

John Pichtel
Natural Resources and Environmental Management
Ball State University
Muncie, IN 47306-0495
jpichtel@bsu.edu

Current position: Professor, Department of Natural Resources and Environmental Management, Ball State University.

- Teach courses in site remediation, hazardous waste management, and environmental chemistry
- Conduct research in management of hazardous materials

Education:

1984-1987 PhD Agronomy/ Environmental Science from the Ohio State University, Columbus, OH.

1981-1983 MS Agronomy/Soil Chemistry from the Ohio State University, Columbus, OH.

1975-1980 BS *magna cum laude*. Natural Resource Management from Rutgers University, New Brunswick, NJ.

Professional Experience:

1997- Professor. Department of Natural Resources and Environmental Management, Ball State University, Muncie, IN.

1992-1995 Chairperson. Department of Natural Resources and Environmental Management, Ball State University, Muncie, IN.

1987-1997 Assistant Professor, Associate Professor. Department of Natural Resources, Ball State University, Muncie, IN.

1981-1987 Research Associate. Department of Agronomy. The Ohio State University, Columbus, OH.

1980 Engineering Assistant. Water and Power Resources Service. U.S. Department of the Interior, Billings, MT.

Visiting Scientist:

2013 University of Stirling (Scotland), Department of Biological and Environmental Sciences

2005	University College Cork (Ireland), Department of Civil and Environmental Engineering
1999-2003	Tampere University of Technology (Finland), Institute of Biotechnology and Environmental Engineering
1996	University of Stirling (Scotland), Department of Environmental Science

Courses Taught:

Ball State University

NREM 101 - Environment and Society, 1987-present
 NREM 221 – Soil Resources, 2000-2006; 2013-present
 NREM 322 – Soil Fertility, 1987-1992
 NREM 387 – Solid and Hazardous Waste Management, 1987-present
 NREM 481 – Site Assessment, 1987-2010
 NREM 488 – Site Remediation, 1996-present
 NREM 608 – Research Methodologies in Environmental Science, 1987-1992
 NREM 609 – Graduate Seminar, 2004-2011
 EMHS 350 - Hazardous Waste Site Operations and Emergency Response (40-hour OSHA course), 1996-present
 EMHS 351 – Introduction to Emergency Management, 2011-present
 EMHS 352 – Science of WMDs and Technological Hazards, 2009-present
 EMHS 353 – Arson Investigation, 2014-present
 EMHS 355 – International and Domestic Terrorism, 2011-present
 EMHS 389 – Emergency Response to WMDs, 2006-present

Tampere University of Technology (Finland)

General Microbiology, Fall 1999
 Phytoremediation of Contaminated Environments, Fall 1999

Tampere Polytechnic University (Finland)

Innovative Technologies for Site Remediation, Fall 1999

Research Theses and Dissertations Supervised:

- 2017 Price, J. Effect of antibiotic concentration on antibiotic resistance gene transfer in wastewater sludge. In progress.
- 2017 Whitman, R. Analysis of Indiana soils for ¹³⁷Cs from historic atmospheric nuclear tests. *EdD dissertation.*

