VITA

Gene F. Parkin, P.E.

Education

B.S.C.E.	University of Iowa, Iowa City, IA; 1970 (with High Distinction)
M.S.C.E.	University of Iowa, Iowa City, IA; 1970
Ph.D.	Stanford University, Stanford, CA; 1978

Professional Appointments

9/77-12/77:	Acting Assistant Professor of Civil Engineering, Stanford University, Stanford, CA
3/78-9/81:	Assistant Professor of Civil Engineering, Drexel University, Philadelphia, PA
9/81-7/86:	Associate Professor of Civil Engineering, Drexel University, Philadelphia, PA
7/86-9/88:	Associate Professor of Civil and Environmental Engineering, The University of Iowa, Iowa City, IA
9/88-present:	Professor of Civil and Environmental Engineering, The University of Iowa
9/88-present	Director, Center for Health Effects of Environmental Contamination, The University of Iowa
7/90-7/95	Chairman, Dept. of Civil and Environmental Engineering, The University of Iowa
7/94-present	Professor of Occupational and Environmental Health, The University of Iowa

Professional Societies

Member, Water Environment Federation and Iowa Water Environment Association
Member, American Society of Civil Engineers
Member, American Chemical Society
Member, Association of Environmental Engineering and Science Professors

Honors

- J. James R. Croes Medal from American Society of Civil Engineers for outstanding research paper of 1983
- College of Engineering Outstanding Undergraduate Teaching Award (Drexel University - 1984)
- Hancher-Finkbine Medallion for Outstanding Professor at The University of Iowa (1989)
- 1991 Harrison Prescott Eddy Medal from Water Pollution Control Federation for outstanding research paper
- 1995-96 University of Iowa Collegiate Teaching Award
- 1999 State of Iowa Board of Regents Award for Faculty Excellence
- 2003 – named Donald E. Bently Professor of Engineering
- 2010 President and Provost Award for Teaching Excellence
- 2010 Marion L. Huit Award for Faculty Excellence

Selected Publications

1. Parkin, G.F. and Dague, R.R., "Optimal Design of Wastewater Treatment Systems by Enumeration", Jour. Sanitary Eng. Div., ASCE, 98, 833 (1972).
2. Parkin, G.F. and McCarty, P.L., "Characteristics and Removal of Soluble Organic Nitrogen in Treated Effluents", Progress in Water Technology, 12, 435 (1975).
3. Stuckey, D.C., Parkin, G.F., Owen, W.F., and McCarty, P.L., "Comparative Evaluation of Anaerobic Toxicity by Batch and Semi-Continuous Assays," Jour. Water Pollution Control Fed., 52, 720 (1980).
4. Yang, J., Speece, R.E., Parkin, G.F., Gossett, J.M., and Kocher, W.M., "The Response of Methane Fermentation to Cyanide and Chloroform," Progress in Water Technology, 12, 977 (1980).
5. Parkin, G.F. and McCarty, P.L., "Production of Soluble Organic Nitrogen During Activated-Sludge Treatment," Jour. Water Pollution Control Fed., 53, 99 (1981).
6. Parkin, G.F. and McCarty, P.L., "Sources of Soluble Organic Nitrogen in Activated-Sludge Effluents," Jour. Water Pollution Control Fed., 53, 89 (1981).
7. Parkin, G.F. and McCarty, P.L., "A Comparison of the Characteristics of Soluble Organic Nitrogen in Untreated and Activated-Sludge Treated Wastewaters," Water Research, 15, 139 (1981).
8. Parkin, G.F. and Speece, R.E., "Modeling Toxicity in Methane Fermentation Systems," Jour. Env. Eng. Div., ASCE, 108, 515, (1982). *(received J. James R. Croes Medal from ASCE for this paper)*
9. Parkin, G.F., Speece, R.E., Yang, C.H.J., and Kocher, W.M., "The Response of Methane Fermentation Systems to Industrial Toxicants," Jour. Water Pollution Control Fed., 55, 44 (1983).
10. Speece, R.E., Parkin, G.F., and Gallagher, D., "Nickel Stimulation of Anaerobic Digestion," Water Research, 17, 677 (1983).
11. Hergenroeder, R. and Parkin, G.F., "Determination of Kinetic Coefficients for an Acetate Enrichment Culture by the Infinite Dilution Technique," Biotech. and Bioeng., 25, 873 (1983).
12. Parkin, G.F. and Speece, R.E., "Attached versus Suspended Growth Anaerobic Reactors: Response to Toxic Substances," Water Science and Tech., 15, 261 (1983).

