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EDUCATION

SUNY at Stony Brook	Biology	B.S. 1973
The University of Texas (Austin)	Microbiology	Ph.D. 1978

APPOINTMENTS

Head, 2006-present. Dept. Microbiology, University of Georgia
Professor. 1993-present. Dept. Microbiology, University of Georgia
Associate Professor. 1988-1993. Dept. Microbiology, University of Georgia
Assistant Professor. 1982-1988. Dept. Microbiology, University of Georgia

SELECT PUBLICATIONS

Keswani, J., and W.B. Whitman (2001) Relationships of 16S rRNA sequence similarity to DNA hybridization in prokaryotes. *Int. J. Syst. Evol. Microbiol.* 51:667-678.

Hedderich, R., and W.B. Whitman (2004) Physiology and biochemistry of the methane-producing archaea. *In: The Prokaryotes*, A. Balows, H. G. Trüper, M. Dworkin, W. Harder and K. H. Schleifer (eds.), Springer-Verlag, New York.

Porat, I., B.W. Waters, Q. Teng, and W.B. Whitman (2004) Two biosynthetic pathways for the aromatic amino acids in the archaeon *Methanococcus maripaludis*. *J. Bacteriol.* 186: 4940-4950.

Sauerwald, A., W. Zhu, T.A. Major, H. Roy, S. Palioura, D. Jahn, W.B. Whitman, J.R. Yates 3rd, M. Ibba, and D. Söll (2005) RNA-dependent cysteine biosynthesis in archaea. *Science* 307: 1969-1972.

Kim, W., T.A. Major, and W.B. Whitman (2005) Role of the precorrin 6-X reductase gene in cobamide biosynthesis in *Methanococcus maripaludis*. *Archaea* 1, 375-384.

Porat, I., W. Kim, E.L. Hendrickson, Q. Xia, Y. Zhang, T. Wang, F. Taub, B.C. Moore, I.J. Anderson, M. Hackett, J.A. Leigh, and W.B. Whitman (2006) Disruption of the Ehb hydrogenase operon limits anabolic CO₂ assimilation in the archaeon *Methanococcus maripaludis*. *J. Bacteriol.* 188: 1373-1380.

Yuan, J., S. Palioura, J.C. Salazar, D. Su, P. O'Donoghue, M.J. Hohn, A.M. Cardoso, W.B. Whitman, and D. Söll. 2006. RNA-dependent conversion of phosphoserine forms selenocysteine in eukaryotes and archaea. *Proc. Natl. Acad. Sci. USA* 103:18923-18927.

Hendrickson, E.L., A.K. Haydock, B.C. Moore, W.B. Whitman, and J.A. Leigh. 2007. Functionally distinct genes regulated by hydrogen limitation and growth rate in methanogenic Archaea. *Proc. Natl. Acad. Sci. USA* 104: 8930-8934.

PROFESSIONAL ACTIVITIES

Secretary, ICSB Subcommittee on the taxonomy of methanogens, 1986-2001
Associate Editor, *International Journal of Systematic Bacteriology*, 1995-2001
Associate Editor, *Archaea*, 2002-present
Chair, Division I (General Microbiology), American Soc. for Microbiology 2003
Board, Bergey's Manual Trust, 2006-present
Supervising Editor, Bergey's Manual Trust, 2006-present

HONORS AND AWARDS

Presidential Young Investigator Award, June 1984
Fellow, American Academy of Microbiology
Bergey's Award, 2000
P.R. Edwards Award, Southeastern Branch of the Am. Soc. Microbiol., 2000
Robert G. Eagon Award, Southeastern Branch of the Am. Soc. Microbiol., 2004
Fellow, American Association for the Advancement of Science, 2006

RESEARCH INTERESTS

My laboratory has studied the methane-producing bacteria since I came to Georgia in 1982. In the last 25 years, our research has been funded by the National Science Foundation and the US Department of Energy, and we have published more than 50 research papers and 20 reviews on these microorganisms. At one time or another, we have studied a wide range of topics concerning their nutrition, physiology, biochemistry, genetics and systematics. Currently, we are using methanogens to develop methods for biological H₂ production, to selectively remove inhibitors from the cellulosic hydrolysates used in the ethanol fermentation, and to improve the genetic methods for manipulation of its growth characteristics. As energy becomes more expensive, methanogens have great potential for biotechnological applications as well as waste treatment. In the biofuels arena, it has immediate application in the coproduction of methane with ethanol from biomass. In these processes, 20-30 % of the energy from the biomass might actually be derived from methane.