

CURRICULUM VITAE

Bruce Richard James

Notarization. I have read the following and certify that this curriculum vitae is a current and accurate statement of my professional record.

Signature:



Date: April 24, 2015

**Soil Chemistry Program
Department of Environmental Science and Technology**

Environmental Science and Policy Program

Sustainability Studies Minor

Rm. 0220 Symons Hall
University of Maryland
College Park, MD 20742 USA
Telephone: (301) 405-8573
Email: brjames@umd.edu

EDUCATIONAL BACKGROUND

<u>Institution</u>	<u>Dates</u>	<u>Degree</u>	<u>Major</u>
Williams College	1973	B.A.	Chemistry & Environmental Studies
University of Vermont	1979	M.S.	Soil Chemistry
University of Vermont	1981	Ph.D.	Soil Chemistry

POSITIONS HELD

University of Maryland, College Park (1986 - present)

Professor of Soil Chemistry (1997 - 2015)

Associate Professor (1992 - 1997)

Assistant Professor (1986 - 1992)

Affiliate Professor of Geology (2001- 2015)

Affiliate, Center for Integrative Environmental Research (2007 - 2012)

Affiliate, Master of Engineering and Public Policy Program (2007 - 2012)

Teaching. Responsible for lecture and laboratory *Soil Chemistry* (ENST 421) and *Advanced Soil Chemistry* (ENST 722) courses for undergraduate and graduate students. Emphases on basic principles of colloid and soil chemistry and their application to natural water chemistry and biology, ecosystem function, natural resource conservation, plant-soil interactions, agriculture, and environmental quality. (7 semester credits and approximately 112 student-credit hours per year)

Research. Responsible for conducting and supervising graduate students in research on the colloid and aquatic chemistry of soils and its application to environmental quality and agriculture, the remediation of chromium-contaminated soils, disposal of waste materials on land, and microbial-chemical redox processes. Areas of specialization include oxidation-reduction processes, nitrogen dynamics, heavy metal and aluminum chemistry,

and trace element speciation. Supervision of one PhD, two MS students, and three undergraduate research assistants.

Trans-Disciplinary Teaching & Research. Development and teaching of *Crops, Soils, and Civilization* (ENST 440 & 640), a Human Cultural Diversity CORE course. Multi-disciplinary research and teaching on the development, decline, and resilience of complex human societies and ancient civilizations as related to the use, management, and misuse of soil, water, animal, and plant resources. (3 semester credits and 126 student-credit hours per year).

Director, Environmental Science and Policy Program (1997- 2015)

Administration. Responsible for administration of the university-wide, undergraduate major for approximately 350 students in 12 areas of concentration sponsored by the Colleges of Agriculture and Natural Resources; Computer, Mathematical, and Natural Sciences; and Behavioral and Social Sciences. Coordination of the Program Steering Committee, establishment and leadership of Honors-in-ENSP, formulating academic policies, and guiding the evolution of the program. Supervision of an Associate Director, a Program Management Specialist, two Lecturers, three Graduate Teaching Assistants, and two Undergraduate Teaching Assistants.

Teaching. Development and teaching of the senior-level *Capstone* course (ENSP 400) spring semester, teaching introductory *Environmental Science* (ENSP 101) in the fall, *Internship* supervision (ENSP 386) year-round; and coordination of interdisciplinary, ENSP course offerings. (7 semester credits and approximately 800 student-credit hours per year)

Co-Director, Sustainability Studies Minor (January, 2012 - 2015)

Administration. Responsible for administration of the new, university-wide, undergraduate minor for more than 300 students. Coordination of disciplinary lists of courses linked to Sustainability Studies in Science and Technology, Policy and Institutions, and Social & Human Dimensions. Supervision of a Graduate Administrative Assistant and two Graduate Teaching Assistants.

Teaching. Development and teaching of the initial offering of the anchor course for the minor, *Introduction to Sustainability* (AGNR 300) in spring semester, 2012 for approximately 125 students (3 semester credits and approximately 375 student-credit hours per year)

Director, Environmental Studies Program of College Park Scholars (1999-2007; 2008-2009)

Administration and teaching. Responsible for administration of the Environmental Studies Program of the two-year certificate, living-learning program in College Park Scholars. Curriculum development, teaching, and program planning for approximately 120 freshmen and sophomores. Curriculum comprises environmental history, environmental ethics, environmental science, and environmental policy; in addition to individual practica and supporting courses.

University Marshall (2007-2012).

Ceremonial position for semi-annual Commencement exercises, annual University Convocation, and occasional special lectures and events.

Universität für Bodenkultur (BOKU), Wien, Österreich (Aug., 2012 – Aug., 2013)
(University of Natural Resources and Life Sciences, Vienna, Austria)

Visiting Research Professor, Institute for Soils Research, Dept. of Forest and Soil Sciences

Three transdisciplinary research projects on the role of soil, water, and crop use and management on the development, decline, and resilience of ancient civilizations: (1) writing a chapter related to soils in ancient Rome for an edited book entitled *The Soil Underfoot: Infinite Possibilities for a Finite Resource*; (2) researching and writing a book as sole author entitled *Resilience of Civilization: How Soil Underlies the Fate of Societies*; and (3) developing a theoretical paper for the World Congress of Soil Sciences in 2014 entitled “Soils as Interfacial, Low Entropy Systems with Resilience Based on Maximum Entropy Production.”

Swiss Federal Institute for Aquatic Science and Technology (EAWAG) Zürich

Visiting Scientist, Chemistry Department (1994-1995)

Twelve-month sabbatical leave focusing on research related to free radical and photochemical reactions in natural waters, colloidal suspensions, and soils; development of new ideas and methods for assessment of redox processes in soils; study and evaluation of the undergraduate program in Environmental Sciences at the Swiss Federal Institute of Technology; development of ideas for an international center for soil and society.

Cornell University

Research Associate, Agronomy and Natural Resources Departments (1981-1986)

Responsible for research on dissolution kinetics of trace metals in rhizosphere soil using polarographic methods to detect sub-micromolar concentrations of iron and zinc.
(1985-1986)

Responsible for research on chemical interactions of acid precipitation with aluminum in forest soils, spatial variability of forest soil properties, and chemistry of tree root-soil interactions. Development and management of supporting grants. (1981-1985)

University of Vermont

Graduate Research and Teaching Fellow, Department of Plant and Soil Science (1976-1981)

Responsible for research on the soil chemistry of chromium, including studies on oxidation-reduction, organic complexation, solubility, anion and cation exchange, plus studies on nitrification and plant-soil interactions. Other research on development of rhizotrons, handling soil materials in soil chemical research, and disposal of sewage sludges and tannery wastes on land. Laboratory instructor in introductory soil science (4 semesters) and soil chemistry (2 semesters). Organizer of an interdepartmental symposium on roots and root growth. Major professor: Richmond J. Bartlett.