- 2016 Alalade, D. Treatment of hydraulic fracturing fluids using physical and biological techniques.
- 2015 Ferguson, J. Water quality assessment of Prairie Creek Reservoir tributaries in Delaware County, Indiana.
- 2013 Liu, Y.-H. Biological decomposition of nitroglycerin as affected by environmental factors.
- 2013 Johnson, A. Reclamation of an Indiana brownfield site using agronomic and turf species.
- 2012 Trensey, J. Phytoremediation of nitroglycerin: Plant screening studies.
- 2012 Asbaghi, N. Phytoremediation of nitroglycerin as found in smokeless powders. *EdD dissertation*.
- 2011 Johnson, A. Phytoextraction of heavy metals from a derelict auto salvage facility.
- 2009 Crawford, J. Phytoremediation of nitroglycerin as affected by soil treatment.
- 2009 Asbaghi, N. Remediation of nitroglycerin in soil as affected by soil and plant treatment.
- 2009 Meza, I. Permeable reactive barriers for treatment of Cr.
- 2007 Nehl, R. Analysis of naturally-occurring and technology-based hazards in Indiana's District 6 Region.
- 2007 Fitzwater, K. Assessment of environmental hazards from electronics wastes using four extraction methods.
- 2007 Jacob, J. Field trials of the effectiveness of ragweed (*Ambrosia artemisiifolia*) for remediation of a severely contaminated Superfund site.
- 2006 Sagintayev, Z. Relationship between 20th century dune migration and wetland formation at Cape Cod National Seashore, Massachusetts.
- 2005 Hee, C. Field scale trials of lead and cadmium-contaminated soil.
- 2004 Flory, Q. Phytoremediation of lead-contaminated soil by selected green plants.
- 2004 Kutna, O. Cost-benefit analysis of the 'Blue Bag' recycling program, Muncie, Indiana.
- 2004 Sledz, L. GIS analysis of environmentally sensitive areas in Delaware County, Indiana.
- 2003 Khmyl, A. Phytoremediation of soils contaminated by polychlorinated biphenyls.
- 2002 Dominguez, E. Decomposition of petroleum hydrocarbons in the rhizosphere.
- 2000 Williams, M. Phytoremediation of soils contaminated by petroleum aromatic compounds.
- 2000 Bricker, T. Lead uptake by crops using chelating agents: Effects of repeated croppings.
- 2000 Vine, B. Soil Pb extraction as affected by Pb mineralogical and chemical forms.
- 1998 Steele, M. Comparison of extractants for metal recovery from a contaminated Superfund soil.
- 1997 Liberti, M. Immobilization of heavy metals in contaminated soils using fixative reagents.
- 1997 Curtis, T. Biofiltration for organic vapor removal from occupational environments.
- 1995 Gierke, T. Venting for a hydrocarbon-contaminated aquifer in Northern Indiana.
- 1991 Wilkins, J. A study of Delaware County, Indiana public opinion on waste management Issues.
- 1990 Jacinthe, P. Adsorption of the nitrification inhibitors nitrapyrin and dicyandiamide by soil humic substances.
- 1990 Woods, E. Heavy metal migration in petroleum-treated soils.
- 1990 Straub, C. Microbial degradation of synthetic polymers as affected by disposal Environment.
- 1990 Hayes, J. PCB (Arochlor 1242) mobility in soil as affected by various solvents.

John Pichtel
List of Publications

Books:

3. Pichtel, J. 2016. *Terrorism and WMDs: Awareness and Response*, 2nd edition. CRC Press, Boca Raton, FL.
2. Pichtel, J. 2014. *Waste Management Principles: Municipal, Hazardous, Special Wastes*, 2nd edition. CRC Press, Boca Raton, FL.
1. Pichtel, J. 2007. *Fundamentals of Site Remediation for Metal- and Hydrocarbon-Contaminated Soils*, 2nd edition. Government Institutes, Inc., Rockville, MD.

Book Chapters:

6. Pichtel, J. 2017. Biofilms for remediation of xenobiotic hydrocarbons – A Technical Review. In Ahmad, I., and F.M. Husain (Eds.). *Biofilms in Plant and Soil Health*. Springer, The Netherlands.
5. Maheshwari, M., H.H. Abulreesh, M.S. Khan, I. Ahmad, and J. Pichtel. 2017. Horizontal gene transfer in soil and the rhizosphere: Impact on ecological fitness of bacteria. In *Agriculturally Important Microbes for Sustainable Agriculture*. Springer, The Netherlands.
4. Pichtel, J. 2013. Bioremediation of nitroglycerin: State of the science. In S.N. Singh (Ed.), *Remediation of Explosive Residues*. Springer-Verlag, The Netherlands.
3. Ahmad, I., M. Imran, I. Ansari, and J.Pichtel. 2010. Metal tolerance and biosorption potential of soil fungi: Applications for a green water treatment technology. In: Ahmad, I., F. Ahmad, and J. Pichtel (Eds.). *Microbial Technology: Agricultural and Environmental Applications*. Springer, New York, NY.
2. Siddiqui, Z., and J. Pichtel. 2008. Mycorrhizae: An overview. In: Siddiqui, Z. (Ed.). *Mycorrhizae: Sustainable Agriculture and Forestry*. Springer, Dordrecht, the Netherlands.
1. Pichtel, J. 2005. Phytoextraction of lead-contaminated soils: Current experience. In: Ahmad, I., S. Hayat, and J. Pichtel. (Eds.) 2005. *Heavy Metal Contamination of Soils: Problems and Remedies*. Science Publishers, Enfield, NH.

Book Co-Editor:

4. Ahmad, I., Ahmad, F., and J.Pichtel (Eds.). 2010. *Microbial Technology: Agricultural and Environmental Applications*. Springer, New York, NY.
3. Hayat, S., M. Mori, J. Pichtel, and A. Ahmad. (Eds.) 2009. *Nitric Oxide in Plant Physiology*. Wiley-Blackwell. Weinheim, Germany.