13. Parkin, G.F. and Speece, R.E., "Anaerobic Biological Waste Treatment: The Effect of Toxic Substances," Chemical Engineering Progress, 80, 55 (1984).
14. Blum, D.J.W., Hergenroeder, R., Parkin, G.F., and Speece, R.E., "Anaerobic Treatment of Coal Conversion Wastewater Constituents: Biodegradability and Toxicity," Jour. Water Pollution Control Fed., 58, 122 (1986).
15. Speece, R.E., Parkin, G.F., and Bhattacharya, S.K., "Modeling Toxicity Response of Anaerobic Treatment," Water Science and Technology, 18, 27-39 (1986).
16. Parkin, G.F. and Calabria, C.R., "Principles of Bioreclamation of Contaminated Groundwaters and Leachates," in Hazardous and Industrial Solid Waste Testing and Disposal: Vol. 6, ASTM STP 933, pp. 151-173, D. Lorenson et al., Eds., Amer. Soc. for Testing and Materials, Philadelphia, PA (1986).
17. Martin, J.P. and Parkin, G.F., "Land Treatment of Tannery Wastes", Jour. American Leather Chemists, 81, 149-173 (1986).
18. Parkin, G.F. and Owen, W.F., "Fundamentals of Anaerobic Digestion of Wastewater Sludges," Jour. Env. Eng. Div., ASCE, 112, 867-920, (Oct. 1986).
19. Bhattacharya, S.K. and Parkin, G.F., "Nickel in Methane Fermentation Systems: Fate and Effect on Process Kinetics," Proc. International Conf. on Innovative Biological Treatment of Toxic Wastewaters, Scholze, R.J. et al., Eds., U.S.E.P.A., National Science Foundation, Naval Civ. Eng. Lab., U.S. Army CERL, NJIT, pp. 80-99 (1987).
20. Bhattacharya, S.K. and Parkin, G.F., "Fate and Effect of Methylene Chloride and Formaldehyde in Methane Fermentation Systems," Jour. Water Pollution Control Fed., 60, 531-536 (1988).
21. Bhattacharya, S.K., Janga, R.G., Parkin, G.F., and Morand, J.M., "Toxic Effects of Nickel on Anaerobic Treatment," in Heavy Metals in the Hydrological Cycle, M. Astrue and J.N. Lester, Eds., Selper Ltd., London, 1988.
22. Bhattacharya, S.K. and Parkin, G.F., "The Effect of Ammonia on Methane Fermentation Processes," Jour. Water Pollution Control Fed., 61, 55-59 (1989).
23. Parkin, G.F., Lynch, N.A., Kuo, W.C., Van Keuren, E.L., and Bhattacharya, S.K., "Interaction Between Sulfate Reducers and Methanogens Fed Acetate and Propionate," Research Journal Water Pollution Control Federation, 62, 780-788 (1990). *(received Harrison Prescott Eddy Medal from WPCF for this paper)*
24. Parkin, G.F., Sneve, M.A., and Loos, H., "Anaerobic Filter Treatment of Sulfate-Containing Wastewaters," Water Science and Technology, 23, 1283-1291 (1991).
25. Wilber, G.G. and Parkin, G.F., "Transformation of Pesticides in Groundwater under Anaerobic Conditions," in In-Situ and On-Site Bioreclamation, Butterworth Publishers, pp. 385-402 (1991).
26. Hughes, J.B. and Parkin, G.F., "The Effect of Electron Donor on the Transformation of Chlorinated Aliphatics," in In-Situ and On-Site Bioreclamation, Butterworth Publishers, pp. 59-76 (1991).
27. Hughes, J.B. and Parkin, G.F., "The Effect of Mixtures of Xenobiotics and Primary Electron Donor on the Anaerobic Biotransformation of High Concentrations of Chlorinated Aliphatics," Water Science and Technology, 26, pp. 117-126 (1992).
28. Coyle, C.G., Parkin, G.F., and Gibson, D.T., "Aerobic, Phenol-Induced TCE Degradation in Completely Mixed, Continuous-Culture Reactors," Biodegradation, 4, pp. 59-69 (1993).
29. Maillacheruvu, K.Y., Parkin, G.F., Peng, C.Y., Kuo, W.C., Oonge, Z., and Lebduschka, V., "Sulfide Toxicity in Anaerobic Systems Fed Sulfate and Various Organics," Water Environment Research, 65, pp. 100-109 (1993).
30. Wilber, G.G. and Parkin, G.F., "Kinetics of Alachlor and Atrazine Biotransformation Under Various Electron Acceptor Conditions," Jour. Society for Environmental Toxicology and Chemistry, 14, 237-244 (1995).
31. Weathers, L.J. and Parkin, G.F., "Metallic Iron-Enhanced Biotransformation of Carbon Tetrachloride and Chloroform Under Methanogenic Conditions," in Bioremediation of Chlorinated Solvents, R.E. Hinchee, A. Leeson, and L. Semprini, Eds., CRC Press, Boca Raton, FL, pp. 117-122 (1995).
32. Hughes, J.B. and Parkin, G.F., "Concentration Effects of Chlorinated Aliphatic Transformation Rates," Jour. of Environmental Engineering, ASCE, 122, pp. 92-98 (1996).
33. Hughes, J.B. and Parkin, G.F., "Individual Biotransformation Rates in Chlorinated Aliphatic Mixtures," Jour. of Environmental Engineering, ASCE, 122, pp. 99-106 (1996).
34. Kuo, W.C. and Parkin, G.F., "Characterization of Soluble Microbial Products from Anaerobic Treatment by Molecular Weight Distribution and Nickel-Chelating Properties," Water Research, 30, pp. 915-922 (1996).
35. Parkin, G.F., "Bioremediation: A Promising Technology but Not a Panacea" Ch. 9 (pp. 113-128) in Biotechnology: Science, Engineering, and Ethical Challenges for the 21st Century, F.B. Rudolph and L.V. McIntire, Eds., John Henry Press, Washington, D.C. (1996).
36. Kuo, W-C., Sneve, M.A., and Parkin, G.F., "Formation of Soluble Microbial Products During Anaerobic Treatment," Water Environment Research, 68, pp. 279-285 (1996).