Tutor in Chemistry

Project S.T.A.Y., a federally-funded organization designed to aid disadvantaged students
(1980-81)

West Sussex County Council, England

Houseparent

Home for maladjusted children, Horsham. Youth tutor in local schools (1975-1976)

Avon Old Farms School

Teacher

High school science and chemistry, Avon, Connecticut, (1974-1975)

Granby Public Schools**Teacher**

Eighth grade science, Granby, Connecticut. Development of outdoor science curriculum (1974)

Williams College**Undergraduate Researcher**

Chemistry of sanitary landfill leachate; groundwater collection system design (1973)

Appalachian Mountain Club**Hutmaster and Crew Member**

Hiking hostels (backcountry hut system), White Mountain National Forest, New Hampshire. Hut operation; environmental and natural history education; search and rescue; liaison with U.S. Forest Service (summers, 1970-1973)

RESEARCH, SCHOLARLY, AND CREATIVE ACTIVITIES**Chapters in books** (* signifies a graduate student for whom I was the major advisor)

James, B.R., W.E.H. Blum, and C. Dazzi. 2013. Bread and Soil in Ancient Rome: A Vision of Abundance and an Ideal of Order Based on Wheat, Grapes, and Olives. pp. 153-173. *In* J. Churchman and E. Landa (ed.) The Soil Underfoot: Infinite Possibilities for a Finite Resource. CRC Press, Boca Raton, FL.

James, B.R. and *D. A. Brose. 2013. Chromium. pp. 477-482 *In* S. E. Jorgenson (ed.) Encyclopedia of Environmental Management. Taylor and Francis, New York. URL <http://dx.doi.org/10.1081/E-EEM-120046622>

James, B.R., and *D.A. Brose. 2012. Oxidation - Reduction Phenomena. pp. 14-1 to 14-24. *In* P.M. Huang, Y. Li, and M.E. Sumner (ed.) Handbook of Soil Sciences: Properties and Processes. 2nd edn. CRC Press, Boca Raton, FL.

Schwartz, C.W., Wylie, A.G., Davis, A.P., and **James, B.R.** 2009. Column Expansion Testing of Chromium Tailings Subgrade Fills. Contemporary Topics in Ground Modification, Problem Soils, and Geo-Support. Geotechnical Special Publication 187 (Iskander, M., Laefer, D.F., and Hussein, M.H. eds.), ASCE, pp. 542-549.

James, B.R. 2004. Soil chemistry and mineralogy: Buffering capacity. pp. 142-147. *In* D. Hillel et al. (ed.) Encyclopedia of Soils in the Environment Elsevier, London.

James, B.R. 2003. Chromium. pp. 75-79. *In* B.A. Stewart and T. Howell (ed.) Encyclopedia of Water Science Marcel Dekker, New York.

James, B.R. 2002. Redox phenomena. pp. 1098-1100. *In* R. Lal(ed.) Encyclopedia of Soil Science Marcel Dekker, New York.

James, B.R., and R.J. Bartlett. 2000. Redox phenomena. pp.B169-B194. *In* M.E. Sumner (ed.) Handbook of Soil Science. CRC Press, Boca Raton, FL.

Petura, J.C., **B.R. James**, R.J. Vitale, and G.R. Mussoline. 1998. pp.1142-1158. Chromium(VI) in soils. *In* R.A. Meyers (ed.) Encyclopedia of Environmental Analysis and Remediation. John Wiley & Sons, Inc., New York.

- Hill, R.L., and **B.R. James**. 1995. The influence of waste amendments on soil properties. pp. 311-326. In J. Rechigl (ed.) Soil Amendments and Environmental Quality. Lewis Publ., Chelsea, MI.
- Bartlett, R. J. and **B. R. James**. 1996. Chromium In D. L. Sparks (ed.) Methods of Soil Analysis. Part 3. 3rd ed. Agronomy 5:683-701.
- Bartlett, R.J. and **B.R. James**. 1993. Redox chemistry of soils. Advances in Agronomy 50:151-208.
- James, B.R.** 1992. The future of soil chemistry in the Northeast: Lessons from Colonial New England. pp. 11-18. In J.T. Sims (ed.) Agricultural Research in the Northeastern United States: Critical Review and Future Perspectives. Am. Soc. Agron. Special Publ., Madison, WI.
- Rabenhorst, M.C., and **B.R. James**. 1991. Iron sulfidization in tidal marsh soils. pp. 203-217. In H.C.W. Skinner and R.W. Fitzpatrick (ed.) Biomining processes of iron and manganese. Catena Supplement 21. Catena Verlag.
- Bartlett, R. J. and **B. R. James**. 1988. Mobility and bioavailability of chromium in soils. pp. 267-304. In J. Nriagu and E. Niebohr (ed.) Chromium in the natural and human environments Advances in Environmental Science and Technology, Wiley, New York.

Articles in Refereed Journals (* signifies a graduate student for whom I was the major advisor)

- *Brose, D.A. and **B.R. James**. 2013. Hexavalent chromium reduction by tartaric acid and isopropyl alcohol in Mid-Atlantic soils and the role of Mn(III,IV)(hydr)oxides. Environmental Science and Technology. 47:12985-12991.
- *Brose, D.A. and **B.R. James**. 2013. Hexavalent chromium reduction in chromite ore processing residue-enriched soil by tartaric acid with isopropyl alcohol and divalent manganese as co-reductants. Journal of Environmental Quality 42:766-773.
- Parikh, S.J. and **B.R. James**. 2012. Soil: The foundation of agriculture. Nature Education. Refereed online publication at URL <http://www.nature.com/scitable/knowledge/library/soil-the-foundation-of-agriculture-84224268>
- *Brose, D.A. and **B.R. James**. 2010. Oxidation-reduction transformations of chromium in aerobic soils: Role of electron-shuttling quinones. Environmental Science and Technology 44:9438-9444.
- Rabenhorst, M.C., W.D. Hively, and **B.R. James**. 2009. Measurement of soil redox potential. Soil Science Society America Journal 73:668-674.
- Rabenhorst, M. C., R. R. Bourgault, and **B. R. James**. 2008. Iron oxyhydroxide reduction in simulated wetland soils: Effects of mineralogical composition of IRIS paints. Soil Science Society of America Journal 72:1828-1842.
- *Yesilonis, I., **B.R. James**, R.V. Pouyat, and B. Momen. 2008. Lead forms in urban turfgrass and forest soils as related to organic matter and pH. Environmental Monitoring and Assessment 146:1-17.
- *Yoo, M.S. and **B.R. James**. 2003. Zinc exchangeability as a function of pH in citric acid-amended soils. Soil Science 168:356-367.
- *Yoo, M.S., and **B.R. James**. 2003. Zinc extractability and plant uptake in flooded, organic waste-amended soils. Soil Science 168:686-698
- *Yoo, M.S. and **B.R. James**. 2002. Zinc extractability as a function of pH in organic-waste amended soils. Soil Science 167:246-259.

*Rock, M.L., **B.R. James**, and G.R. Helz. 2001. Hydrogen peroxide effects on chromium oxidation state and solubility in four, diverse, chromium-enriched soils. Environmental Science and Technology 35:4054-4059.

James, B. 2001. Chemical transformations of chromium in soils: Relevance to mobility, bioavailability, and remediation. Chromium File Paper No. 8, International Chromium Development Association. pp. 1-8.

James, B.R. 2001. Remediation-by-reduction strategies for chromate-contaminated soils. Environmental Geochemistry and Health 23:175-179.

Vitale, R.J., G.R. Mussoline, J.C. Petura, and **B.R. James**. 1997. Cr(VI) soil analytical method: A reliable analytical method for extracting and quantifying Cr(VI) in soils. Journal of Soil Contamination 6:581-594.