2. Ahmad, I., J. Pichtel, and S. Hayat. (Eds.). 2008. *Plant-Bacteria Interactions: Technologies for Promoting Plant Growth*. Wiley-VCH Verlag, Weinheim, Germany.
1. Ahmad, I., S. Hayat, and J. Pichtel. (Eds.) 2005. *Heavy Metal Contamination of Soils: Problems and Remedies*. Science Publishers, Enfield, NH.

Refereed Articles:

55. Sricoth, T., W. Meeinkuirt, P. Saengwilai, J. Pichtel, and P. 2018. Taeprayoon. Aquatic plants for phytostabilization of cadmium and zinc in hydroponic experiments. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-018-1714-y>
54. Sricoth, T., W. Meeinkuirt, J. Pichtel, P. Taeprayoon, and P. Saengwilai. 2017. Synergistic phytoremediation of wastewater by two aquatic plants (*Typha angustifolia* and *Eichhornia crassipes*) and potential as biomass fuel. *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-017-0813-5>.
53. Pichtel, J., F. Lichtsinn, K. Waggener and A. Howe. 2017. Remediation of an Indiana brownfield: A student immersive learning experience. *Proceedings of the Indiana Academy of Science*. 126(1): 63-71.
52. Alalade, O., J. Ferguson, and J. Pichtel. 2017. Treatment of simulated oil and gas production wastewater using *Typha latifolia* in a Pilot-Scale Constructed Wetland. *Environmental Biotechnology*. 13(1): 1-10.
51. Saengwilai, P., W. Meeinkuirt, J. Pichtel, and P. Koedrith. 2017. Influence of amendments on Cd and Zn uptake and accumulation in rice (*Oryza sativa* L.) in contaminated soil. *Environmental Science and Pollution Research*. 24:15756-15767.
50. Kaewtubtim, P., W. Meeinkuirt, S. Seepoma, and J. Pichtel. 2016. Radionuclide (^{226}Ra , ^{232}Th , ^{40}K) accumulation among plant species in mangrove ecosystems of Pattani Bay, Thailand . *Marine Pollution Bulletin*. 115(1-2): 391-400.
49. Kaewtubtim, P., W. Meeinkuirt, S. Seepom, and J. Pichtel. 2016. Occurrence of heavy metals and radionuclides in sediments and seawater in mangrove ecosystems in Pattani Bay, Thailand. *Environmental Science and Pollution Research*. 24:7630-7639.
48. Ferguson, J.D., J. Pichtel, and J. Popovičová. 2016. Water quality assessment of Prairie Creek Reservoir tributaries in Delaware County, Indiana. *Proceedings of the Indiana Academy of Science*. 125(1): 50-60.
47. Phusantisampan, T., W. Meeinkuirt, P. Saengwilai, J. Pichtel, and R. Chaiyarat. 2016. Phytostabilization potential of two ecotypes of *Vetiveria zizanioides* in cadmium-contaminated soils: Greenhouse and field experiments. *Environmental Science and Pollution Research*. 23: 20027-20038.

46. Pichtel, J. 2016. Oil and Gas Production Wastewater: Soil Contamination and Pollution Prevention. *Applied and Environmental Soil Science*. p. 1-24. downloads.hindawi.com/journals/aess/aip/2707989.pdf
45. Phusantisampan, T., J. Pichtel, P. Saengwilai, J. Kubola, and W. Meeinkuirt. 2016. Evaluation of the cadmium phytoextraction potential of *Tagetes erecta l.* (marigold). *Maejo International Journal of Science and Technology*. www.mijst.mju.ac.th.
44. Kaewtubtim, P. W. Meeinkuirt, S. Seepom, and J. Pichtel. 2016. Heavy metal phytoremediation potential of mangrove plant species of Pattani Bay, Thailand. *Applied Ecology*. 14(1): 367-382.
43. Meeinkuirt, W., M. Kruatrachue, J. Pichtel, T. Phusantisampan, and P. Saengwilai. 2016. Influence of organic amendments on phytostabilization of Cd-contaminated soil by *Eucalyptus camaldulensis*. *ScienceAsia*. 42: 83-91.
42. Turner, D.A., J. Pichtel, Y. Rodenas, J. McKillip, and J. Goodpaster. 2015. Microbial degradation of gasoline in soil: Effect of season of sampling. *Forensic Science International*. 251: 69-76.
41. Schmid, L., and J. Pichtel. 2014. Decomposition of nitroglycerin in smokeless powders by aerobic thermophilic composting. *Proceedings of the Indiana Academy of Science*. 122(2): 69-77.
40. Pichtel, Y., and J. Pichtel. 2014. Al-Qaeda in the Arabian Peninsula: Future directions. *Security and International Studies Journal*. 2(1): 15-28.
39. Turner, D.A., J. Pichtel, Y. Rodenas, J. McKillip, and J. V. Goodpaster. 2013. Microbial degradation of ignitable liquids in soil: Comparison by soil type. *Journal of Bioremediation and Biodegradation*. 5(2): 216-221.
38. Asbaghi, N., and J. Pichtel. 2012. Phytoremediation of nitroglycerin in smokeless powders *Environmental Biotechnology*. 8(2): 45-54.
37. Hayat, S., Q. Hayat, M.N. Alyemeni, A.S. Wani, J. Pichtel, and A. Ahmad. 2012. Role of proline under changing environments: A Review. *Plant Signaling and Behavior*. 7:1-11.
36. Pichtel, J. 2012. Fate and distribution of explosive and propellant residues in soil. *Journal of Applied and Environmental Soil Science*. <http://www.hindawi.com/journals/aess/2012/617236/>.
35. Meza, I., and J. Pichtel. 2010. Attenuation of chromium and cadmium using four media. *IUP Journal of Soil and Water Sciences*. 31(1):7-24.