37. Shurtliff, M., Parkin, G.F., Weathers, L.J., and Gibson, D.T., "Kinetics and Transformation Products of Aerobic, Phenol-Induced Trichloroethylene Degradation," Jour. of Environmental Engineering, ASCE, 122, pp. 581-589 (1996).
38. Vermace, M.E., Christensen, R.F., Parkin, G.F., and Alvarez, P.J.J., "Relationship Between the Concentration of Denitrifiers and *Pseudomonas* spp. in Soils: Implications for BTX Bioremediation," Water Research, 30, pp. 3139-3145 (1996).
39. Maillacheruvu, K.Y. and Parkin, G.F., "Kinetics of Growth, Substrate Utilization, and Sulfide Toxicity for Propionate, Acetate, and Hydrogen Utilizers in Anaerobic Systems," Water Environment Research, 68, pp. 1099-1106 (1996).
40. Weathers, L.J., Parkin, G.F., and Alvarez, P.J., "Utilization of Cathodic Hydrogen as Electron Donor for Chloroform Cometabolism by a Mixed, Methanogenic Culture," Environmental Science & Technology, 31, pp. 880-885 (1997).
41. Adamson, D.T. and Parkin, G.F., "Biotransformation of Mixtures of Carbon Tetrachloride, Perchloroethylene, and 1,1,1 Trichloroethane," in In Situ and On-Site Bioremediation: Volume 3, B.C. Alleman and A. Leeson, Eds., Battelle Press, Columbus, OH, pp. 15-20 (1997).
42. Novak, P.J., Christ, S.C., and Parkin, G.F., "Kinetics of Alachlor Transformation and Identification of Metabolites Under Anaerobic Conditions," Water Research, 31, pp. 3107-3115 (1997).
43. Novak, P.J., Daniels, L., and Parkin, G.F., "Enhanced Dechlorination of Carbon Tetrachloride and Chloroform in the Presence of Elemental Iron and *Methanosarcina barkeri*, *Methanosarcina thermophila*, or *Methanosaeta concillii*," Environmental Science & Technology, 32, pp. 1438-1443 (1998).
44. Novak, P.J., Daniels, L., and Parkin, G.F., "Rapid Dechlorination of Carbon Tetrachloride and Chloroform by Extracellular Agents in Cultures of *Methanosarcina thermophila*," Environmental Science & Technology, 32, pp. 3132-3136 (1998).
45. Adamson, D.T. and Parkin, G.F., "Biotransformation Kinetics of Mixtures of Chlorinated Aliphatic Hydrocarbons by a Mixed Methanogenic Enrichment Culture," Water Research, 33, pp. 1482-1494 (1999).
46. Parkin, G.F., "Anaerobic Biotransformation of Chlorinated Aliphatic Hydrocarbons: Ugly Duckling to Beautiful Swan," Water Environment Research, 71, pp. 1158-1164 (1999).
47. Adamson, D.T. and Parkin, G.F., "Impact of Mixtures of Chlorinated Aliphatic Hydrocarbons on a High-Rate, Tetrachloroethene-Dechlorinating Enrhichment Culture," Environmental Science & Technology, 34, pp. 1959-1965 (2000).