James, B.R., J.C.Petura, R.J. Vitale, and G.R. Mussoline. 1997. Oxidation-reduction chemistry of chromium: Relevance to the regulation and remediation of chromate-contaminated soils. Journal of Soil Contamination 6:569-580.

Pantalone, V., W. Kenworthy, L. Slaughter, and **B. James**. 1997. Chloride tolerance in soybean and perennial Glycine accessions. Euphytica 97:235-239.

*Vulava, V.M., **B.R. James**, and A. Torrents. 1996. Copper solubility in Myersville B horizon soil in the presence of DTPA. Soil Science Society of America Journal.61:44-52.

James, B.R. 1996. Soil, water, and civilizations. EAWAG News. 41:17-20 (In German, French, and English)

James, B.R. 1996. The challenge of remediating chromium-contaminated soil. Environmental Science and Technology 30:248A-251A.

Hug, S.J., **B.R. James**, and H.-U. Laubscher. 1996. Iron(III)-catalyzed photochemical reduction of Cr(VI) in the presence of oxalate and dissolved and solid iron phases. Environmental Science and Technology. 31:160-170.

Vitale, R.J., G.R. Mussoline, K.A. Rinehimer, J.C. Petura, and **B.R. James**. 1996. Extraction of sparingly soluble chromate from soils: Evaluation of methods and Eh-pH effects. Environmental Science and Technology. 31:390-394.

Vitale, R.J., G.R. Mussoline, J.C. Petura, and **B.R. James**. 1995. Hexavalent chromium quantification in soils: An effective and reliable procedure. American Environmental Laboratory April, 1995. pp. 1 ff.

James, B.R., J.C. Petura, R.J. Vitale, and G.R. Mussoline. 1995. Hexavalent chromium extraction from soils: A comparison of five methods. Environmental Science and Technology 29:2377-2381.

Elless, M., M.C. Rabenhorst, and **B.R. James**. 1995. Redoximorphic features in soils of the Triassic Culpeper Basin. Soil Science 161:58-69.

Bartlett, R.J., and **B.R. James**. 1995. System for categorizing soil redox status by chemical field testing. Geoderma 68:211-218.

James, B.R. 1995. Conception of an idea: An international center for soil and society. Bulletin of the International Society of Soil Science. 89:65-67.

Hakenkamp, C.C., M.A. Palmer, and **B.R. James**. 1994. Metazoans from a sandy aquifer: Dynamics across a physically and chemically heterogeneous groundwater system. Hydrobiologia 287:195-206.

*Blaylock, M.B., and **B.R. James**. 1994. Redox transformations and plant uptake of selenium resulting from root-soil interactions. Plant and Soil 158:1-12.

James, B.R. 1994. Hexavalent chromium solubility and reduction in alkaline soils enriched with chromite ore processing residue. Journal of Environmental Quality 23:227-233.

Vitale, R.J., G.R. Mussoline, J.C. Petura, and **B.R. James**. 1994. Hexavalent chromium extraction from soils: Evaluation of an alkaline digestion method. Journal of Environmental Quality 23:1249-1256.

*Stahl, R.S., D.S. Fanning, and **B.R. James**. 1993. Goethite and jarosite coprecipitation from ferrous sulfate solutions. Soil Science Society of America Journal. 57:280-282.

*Blaylock, M.J., and **B.R. James**. 1993. Selenite and selenate quantification by hydride generation-atomic absorption spectrometry, ion chromatography, and colorimetry. Journal of Environmental Quality 22:851-857.

James, B.R., and S.A. Aschmann. 1992. Soluble phosphorus in a forest soil Ap horizon amended with municipal wastewater sludge or compost. Communications in Soil Science and Plant Analysis. 23:861-875.

James, B.R., M.C. Rabenhorst, and G.A. Frigon. 1992. Phosphorus sorption by peat and sand amended with iron oxides or steel wool. Water Environment Research. 64:699-705.

Bell, P.F., **B.R. James**, and R.L. Chaney. 1991. Heavy metal extractability in long-term sewage sludge and metal salt-amended soils. Journal of Environmental Quality 20:481-486.

*Kaufman, I.R., and **B.R. James**. 1991. Anthropogenic epipedons in oyster shell middens of Maryland. Soil Science Society of America Journal 55:1191-1193.

*Stahl, R.S., and **B.R. James**. 1991. Zinc sorption by iron oxide-coated sand as a function of pH. Soil Science Society of America Journal 55:1287-1290.

*Stahl, R.S., and **B.R. James**. 1991. Zinc sorption by manganese oxide-coated sand as a function of pH. Soil Science Society of America Journal 55:1291-1294.

*Stahl, R.S., and **B.R. James**. 1991. Zinc sorption by soils as a function of pH. Soil Science Society of America Journal. 55:1592-1597.

James, B.R. and S.J. Riha. 1989. Aluminum leaching by mineral acids in forest soils: I. Nitric-sulfuric acid differences. Soil Science Society of America Journal 53:259-264.

James, B.R. and S.J. Riha. 1989. Aluminum leaching by mineral acids in forest soils: II. Role of the forest floor. Soil Science Society of America Journal 53:264-269.

Lari, M.B., and **B.R. James**. 1989. Heavy metal and organic carbon fractionation in sodium pyrophosphate extracts of tidal marsh soils. Iranian Agricultural Research 8:83-74.

James, B.R. and S.J. Riha. 1987. Forest soil organic horizon acidification: Effects of temperature, time, and solution:soil ratio. Soil Science Society of America Journal 51:458-462.

James, B.R. and S.J. Riha. 1986. pH buffering in forest soil organic horizons: Relevance to acid precipitation. Journal of Environmental Quality 15:229-234.

Riha, S.J., **B.R. James**, G.P. Senesac, and E. Pallant. 1986. Spatial variability of soil pH and organic matter in forest plantations. Soil Science Society of America Journal 50:1347-1352.

James, B.R. and D.R. Bouldin. 1986. Cathodic stripping voltammetric analysis of nanomolar concentrations of labile and total zinc and iron in soil solutions. Communications in Soil Science and Plant Analysis 17:1185-1202.

James, B.R., R.J. Bartlett, and J.F. Amadon. 1985. A root observation and sampling chamber (rhizotron) for pot studies. Plant and Soil 85:291-294.

James, B.R. and R.J. Bartlett. 1984. Plant-soil interactions of chromium. Journal of Environmental Quality 13:67-70.

James, B.R. and R.J. Bartlett. 1984. Nitrification in soil suspensions treated with Cr(III,VI) salts or tannery wastes. Soil Biology and Biochemistry 16:293-295.

James, B.R. and S.J. Riha. 1984. Soluble aluminum in acidified organic horizons of forest soils. Canadian Journal of Soil Science 64:637-646.

James, B.R. and R.J. Bartlett. 1983. Behavior of chromium in soils. V. Fate of organically-complexed Cr (III) added to soil. Journal of Environmental Quality 12:169-172.

James, B.R. and R.J. Bartlett. 1983. Behavior of chromium in soils. VI. Interactions between oxidation-reduction and organic complexation. Journal of Environmental Quality 12:173-176.