34. Keith, A., K. Keesling, K. Fitzwater, J. Pichtel, and D. Houy. 2008. Assessment of Pb, Cd, Cr and Ag leaching from electronics waste using four extraction methods. *Journal of Environmental Science and Health*. Part A. 43 (14):1-8.
33. Jacob, J.R., C.K. Hee, and J. Pichtel. 2007. Amendments for field-scale phytotreatment of Pb, Cd and Zn from an Indiana Superfund soil. *Proceedings of the Indiana Academy of Science*. http://www.indianaacademyofscience.org/proceedings%20pdfs/2007%20vol%20116/Proc_v116_2_2007_pp148-157.pdf
32. Palmroth, M.R., P.E. Koskinen, A.H. Koskinen, U. Munster, J. Pichtel, and J.A. Puhakka. 2007. Metabolic and phylogenetic analysis of microbial communities during phytoremediation of soil contaminated with weathered hydrocarbons and heavy metals. *Biodegradation*. 18(6):769-82.
31. Pichtel, J., and D. Bradway. 2007. Conventional crops and organic amendments for Pb, Cd and Zn treatment at a severely contaminated site. *Bioresource Technology*. <http://www.sciencedirect.com/science/article/pii/S0960852407002301>.
30. Palmroth, M.R.T., P.E. Koskinen, J. Pichtel, K. Vaajasaari, A. Joutti, J.A. Puhakka, and T.A. Tuhkanen. 2006. Field-scale assessment of phytoremediation of soil contaminated with weathered hydrocarbons and heavy metals. *Journal of Soils and Sediments*. 6(3):128-136.
29. Palmroth, M.R., U. Munster, J. Pichtel, and J.A. Puhakka. 2005. Metabolic responses of microbiota to diesel fuel addition in vegetated soil. *Biodegradation*. 16:91–101.
28. Dominguez-Rosado, E., and J. Pichtel. 2004. Transformation of fulvic substances in the rhizosphere during phytoremediation of used motor oil. *Journal of Environmental Science and Health*. A39(9):2369-2381.
27. Dominguez-Rosado, E., J. Pichtel, and M. Coughlin. 2004. Phytoremediation of soil contaminated with used motor oil: I. Enhanced microbial activities from laboratory and growth chamber studies. *Environmental Engineering Science*. 21:157-168.
26. Dominguez-Rosado, E., and J. Pichtel. 2004. Phytoremediation of soil contaminated with used motor oil: II. Greenhouse studies. *Environmental Engineering Science*. 21:169-180.
25. Dominguez-Rosado, E., and J. Pichtel. 2003. Chemical characterization of fresh, used and weathered motor oil via GC/MS, NMR and FTIR techniques. *Proceedings of the Indiana Academy of Science*. 112(2): 109-116.
24. Palmroth, M.R.T., J. Pichtel, and J.A. Puhakka. 2002. Phytoremediation of subarctic soil contaminated with diesel fuel. *Bioresource Technology*. 84:221-228.