48. Weathers, L.J. and Parkin, G.F., "Toxicity of Chloroform Biotransformation to Methanogenic Bacteria," Environmental Science & Technology, 34, pp. 2764-2767 (2000).
49. Gregory, K.B., Mason, M.G., Picken, H.D., Weathers, L.J., and Parkin, G.F., "Bioaugmentation of Fe(0) for the Remediation of Chlorinated Aliphatic Hydrocarbons," Environmental Engineering Science, 17, pp. 169-181 (2000).
50. Adamson, D.T. and Parkin, G.F., "Dependence of a High-Rate PCE-Dechlorinating Enrichment Culture on Methanogenic Activity," Bioremediation Journal, 5, 51-62 (2001).
51. Adamson, D.T. and Parkin, G.F., "Product Distribution During Transformation of Multiple Contaminants by a High-Rate, Tetrachloroethene-Dechlorinating Enrichment Culture," Biodegradation, 12, pp. 337-348 (2001).
52. Wallace, S.C., Cross, C.S., and Parkin, G.F., "Cold Climate Wetlands: Design & Performance," Water Science & Technology, 44, pp. 259-266 (2001).
53. Gander, J.W., Parkin, G.F., and Scherer, M.M., "Kinetics of 1,1,1-Trichloroethane Transformation by Iron Sulfide and a Methanogenic Consortia," Environmental Science & Technology, 36, pp. 4540-4546 (2002).
54. Gregory, K.B., Larese-Casanova, P., Parkin, G.F., and Scherer, M.M., "Abiotic Transformation of Hexahydro-1,3,5-trinitro-1,3.5-triazine by Fe^{II} Bound to Magnetite," Environmental Science & Technology, 38, pp. 1408-1414 (2004).
55. Shrout, J.D., Scheetz, T.D., Casavant, T.L., and Parkin, G.F., "Isolation and Characterization of Autotrophic, Hydrogen-Utilizating, Perchlorate-Reducing Bacteria," Applied Microbiology & Biotechnology, 67, pp. 261-268 (2005).
56. Shrout, J.D., A.G.B. Williams, M.M. Scherer, and G.F. Parkin, "Inhibition of Microbial Perchlorate Reduction by Zero-Valent Iron," Biodegradation, 16, pp. 23-32 (2005).
57. Parkin, G.F., "Biocatalysis in Environmental Remediation – Bioremediation," Ch. 18 in Environmental Catalysis, V. Grassian Ed., CRC Press (2005).
58. Williams, A.G.B., Gregory, K.B., Parkin, G.F., and Scherer, M.M., "Hexahydro-1,3,5-trinitro-1,3,5-triazine Transformation by Biologically Reduced Ferrihydrite: Evolution of Fe Mineralogy, Surface Area, and Reaction Rates," Environmental Science & Technology, 39, pp. 5183-5189 (2005).
59. Shrout, J.D., Struckhoff, G.C., Parkin, G.F., and Schnoor, J.L., "Stimulation and Molecular Characterization of Bacterial Perchlorate Degradation by Plant-Produced Electron Donors," Environmental Science & Technology, 40, pp. 310-317 (2006).