James, B.R. and R.J. Bartlett. 1983. Behavior of chromium in soils. VII. Adsorption and reduction of hexavalent forms. Journal of Environmental Quality 12:177-181.

James, B.R., C.J. Clark, and S.J. Riha. 1983. An 8-hydroxyquinoline method for labile and total aluminum in soil extracts. Soil Science Society of America Journal 47:893-897.

Bartlett, R.J. and **B.R. James**. 1980. Studying air-dried, stored soil samples - some pitfalls. Soil Science Society of America Journal 44:721-724.

Bartlett, R.J. and **B.R. James**. 1979. Behavior of chromium in soils: III. Oxidation. Journal of Environmental Quality 8:31-35. (Soil Science Society of America Benchmark Paper)

Extension Publications

Bandel, V.A., **B.R. James**, J.J. Meisinger, and M.D. Woodward. 1991. Nitrogen recommendations for corn using the "nitrate-N" soil test. University of Maryland Fact Sheet 559.

Bandel, V.A., **B.R. James**, and J.J. Meisinger. 1991. Basic principles of soil fertility - I, Plant Nutrients. University of Maryland Fact Sheet 639. pp. 1-4.

Bandel, V.A., **B.R. James**, and J.J. Meisinger. 1991. Basic principles of soil fertility - II, Soil properties. University of Maryland Fact Sheet 640. pp. 1-6.

Bandel, V.A., F.R. Mulford, and **B.R. James**. 1991. Sulfur deficiency in Maryland soils: Its history, characteristics and treatment. University of Maryland Fact Sheet 563. pp.1-6.

Adkins, R., S. Angle, K. Aycock, A. Bandel, H. Brodie, M. Decker, F. Gouin, **B. James**, A. Taylor, and R. Weismiller. 1990. Guidelines for application of digested sewage sludge and composted sewage sludge to agricultural land. Cooperative Extension Service Fact Sheet no. 336. p. 1-4.

Book Reviews

Soils and their environment. 1993. J.J. Hassett and W.L. Banwart. Prentice Hall, Englewood Cliffs, NJ. 424 pp. Journal of Natural Resources and Life Sciences Education. vol.22.

Environmental management in agriculture. European perspectives. 1988. J.R. Park (ed.) 260 pp. Elsevier Publishers, Amsterdam. Geoderma. 1990. 47:185-186.

Talks and Oral Papers Presented*Invited papers*

James, B. R. and S. J. Riha. Soluble aluminum chemistry in forest soils amended with nitric and sulfuric acids. Am. Chem. Soc., Mid-Atlantic Regional Meeting, W. Long Branch, New Jersey. May, 1985.

James, B.R. Electron activity in soils: A key master variable. Soil Sci. Soc. Am. Annual Meeting. Las Vegas, Nevada. October, 1989.

James, B., B. Bagley, and P. Gallagher. Riparian zone vegetation effects on nitrate concentrations in shallow groundwater: Tree species and management differences. Chesapeake Bay Res. Conf., Baltimore, MD, 4-6 December 1990.

James, B.R. The future of soil chemistry in the Northeast: Lessons from colonial New England. Am. Soc. Agron. Northeast Branch. June, 1992.

Blaylock, M.J., and **B.R. James**. Oxidation-reduction chemistry in the rhizosphere: A comparison of anion and cation redox relationships. Soil Sci. Soc. Am. Annual Meeting. Minneapolis, Minnesota. November, 1992.

James, B.R. The uses and misuses by regulatory agencies of the research of Bruce James on the redox chemistry of chromium in soils. Chrome Coalition Mtg, Industrial Health Foundation, Arlington, VA. October, 1992.

Vitale, R., G. Mussoline, J. Petura, and **B. James**. A method evaluation study for the analysis for hexavalent chromium in solid samples using a modified alkaline digestion procedure and colorimetric determination. Ninth Annual Waste Testing and Quality Assurance Symposium (Am. Chem. Soc. and U.S. EPA) Arlington, VA. July, 1993.

James, B. Managing sludge as a nutrient source. National Agricultural Nutrient Management Conf., St. Louis, MO. April, 1993.

James, B., S. Hug, and B. Sulzberger. 1995. Free radical and photochemical reactions in soils: A heuristic review. Soil Sci. Soc. Am. Annual Meeting, St. Louis, MO. November, 1995.

James, B.R. Oxidation-reduction chemistry of chromium: Relevance to the regulation and remediation of contaminated soils. Association for the Environmental Health of Soils. Sixth Ann. Conf. Newport Beach, California. March, 1996

Vitale, R.J., G.R. Mussoline, J.C. Petura, and **B.R. James**. U.S. EPA proposed Cr(VI) soil analytical method: A reliable analytical method for extracting and quantifying Cr(VI) in soils. Association for the Environmental Health of Soils. Sixth Ann. Conf. Newport Beach, California. March, 1996.

James, B.R. High soil chromium and soil health. Soil Science Society of America meetings, Baltimore, Maryland. October, 1998.

James, B.R. Remediation-by-reduction strategies for chromium contaminated soils. Society for Geochemistry and Health, Glasgow, Scotland, September, 2000.

James, B.R. Cleaning a contaminated soil: Investigative soil chemistry for the undergraduate. Northeast Regional Teaching Workshop, Greenbelt, MD. October, 2003.

James, B.R. Behavior of chromium-containing wastes in diverse soils: Learning from a paradox of redox. Eighth International In-Situ and On-Site Bioremediation Symposium, Baltimore, MD. June, 2005.

James, B.R. et al. Interdisciplinary living-learning communities: Pedagogies to actively engage students. Pedagogies of Engagement Conference, Association of American Colleges and Universities, Washington, DC. March, 2005.

James, B.R., and R.J. Vitale. Oxidation of chromium(III) to chromium(VI) in chromite ore processing residue-enriched soils. National Environmental Monitoring Conference, Washington, DC. July, 2005.

James, B.R. Cycling of Civilizations: Ecosystem Challenge and Creative Response in Soil & Water Management by the Anasazi of Southwestern North America. International Union of Soil Science Quadrennial World Congress. Brisbane, Australia., August, 2010.

James, B.R. Sustaining Sustainability Education: Going Beyond Resource Conservation to an Ethics of Care and Tools for Learning. Maryland Association for Environmental and Outdoor Education. April, 2011.

James, B.R., W.E.H. Blum, and C. Dazzi. Bread and Soil in Ancient Rome: A Vision of Abundance and an Ideal of Order Based on Wheat, Grapes, and Olives. World Congress of Soil Science, Jeju, S. Korea. June, 2014.

Volunteered papers

Bartlett, R. and **B. James.** Oxidation of chromium in soils. Am. Soc. Agron. Annual Meetings. Los Angeles, California. Nov. 1977.

Bartlett, R. and **B. James.** Soil insight through dirt analysis; Avoiding pitfalls. Am. Soc. Agron. Annual Meetings. Chicago, Illinois. Dec. 1978.

James, B.R. and R. J. Bartlett. Behavior of chromium in soils: IV. Organic complexing and chromium (III) solubility. Am. Soc. Agron. Annual Meetings. Fort Collins, Colorado. Aug. 1979.

James, B.R. and R. J. Bartlett. Oxidation of insoluble Cr (III) in soils: Tannery wastes. Am. Soc. Agron. Northeast Branch. Orono, Maine. July 1981.

