

EDUCATION

- M.S.** Plant Science, Crop Physiology/Phytoremediation Emphasis, Utah State University, 1999
B.S. Environmental Science, Natural Resource Management Emphasis, Bowling Green State University, 1994

EXPERIENCE

Senior Research Associate, January 2001 to Present

Utah State University, Crop Physiology and Utah Water Research Laboratories, Logan, UT

Multi-faceted research position with emphasis on whole plant physiology. Research topics have included phytoremediation (the use of higher plants to remediate contaminated environments), with emphasis on the fate of various organic and inorganic environmental contaminants in planted systems; efficacy of slow-release, humic, and recycled metal fertilizers; dwarf crop physiology; and most recently the effects of ethylene and ethylene perception inhibitors on whole plant physiology. Experiments are carried out in controlled environments (growth chambers and greenhouses) with extensive use of dataloggers for monitoring and control of plant growth parameters. Responsible for writing proposals, reviewing scientific literature, designing experiments, setting up and programming datalogger systems, and collecting, summarizing, interpreting and reporting data.

President, 2001 to 2006

Castilleja Consulting, Inc., Hyrum, UT

Provided clients with low-cost solutions based on sound scientific evidence and guided by state and federal regulations. Projects included baseline field surveys for resident and migratory wildlife, riparian and upland vegetation surveys, and native habitat restoration. Duties included data collection, interpretation, and reporting as well as record keeping and financial management.

Project Manager, November 1999 to January 2001

Phytokinetics, Inc., Logan, UT

Primary responsibilities included proposal, work plan, and report writing as well as project design and daily client interaction. Other responsibilities included investigation of potential funding opportunities, review of current literature relevant to phytoremediation, installation of phytoremediation systems, and composition of publications for inclusion into scientific journals.

Graduate Research Assistant, 1997 to 1999

Utah State University, Crop Physiology and Utah Water Research Laboratories, Logan, UT

Thesis research investigated the potential for phytoremediation of trichloroethylene (TCE) using hybrid poplar. As part of a multi-disciplinary research team, built and utilized a controlled-environment plant growth chamber system designed to minimize experimental artifacts and to maximize mass balance recovery of radiolabeled VOCs. Conducted greenhouse studies on plant uptake and accumulation of TCE metabolites and compared data to those generated by the TCE studies. Project leader in a field investigation quantifying TCE uptake, translocation, volatilization, and metabolism by resident vegetation at Hill A.F.B., UT. Xylem core, leaf tissue, and soil samples were collected from trees growing above a PCE/TCE plume and were analyzed for TCE/PCE parent compounds and metabolites. Transpiration gas emanating from the trees was sampled and analyzed for parent compounds and metabolites.

PROFESSIONAL MEMBERSHIPS

American Society of Agronomy, Soil Science Society of America, Crop Science Society of America, Society of Environmental Toxicology and Chemistry

PUBLICATIONS

- W.J. Doucette, J.K. Chard, H. Fabrizius, C. Crouch, M. Petersen, and K. Gorder. Trichloroethylene uptake into fruits and vegetables: Three-year field monitoring study. Submitted to *Environ. Sci. Technol.*
- Henry, A., W. Doucette, J. Norton, S. Jones, J. Chard, and B. Bugbee. 2006. An axenic plant culture system for optimal growth in long-term studies. *J. Environ. Qual.* 35(2):590-598.
- Chard, B.K., W.J. Doucette, J.K. Chard, B. Bugbee, and K. Gorder. 2006. Trichloroethylene uptake by apple and peach trees and transfer to fruit. *Environ. Sci. Technol.* 40:4788-4793.
- Doucette, W.J., **J.K. Chard**, B.J. Moore, W.J. Staudt, and J.V. Headley. 2005. Uptake of sulfolane and diisopropanolamine (DIPA) by cattails (*Typha latifolia*). *Microchemical Journal* 81(1):41-49.
- J. Chard**, A.M. Ferro, and J. Greene. 2001. Recent advances in phytoremediation of groundwater MTBE plumes. Special Issue, *Contam. Soil Sed. Water*. Spring:72-76.
- Ferro, A., **J. Chard**, R. Kjelgren, D. Turner, B. Chard, and T. Montague. 2001. Groundwater Phytoremediation Using Poplar Trees: Evaluation of a System in Ogden, Utah. *Internat. J. Phytoremed.* 3(1):87-104.
- Ferro, A., R. Kjelgren, D. Turner, B. Chard, T. Montague, and **J. Chard**. 2000. Phytoremediation systems designed to control contaminant migration. In: *Proceedings of the EPA Phytoremediation: State of the Science Conference*, May 1-2, Boston, MA.
- Orchard, B.J., W.J. Doucette, **J.K. Chard**, and B. Bugbee. 2000. A novel laboratory system for determining the fate of trichloroethylene in planted systems. *Environ. Toxicol. Chem.* 19(4):888-894.
- Orchard, B.J., W.J. Doucette, **J.K. Chard**, and B. Bugbee. 2000. Uptake of trichloroethylene by hybrid poplar trees grown hydroponically in flow-through plant growth chambers. *Environ. Toxicol. Chem.* 19(4):895-903.
- Chard, J.K.** 1999. Uptake and Transformation of Trichloroethylene by Hybrid Poplar: Laboratory Studies. MS Thesis. Utah State University, Logan, UT.

PRESENTATIONS

- Chard, J.**, M. Hamilton, D. Maiers, and B. Bugbee. 2003. Rhizosphere effects on strontium uptake in crested wheatgrass. Presented in a poster session at the Agronomy Society of America Annual Meetings, November 2-6, Denver, CO.
- Chard, J.K.**, W.J. Doucette, B.K. Chard, H. Fabrizius, C. Crouch, and K. Gorder. 2003. Trichloroethylene in fruits and vegetables: Preliminary field survey results. Presented in a poster session at the Seventh International Conference on In Situ and On-Site Bioremediation, June 2-5, Orlando, FL.
- Chard, J.**, W. Doucette, and B. Moore. 2002. Fate of ¹⁴C benzene in a laboratory-scale constructed wetlands system. Presented in a platform session at the Society of Environmental Toxicology and Chemistry 23rd Annual Meeting, November 16-20, Salt Lake City, UT.
- Chard, J.**, A. Henry, S. Jones, J. Norton, C. Palmer, R. Hess, and B. Bugbee. 2001. Sterile culture techniques for characterization of root exudates. Presented in a poster session at the Agronomy Society of America Annual Meetings, October 22-25, Charlotte, NC.
- Chard, J.K.**, B.J. Orchard, W.J. Doucette, and B. Bugbee. 1999. Plant growth conditions alter the uptake of trichloroethylene by hybrid poplar. Presented in a platform session at the Conference on Hazardous Waste Research, May 24-27, St. Louis, MO.
- Chard, J.K.**, B.J. Orchard, C.J. Pajak, W.J. Doucette, and B. Bugbee. 1998. Design of a plant growth chamber for studies on the uptake of volatile organic compounds. Presented in a poster session at the Conference on Hazardous Waste Research, May 18-21, Snowbird, UT.