January, 2007 (#200520146054.5, China).
- 2) Xu H, Chen GX, **Yu KW**, Zhang Y, Jing RY and Ni ZL. A new back flow system and its control software in a gas chromatograph with two sample inlets, June, 2005 (#200410050256.X, China).
- 3) Xu H, Shi YJ, Lang XM, Chen GX, Zhang Y and **Yu KW**. Apparatus and application to improve the efficiency in an anaerobic active sludge by using hydrogen produced from cathode, June, 2005 (#200410021587.0, China).
- 4) Huang GH, Chen GX, Wu J, Hou AX, Huang B, **Yu KW** and Xu H. A method to measure greenhouse gas flux from agricultural field, December, 1998 (#97111901.5, China).