James, B. Forest soil chemistry and acid precipitation. New York State Symp. Atmos. Dep. Ithaca, New York. Jan. 1982.

James, B. R. and S. J. Riha. Effects of mineral acids on solution chemistry of forest soil organic horizons. Am. Soc. Agron. Northeast Branch. Ithaca, New York. June 1982.

- James, B. R.** and S. J. Riha. Effects of nitric and sulfuric acids on solution chemistry of acid forest soils. Acid Rain - The North American Challenge. Soil Conservation Soc. Am. Symp. Burlington, Vermont. Oct. 1982.
- James, B. R.** and S. J. Riha. Effects of nitric and sulfuric acids on solution chemistry of acid forest soils. Am. Soc. Agron. Annual Meetings. Anaheim, California. Dec. 1982.
- James, B. R.** and S. J. Riha. Acid leaching of forest soils: Differences between nitric and sulfuric acids. Am. Soc. Agron. Annual Meetings. Las Vegas, Nevada. Nov. 1984.
- James, B.** In search of the perfect rocketship: Problems of observing and sampling the rhizosphere. Symp. Root-Soil Interactions, Center for Root-Soil Res. Ithaca, New York. Nov. 1984.
- James, B. R.** Acid rain and soils: Nutrients or nemesis for farmers and foresters? Symp. Ecological Agriculture, Ithaca, New York. March 1985.
- James, B. R.** and S. J. Riha. Aluminum leaching at the forest floor-mineral horizon boundary. Intern. Symp. Acidic Precipitation. Muskoka, Ontario, Canada. September 1985.
- Riha, S. J., E. Pallant, and **B. James**. Effects of forest vegetation on spatial variability of soil pH and related chemical properties. Intern. Symp. Acidic Precipitation. Muskoka, Ontario, Canada. September 1985.
- Schindelbeck, R., S. Riha, and **B. James**. Effects of soil pH on honeylocust seedlings. Am. Soc. Agron. Annual Meetings. Chicago, Illinois. December 1985.
- Lari, M.B., **B.R. James**, T.M. Griffin. Trace metal and organic carbon fractionation in Na-pyrophosphate extracts of tidal marsh soils. Northeast Branch, Am. Soc. Agron. Annual Meeting. Morgantown, West Virginia. June, 1988.
- Bell, P.F., **B.R. James**, and R.L. Chaney. Fractionation of metals in sludge-amended soils. Northeast Branch, Am. Soc. Agron. Annual Meeting. Morgantown, West Virginia. June, 1988.
- Kaufman, I.R., and **B. R. James**. Oyster shell midden effects on soil chemical properties. Northeast Branch, Am. Soc. Agron. Annual Meeting. Morgantown, West Virginia. June, 1988.
- Stahl, R. and **B. R. James**. Zinc retention by Mn or Fe oxide coatings in a flow-through system. Am. Soc. Agron. Annual Meeting. Anaheim, California. December, 1988.
- Aschmann, S. and **B. R. James**. Phosphorus mineralization and leaching from compost-amended forest soil columns. Am. Soc. Agron. Annual Meeting. Anaheim, California. December, 1988.
- Taib, M., **B. R. James**, and J.J. Meisinger. Nitrogen and carbon mineralization in moist and dry soil. Am. Soc. Agron. Annual Meeting. Anaheim, California. December, 1988.
- El-Desoky, M., D.S. Fanning, and **B.R. James**. Extractability of heavy metals in acid sulfate soils in Baltimore Harbor dredged material. Am. Soc. Agron. Annual Meeting. Anaheim California. December, 1988.
- James, B.R.**, and B.B. Bagley. Riparian forest management effects on groundwater nitrate concentration. Northeast Branch, Am. Soc. Agron. Annual Meeting. Durham, New Hampshire. July, 1990.
- Weight, D.N., and **B.R. James**. Inorganic nitrogen removal by riparian forest leaf material. Northeast Branch, Am. Soc. Agron. Annual Meeting. Durham, New Hampshire. July, 1990.

- Stahl, R.S., D.S. Fanning, and B.R. James. Oxidation and hydrolysis of ferrous sulfate. Northeast Branch, Am. Soc. Agron. Annual Meeting. Durham, New Hampshire. July, 1990.
- Stahl, R.S., and **B.R. James**. Zinc extractability in B horizon materials from Maryland. Am. Soc. Agron. Annual Meeting. San Antonio, Texas. October, 1990.
- Taib, M., **B.R. James**, J.J. Meisinger, and F.R. Mulford. The impact of tillage and poultry manure on the residual soil nitrogen. Am. Soc. Agron. Annual Meeting. San Antonio, Texas. October, 1990.
- Rabenhorst, M.C., and **B.R. James**. Formation of Fe "sulfide" phases in a Chesapeake Bay tidal marsh soil. Am. Soc. Agron. Annual Meeting. San Antonio, Texas. October, 1990.
- Blaylock, M.J., and **B.R. James**. Oxidation and reduction of selenite by root exudate analogues. Am. Soc. Agron. Annual Meeting. San Antonio, Texas. October, 1990.
- Hakenkamp, C., M. Palmer, and **B. James**. 1991. Groundwater trophic interactions with emphasis on meiofaunal distribution patterns and the effect of enrichment by nitrate and dissolved organic carbon. World Wildlife Fund Workshop on Surface and Groundwater Invertebrates of European Alluvial Floodplains. Rastatt, Germany. Feb. 1991.
- Hakenkamp, C., M. Palmer, and **B. James**. 1991. Spatial and temporal variation in groundwater meiofauna distribution and the effect of nutrient enrichment on meiofauna and bacteria abundances. North Am. Benthological Soc. Annual Meeting. Santa Fe, New Mexico. May, 1991.
- Blaylock, M.J., and **B.R. James**. 1991. Increased bioavailability of selenium by root exudate analogues in combination with manganese oxides in soil. Graduate Research Interaction Day, University of Maryland. April, 1991.
- Blaylock, M.B., and **B.R. James**. Selenium speciation and uptake resulting from root-soil interactions. Am. Soc. Agron. Annual Meetings. Denver, Colorado. October, 1991.
- James, B.R.**, and D.J. Sammons. Crops, soils, and civilization: A new interdisciplinary undergraduate course. Am. Soc. Agron. Annual Meetings. Denver, Colorado. October, 1991.
- Kaufman, I.R., and **B.R. James**. Organic matter fractionation of anthropic epipedons from Maryland oyster shell middens. Am. Soc. Agron. Annual Meetings. Denver, Colorado. October, 1991.
- Taib, M.A., and **B.R. James**. Nitrogen mineralization in the soil: The effects of tillage, nitrogen source, and method of application. Am. Soc. Agron. Annual Meetings. Denver, Colorado. October, 1991.
- Yoo, M.S., and **B.R. James**. Heavy metal solubility in flooded soils amended with soluble organic compounds. Am. Soc. Agron. Annual Meetings. Denver, Colorado. October, 1991.
- Gallagher, P.H., and **B.R. James**. Riparian zone vegetation effects on nitrate attenuation in groundwater. Am. Soc. Agron. Annual Meetings. Denver, Colorado. October, 1991.
- Rabenhorst, M.C., and **B.R. James**. Biogeochemistry of sulfidization in man-made wetlands: Treatment of acid mine drainage. Soil Sci. Soc. Am. Annual Meetings. Minneapolis, Minnesota. November, 1992.
- James, B.R.**, and R.J. Bartlett. Sensitivity analysis of estimates of pe-pH relationships in soils using thermodynamic and analytical approaches. Soil Sci. Soc. Am. Annual Meetings. Minneapolis, Minnesota. November, 1992.