23. Dominguez-Rosado, E., J. J. Liggat, C. E. Snape, and J. Pichtel. 2002. Thermal degradation of urethane modified polyisocyanurate foams based on aliphatic and aromatic polyester polyol. *Polymer Degradation and Stability*. 78:1-5.
22. Bricker, T.J., J. Pichtel, H.J. Brown, and M. Simmons. 2001. Phytoextraction of Pb and Cd from a Superfund soil: Effects of amendments and croppings. *Journal of Environmental Science and Health*. A36: 1597-1610.
21. Pichtel, J., and P. Liskanen. 2001. Degradation of diesel fuel in rhizosphere soil. *Environmental Engineering Science*. 18: 147-159.
20. Pichtel, J., B. Vine, P. Kuula-Väisänen and P. Niskanen. 2001. Lead extraction from soils as affected by Pb chemical and mineral forms. *Environmental Engineering Science*. 18: 91-98.
19. Pichtel, J., K. Kuroiwa, and H.T. Sawyerr. 2000. Distribution of Pb, Cd and Ba in soils and plants of two contaminated sites. *Environmental Pollution*. 110:171-178.
18. Liberti, M., and J. Pichtel. 1998. Spatial distribution of trace metals in Delaware County, Indiana, surface soils. *Proceedings of the Indiana Academy of Science*. 106:237-250.
17. Steele, M.C., and J. Pichtel. 1998. *Ex-situ* remediation of a metal-contaminated Superfund soil using selective extractants. *Journal of Environmental Engineering*. 124:639-645.
16. Pichtel, J., and C.A. Salt. 1998. Vegetative growth and trace metal accumulation on metalliferous wastes. *Journal of Environmental Quality*. 27:618-624.
15. Pichtel, J., A. Covey, and K. Lucskay. 1997. Removal of lead and chromium from contaminated soil: Column studies. *Proceedings of the Indiana Academy of Science*. 106:95-104.
14. Pichtel J., H.T. Sawyerr, and K. Czarnowska. 1997. Spatial and temporal distribution of heavy metals in Warsaw, Poland, Soils. *Environmental Pollution*. 98:169-174.
13. Pichtel, J., and T. M. Pichtel. 1997. Comparison of solvents for *ex-situ* removal of Cr and Pb from contaminated soil. *Environmental Engineering Science*. 14:97-103.
12. Pichtel, J., and M. Anderson. 1997. Trace metal bioavailability in municipal solid waste and sewage sludge composts. *Bioresource Technology*. 60:223-229.
11. Pichtel, J., T.L. Gierke, and D.A. Scheidler. 1995. Determination of cyanide in soils and wastes by ion chromatography. *Proceedings of the Indiana Academy of Science*. 104:241-247.

10. Pichtel, J., W.A. Dick, and P. Sutton. 1994. Comparison of amendments and management practices for long-term reclamation of abandoned mine lands. *Journal of Environmental Quality*. 23:766-772.
9. Pichtel, J., and D.A. Scheidler. 1992. Microbial activity in soil-hydrocarbon mixtures amended with chromium. *Proceedings of the Indiana Academy of Science*. 101:75-82.
8. Jacinthe, P.A., and J. Pichtel. 1992. Interaction of nitrapyrin and dicyandiamide with soil humic substances. *Soil Science Society of America Journal*. 56:465-470.
7. Pichtel, J. and W.A. Dick. 1991. Sulfur, iron and solid phase transformations during the biological oxidation of pyritic mine spoil. *Soil Biology and Biochemistry*, 23:101-107.
6. Pichtel, J., and W.A. Dick. 1991. Influence of biological inhibitors on the oxidation of pyritic mine spoil. *Soil Biology and Biochemistry*. 23:109-116.
5. Pichtel, J. 1990. Microbial respiration in fly ash/sewage sludge-amended soils. *Environmental Pollution, Series A* 63:225-237.
4. Pichtel, J., and J.M. Hayes. 1990. Influence of fly ash on soil microbial activity and populations. *Journal of Environmental Quality*. 19: 593-597.
3. Pichtel, J., W.A. Dick, and E.L. McCoy. 1989. Binding of Fe from pyritic mine spoil by water- soluble organic materials. *Soil Science*. 148:140-148.
2. Pichtel, J., W.A. Dick, and R.M. Hanna. 1988. Reclamation of a marcasite spoil by the addition of limestone. *Bulletin of the New Jersey Academy of Science*. 33:7-12.
1. Pichtel, J., E.O. McLean, W.A. Dick, and H. Esmailzadeh. 1986. Refinement of Quicktest methodology for improved potassium fertilizer recommendations. *Agronomy Journal*. 78:772-774.