60. Shrout, J.D. and Parkin, G.F., "Influence of Electron Donor, Oxygen, and Redox Potential on Bacterial Perchlorate Degradation," Water Research, 40, pp. 1191-1199 (2006).
61. Nivala, J., Hoos, M.B., Cross, C.S., Wallace, S.D., and Parkin, G.F., "Treatment of Landfill Leachate Using an Aerated, Subsurface-flow Constructed Wetland," The Science of the Total Environment, 380, pp. 19-27 (2007).
62. Brown, H. and Parkin, G.F., "The Effect of Sulfide Inhibition and Organic Shock Loading on Anaerobic Biofilm Reactors Treating a Low-Temperature, High-Sulfate Wastewater," *Water Environment Research*, 81(3), pp. 265-288 (2009).

Textbook

- Sawyer, C.N., McCarty, P.L., and Parkin, G.F., Chemistry for Environmental Engineering, 4th edition, McGraw-Hill, New York (1994).
- Sawyer, C.N., McCarty, P.L., and Parkin, G.F., Chemistry for Environmental Engineering and Science, 5th edition, McGraw-Hill, New York (2003).

Major Courses Taught at UI

• Principles of Environmental Engineering
• Natural Environmental Systems
• Environmental Engineering Design
• Biological Treatment Processes
• Foundations of Bioremediation
• Environmental Chemistry I and Environmental Chemistry II
• Engineering Problem Solving I (required of all engineering freshmen)
• Decentralized Wastewater Treatment

M.S. students supervised to completion: 47 (39 at UI)

Ph.D. students supervised to completion: 17 (15 at UI)

Selected Professional Service Activities

• Member, International Association for Water Quality Specialty Group on Anaerobic Digestion, 1988-2002
• Board of Directors, Association of Environmental Engineering Professors, 1989-1992
• Secretary, Association of Environmental Engineering Professors, 1990-1992
• Editorial Board of Biodegradation (1997-present)
• State of Iowa, Brownfields Technical Advisory Committee (1997-1999)
• National Research Council, Vice Chair of Water Science and Technology Board Committee on Environmental Remediation at Naval Facilities, 1997-2002
• Johnson County Committee on Onsite Wastewater Systems on Lots of Less than One Acre (1999-2002)
• Reviewer of research proposals for NSF and USEPA, among others
• Reviewer of manuscripts for Env. Sci. & Tech., Biodegradation, Water Research, Water Environment Research, Jour. Env. Eng., ASCE, Biotechnology & Bioengineering, among others

Selected University of Iowa Service Activities

• Faculty Senate and Faculty Council (1999-2002)
• Committee on Committees (1999-2002)
• Board in Control of Athletics/Presidential Committee on Athletics (2001-2005)
• College of Engineering Promotion and Tenure Committee (2002-2004; Chair 2003-2004)
• Council on Teaching (2002-2005); Chair in 2003-04
• University of Iowa Presidential Search Committee (2007)
• Chair, 5-year Decanal Review of Barry Butler, Dean of Engineering (2009)
• University of Iowa Faculty Athletic Representative (2011-present)

Selected Consulting Activities

• Yardley Consultants, Inc., Yardley, PA - evaluation of hazardous waste remediation alternatives (1988-1998).
• Warren Frozen Foods, Altoona, IA - evaluation of waste loads (1995-1997)
• Belin, Harris, Lamson, & McCormick, Des Moines, IA - assessment of hazardous waste site (1996)
• North American Wetland Engineering, Forest Lake, MN - use of wetlands for remediation (1997-present)
• Ecolotree, North Liberty, IA – evaluation of wastewater treatment using Ewastewater® (2009-present)
• Iowa Environmental Council – evaluation of proposed waste load allocation procedures (2010-present)