- Bartlett, R.J., and **B.R. James**. Potential sunlight powered redox in soils and waters. Soil Sci. Soc. Am. Annual Meetings. Minneapolis, Minnesota. November, 1992.
- Petura, J.C., **B.R. James**, R.J. Vitale, and G.R. Mussoline. Interpreting ancillary parameters and matrix spikes for Cr+6 in soils. 1993 Superfund XIV Conf., Washington, DC. November, 1993.
- James, B.R.**, G.R. Mussoline, J.C. Petura, and R. Vitale. Innovative quality control approach to quantifying hexavalent chromium in soils. Pittsburgh Conference, Chicago, IL. March, 1994.
- Vitale, R.J., J. Petura, G. Mussoline, and **B. James**. Hexavalent chromium methodology for soils: Results of extraction comparison research and multi-laboratory holding time study. Tenth Annual Waste Testing and Quality Assurance Symposium, Washington, DC. July, 1994.
- James, B.** 1995. Poetry, pedagogy, and pe. Soil Sci. Soc. Am. Annual Meetings. St. Louis, MO. November, 1995.
- Begoon, L.R., and **B.R. James**. Assessing the redox status of soils through thermodynamic approaches using colorimetric methods. Soil Sci. Soc. Am. Annual Meetings. Anaheim, CA October, 1997.
- Chernikov, S., and **B.R. James**. Chromate reduction by humic substances in soils and simple systems. Soil Sci. Soc. Am. Annual Meetings, Anaheim, CA. October, 1997.
- Rock, M.L., **B.R. James**, and G.R. Helz. Chromium(III) oxidation in soils by hydrogen peroxide. Soil Sci. Soc. Am. Annual Meetings, Anaheim, CA. October, 1997.
- Zdimal, K.L., R.L. Chaney, J.S. Angle, **B.R. James**, and R.J. Rosenberg. 2000. Effect of Ca/Mg ratio in soil on ability of *Berkheya coddii*, *Alyssum corsicum* and sunflower to accumulate soil nickel. Soil Sci. Am. Annual Meetings, Minneapolis, MN. November, 2000.
- Rabenhorst, M.C., R.R. Blank, and **B.R. James**. Reduction of iron oxides in wetland soils. World Congress of Soil Science Congress, Philadelphia, PA. July, 2006.
- Rabenhorst, M.C., W.D. Hively, and **B.R. James**. Measurement of redox potentials in soils: How is it done? What does it mean? Soil Sci. Soc. Am. Ann. Mtgs., New Orleans, LA. November, 2007.
- Brose, D. and **B. James**. Toward a better understanding of the linkages between the microbiological and chemical reduction pathways of hexavalent chromium. Soil Sci. Soc. Am. Ann. Mtgs., New Orleans, LA. November, 2007.
- James, B.R.** Ecosystem Challenge and Creative Human Response to Soil Salinity: Role in the Rise and Possible Decline of Ancient Mesopotamian Civilization. EUROSOIL Congress, Vienna, Austria. August, 2008.
- Schwartz, C.W., A.G. Wylie, A.P. Davis, and **B.R. James**. Column expansion testing of chromium tailings subgrade fills. International Foundation Congress and Equipment Exposition. Buena Vista, FL. To be given March, 2009.
- Ruppert D.A., Needelman B.A., Momen B., Rabenhorst M.C., **James B.R.** and Kleinman P. 2011. Phosphorus Release From Ditch Mesocosms: The Effects of Pedology and Hydrology. ASA-CSSA-SSSA International Annual Meetings, San Antonio, TX. Annual Meeting Abstract.
- Fanning, D. S., Rabenhorst, M. C., Wagner, D. P., Lowerry, D. and **James, B. R.** Rethinking sulfidization and the role of hydrogen sulfide. pp. 44-46, *In* Österholm, Peter, Yli-Halla, Markku and Eden, Peter (eds.), Geological Survey of Finland Guide 56, Vaasa, Finland. July, 2012.

Fisher, K.A. and **B.R. James**. Urea Hydrolysis in Soils Along a Toposequence: Influences of Chemical Conditions. Soil Science Society of America National Meetings, Tampa, FL. November, 2013. *Awarded First Prize in Soil Chemistry Graduate Student Poster Contest.*

DeSarle, C.R. and **B.R. James**. Total Hexavalent Chromium Quantification in High Organic Carbon Soils: Minimizing Reduction during Extraction and Analysis. Soil Science Society of America National Meetings, Tampa, FL, November, 2013.

Langlois, C. and **B.R. James**. Chromium Chemistry at Soil Oxidation-Reduction Interfaces Defined by Iron and Manganese Oxides. Soil Science Society of America National Meetings, Tampa, FL. November, 2013. *Awarded Third Prize in Soil Chemistry Graduate Student Poster Contest.*

James, B. R., and W.E.H. Blum. Soils as Interfacial, Low Entropy Systems With Resilience Based on Maximum Entropy Production. World Congress of Soil Science, Jeju, S. Korea. June, 2014. **Awarded “Best Poster of the Congress.”**

Fisher, K.A., S.A. Yarwood, and **B.R. James**. Ureolytic Microbial Community Composition in Maryland Soils: A Missing Link in Understanding Landscape-Scale Nitrogen Movement to Surface Waters? World Congress of Soil Science, Jeju, S. Korea. June, 2014.

Mehrtadi, M., A.P. Davis, and **B.R. James**. Organic nitrogen adsorption from urban stormwater. 11th Urban Watershed Management Symposium . World Environmental & Water Resources Congress. Portland, OR, June, 2014.

Invited seminars

State of Maine Department of Environmental Protection (Augusta, Maine). 1981. Chromium oxidation in soils amended with tannery wastes.

Williams College (Williamstown, Massachusetts). 1981. Heavy metal chemistry of soils.
University of Delaware. (Newark, Delaware). 1986. Chromium chemistry of soils.

Center for Estuarine and Environmental Studies. (Horn Point Labs, Univ. of Maryland). 1986. Aluminum chemistry and forest soil acidification.

University of Maryland . Agronomy Department Faculty Seminar. (College Park, Maryland). 1989. Soil chemistry program description.

University of Agriculture. (Prague, Czechoslovakia). 1991. Chemistry of chromium and aluminum in soils.

University of Agriculture. (Brno, Czechoslovakia). 1991. Soil chemistry of chromium.

University of Maryland. Agronomy Department Seminar (College Park, Maryland). 1991. Possibilities for Czech-American research collaboration in soil chemistry.

Duke University. (Durham, NC). 1994. Ethics of transferring electrons in soils: The case of chromium.

Cornell University. (Ithaca, NY). 1994. Ethics of transferring electrons in soils: The case of chromium.

Swiss Federal Institute for Environmental Science and Technology. (Dübendorf, Switzerland). 1994. The soil chemistry of chromium: Implications for human nutrition and environmental quality.

Swiss Federal Institute for Environmental Science and Technology. (Dübendorf, Switzerland). 1995. Purposeful disturbance of soil-water-plant systems and the rise of human civilizations: Relevant ecological and historical lessons?

University of Maryland, Chemistry Department. 1995. Free radical and photochemical reactions in soils.

University of Delaware, Department of Plant and Soil Sciences. 1997. The ethics of transferring electrons in soils: The case of chromium.

Massachusetts Institute of Technology. Department of Civil and Environmental Engineering. 1997. The ethics of transferring electrons in soils: The case of chromium.

Louisiana State University. Wetland Biogeochemistry Institute. 1998. Ecological disturbance and stability.

Rutgers University. Department of Environmental Sciences. 1999. Soil use and human civilizations.

American Association for the Advancement of Science Fellowship Program. 1999. Soil use and human civilizations.

College of Wooster, Ohio. 2001. Soil chemistry in the undergraduate geology curriculum.

Pennsylvania Agronomic Education Society. 2002. Phosphorus and potassium in soils.

Swiss Federal Institute for Aquatic Science and Technology (EAWAG) Zürich. 2014. Entropy in Soils.

University of Tuebingen, Institute of Geography, Germany. 2014. Two seminars on soil & civilization, plus a workshop on transdisciplinary research. Week-long visit.

Smithsonian Institution Museum of Natural History, Department of Mineral Science. 2015. Exploring the Redox Paradox of Chromium in Soils.

Original Patents

U.S. Patent No. 5,951,457. (Sept. 14, 1999) and 6,221,002. (April 24, 2001) Method to reduce hexavalent chromium in soils, sediments, industrial waste and other contaminated materials using ascorbic acid.

Contracts and Grants

Principal Investigator (Career total: \$1,127,977)

U. S. Environmental Protection Agency: Predicting Chemical Changes in Soil Solutions of Unmanaged Soils Subject to Acid Precipitation. 2/15/83 - 2/15/85. \$109,905. (Cornell University)

U. S. Department of Energy: Acid Leaching Processes in Forest Soils. Cooperative research with Virginia Polytechnic Institute and State University and with University of Vermont. 8/1/83 - 7/31/86. \$174,171. (Cornell University)

U. S. Forest Service (Consortium for Environmental Forestry Studies): Effect of Soil Chemical Properties on Root Growth of Tree Seedlings. 6/84-5/86. \$25,000. (Cornell University)

Maryland Department of Agriculture: Control of Nitrate Discharge from Agricultural Land by the Management of Riparian Vegetation. 7/86-6/91. \$215,720. (Co-PI: Alan W. Taylor)

Graduate Research Board, University of Maryland: Heavy Metal Mobility in Agricultural Soils. 7/87-6/88. \$2,700.

U. S. Department of Agriculture. Regional project NE-159. Fate of Metals and Nutrients from Land Application of Wastes and Manures. (1987-1991).

Tennessee Valley Authority: Assessment of a Nitrate Soil Test to Predict Nitrogen Fertilizer Needs in Maryland Agricultural Soils. 7/88-6/91. \$33,000. (Co-PI's: David Sammons and John Meisinger)

International Programs Office, University of Maryland: Cooperative Research Development with Cairo University. 1/88-4/88. \$2000.

City of Salisbury, Wicomico County, and Maryland Department of the Environment. Agricultural Benefits of Sewage Sludge Utilization on Agricultural Land of the Lower Eastern Shore of Maryland. 7/89-6/94. \$215,160. (Co-PI's: Ronald Mulford and Allan Bandel).

Maryland Agricultural Experiment Station. Meiofauna Population Dynamics at the Surface Water-Groundwater Interface: Effects of Riparian Zone Soil and Water Chemistry. 7/89-6/90. \$20,000. (Co-PI: Margaret Palmer).

Maryland Department of Natural Resources. Riparian Forest Vegetation Management: Control of Nitrogen Discharge into the Chesapeake Bay from Groundwater. 11/90-9/91. \$20,000.

Graduate Research Board, College of Agriculture, and Maryland Agricultural Experiment Station. Enhanced Analytical Capabilities for Anions and Organic Acids by Ion Chromatography: Equipment Upgrade. 1/90. \$11,200.

Maryland Agricultural Experiment Station. Microbial, Protozoan, and Meiofaunal Ecology at the Surface Water-Groundwater Interface: Effects of Soil and Water Chemistry. 7/90-6/91. \$27,000. (Co-PI: Margaret Palmer).

Maryland Water Resources Research Center. Kinetics of Nitrate Removal from Groundwater by Soils and Vegetation of Riparian Buffer Strips. 5/91-4/92. \$17,413. (Co-PI: Phyllis Gallagher).

International Travel Fund, University of Maryland. Development of Research on Heavy Metals in Soils and Groundwater of Czechoslovakia. 5/91-6/91. \$1,100.

Maryland Agricultural Experiment Station. Kinetics of Nitrate Removal from Groundwater by Soils and Vegetation of Riparian Buffer Strips. 7/93-6/94. \$22,000.

Maryland Agricultural Experiment Station. Analytical Equipment Grant. 7/93. \$18,200.

Graduate Research Board. Toward a realistic understanding and accurate measurement of electron activity in soils. Semester research award in support of sabbatical leave at Swiss Federal Institute of Technology, Zürich, 1994-1995. University of Maryland Graduate School.

U.S. Geological Survey. Chromium oxidation-reduction chemistry in soils: Relevance to chromate contamination of groundwater of the Northeast United States. 10/96-9/98. \$177,308.

University of Maryland. International Center for Soil and Society planning grant. \$10,000. 1996-1997.

University of Maryland, Office of Undergraduate Programs. Problem-based learning travel grant. \$1,100. 2003.

Research and Scholarship Award. Cycling of civilizations: Advances, declines, and the resilience of complex human societies based on soil-water management and ecosystem stability. Semester research award in conjunction with sabbatical leave and in support of research at the University of Natural Resources and Life Sciences, Vienna, Austria. Spring semester, 2013. University of Maryland Graduate School.

College of Agriculture and Natural Resources, University of Maryland. Seed support for post-doctoral research associate in collaboration with the Museum of Natural History, Smithsonian Institution. \$25,000. 2015.

Co-Investigator (Career total: \$1,494,501)

U.S. Department of Agriculture (CSRS). Low Input Sustainable Agriculture Program. Winter Cover Crops for Corn Production in the Northeast: N Balance and Soil Moisture Status. 7/89-6/91. \$105,000. (PI: Morris Decker).

Maryland Water Resources Research Center. Lowering of Soluble Iron and Acidity in Acid Mine Drainage through Sulfidization in Man-Made Wetlands. 5/91-4/92. \$19,940. (PI: Martin Rabenhorst).

Governor's Research Council, Maryland Department of the Environment. Agricultural Practices and Ground Water - Surface Water Quality Interactions. 7/91-6/93. \$309,806. (PI's: William Magette and Adel Shirmohammadi)

Maryland Water Resources Research Center. Acid Mine Drainage Remediation via Sulfidization in Wetlands. 5/92-4/93. \$17,085. (PI: Martin Rabenhorst).

National Science Foundation. Groundwater Chemistry and Hydrology Traineeship Program. 1/95-12/99. \$537,500. (PI: George Helz).

Maryland Port Authority. Chromate tailings remediation: Engineering and chemistry. \$100,000. 1996-1997. (PI: Charles Schwartz)

U.S. Agency for International Development. Development of Environmental Science Curricula in Russia. 1998-1999. (PI: Raymond Miller; cooperation with Purdue University).

Smithsonian Institution, Museum of African Art; and University of Maryland. Excavation, Accumulation, and Preservation in the African Landscape. 2011-2012 (PIs: Shannen Hill and Karen Milbourne) \$57,170.

Department of Environmental Resources, Prince George's County, Maryland. Stormwater Nitrogen and Phosphorus Removal to Meet TMDLs. 2012 - 2015. (PI: Allen Davis) \$632,647.

Smithsonian Institution, Museum of Natural History, Department of Mineral Sciences. Linking the Biogeochemical Cycling of Manganese and Chromium in Polluted Soil Environments. 2012. \$5,000. (PI: Cara Santelli).

National Science Foundation. Linking geochemistry and geomicrobiology in selenium-contaminated soils. Post-doctoral fellowship. Smithsonian Institution, Museum of Natural History, Department of Mineral Sciences. 2015 - 2017. \$174,000. (PI: Carla Rosenfeld).

Fellowships, Prizes, and Awards

Paul Poffenberger Award for Excellence in Teaching and Advising. 2015. College of Agriculture and Natural Resources, University of Maryland

Outstanding Faculty Educator. 2015. College of Agriculture and Natural Resources Student Council, University of Maryland

Outstanding Academic Advisor Award. 2014. College of Agriculture and Natural Resources, University of Maryland

Research and Scholarship Award. 2013. Graduate School, University of Maryland.

Best Professor Award, University of Maryland. 2012. Readers' Choice Award. The Diamondback.

Excellence in Teaching Award, Dept. of Environ. Sci. & Technol., University of Maryland. 2009.

Distinguished Scholar-Teacher, University of Maryland. 2004-2005.

Research Award, Northeast Branch of the American Society of Agronomy. 1997.

Teaching Excellence Award, College of Agriculture and Natural Resources Alumni Association. 1996.

Lilly Foundation-Center for Teaching Excellence Fellowship. University of Maryland. 1993-1994.

Junior Faculty Award of Excellence, Colleges of Agriculture and Life Sciences, University of Maryland. 1991.

Teaching Award, Northeast Branch of American Society of Agronomy. 1990.

Editorships*Editorial position*

Associate Editor (Soil Chemistry Div.), Soil Science Society of America Journal, 1994-1997.

Manuscript reviewer

Soil Science Society of America Journal
 Journal of Environmental Quality
 Environmental Science and Technology
 Soil Science
 Reclamation and Revegetation Research
 Agronomy Journal
 Soil Physical Chemistry
 Geoderma
 American Chemical Society Monograph Series
 Environmental Pollution
 Geochimica Cosmochimica Acta
 Chesapeake Research Consortium Publications
 Academic Press
 Water, Air, and Soil Pollution
 Human and Ecological Risk Assessment
 Journal of Soil and Sediment Contamination

Critical Reviews in Environmental Science and Technology
Wiley-Interscience
Water Environment Research
Accounts of Chemical Research
Analytical Chemistry
Journal of Environmental Monitoring
Science
Geomicrobiology
Analytica Chimica Acta
Proceedings of the National Academy of Sciences
Geochemical Transactions
Prentice-Hall
Science of the Total Environment
Environmental Engineering Science

Invited Public Talks

Empire State Soil Fertility Association. (Waterloo, New York). 1982. Acid precipitation effects on soil fertility.

Laval University. (Quebec City, Quebec). 1982. Aluminum chemistry and acid precipitation in forest soils.

Agway College Agronomy Conference. (Syracuse, New York). 1982. Acid precipitation and soil fertility.

Extension Agent Week. (Ithaca, New York). 1982. Acid precipitation effects on soil fertility.

International Paper Company. (Tuxedo Park, New York). 1982. Aluminum chemistry and forest soils.

Agricultural Research Service. (State College, Pennsylvania) 1982. Soil chemistry and acid precipitation.

Empire State Forest Products Association. (Norwich, New York). 1983. Acid rain and forest soils.

North Carroll High School. (Hampstead, Maryland). 1987. Sewage sludge disposal on land.

Dorchester County Environmental Education Committee. (Cambridge, Maryland). 1987. Groundwater pollution and the Chesapeake Bay.

Central Maryland Fruit Growers' Roundtable. (Cockeysville, Maryland). 1987. Nitrogen cycling and the Chesapeake Bay.

Groundwater Symposium for County Agents (New Windsor, Maryland). 1987. Nitrate soil testing.

Sewage Sludge Symposium for County Agents. (College Park, Maryland). 1987. Heavy metals and organics in sewage sludge.

Soil and Water Conservation Society of America. (Annapolis, Maryland). 1988. Nitrate attenuation by riparian zones.

Fieldman's Shortcourse on Nutrients. (Caroline County, Maryland). 1989. Soil fertility and chemistry principles.

Garden Club. (Bowie, Maryland). 1989. Soil science for gardeners

- Mid-Atlantic Association of Professional Soil Scientists. (Annapolis, Maryland). 1989. Redox chemistry of wetlands.
- Nutrient Management Consultants' Training. (New Windsor, Maryland). 1989. Nitrate soil testing theory and practice.
- Agronomy Update. (Glen Burnie, Maryland). 1990. Phosphorus chemistry of soils.
- Mid-Shore Growers Meeting. (Preston, Maryland). 1990. Nitrogen chemistry of soils.
- Chesapeake Bay Program Forestry Conference. (Annapolis, Maryland). 1990. Riparian forest effects on nitrate in groundwater.
- Chesapeake Bay Watershed Foresters. Smithsonian Biological Research Center. (Edgewater, Maryland). 1990. Riparian forest management and water quality.
- State Water Quality Advisory Committee. (Annapolis, Maryland). 1991. Sewage sludge and water quality.
- Cooperative Forestry National Watershed Meeting. (Annapolis, Maryland). 1991. Riparian zone forests.
- Vansville Farmers Club. (Upper Marlboro, Maryland). 1991. Riparian forest management and water quality.
- Maryland State Soil Conservation Committee. (Annapolis, Maryland). 1991. Riparian vegetation management effects on groundwater quality.
- Mid-Shore Growers Meeting. (Preston, MD). 1993. Liming issues of agricultural soils.
- Carroll County Planning Commission. (Westminster, MD). 1993. Riparian zone protection issues.
- Maryland Department of the Environment. (Baltimore, MD). 1993. Sewage sludge research in Maryland.
- Washington County Board of Education. (Hagerstown, MD). 1999. Shaping the Synergism of Silicon and Socrates.
- Center for Talented Youth. 2001. Johns Hopkins Univ. Soil, Environment, and You.
- Mid-Atlantic Crop Management School. (Ocean City, MD). 2001. Long-term effects of climate change on agriculture.
- Queen Anne School. 1998. (Upper Marlboro, MD). Shaping the synergy of silicon and Socrates.
- Maryland Association for Environmental and Outdoor Education. 2011. (College Park, MD) Sustaining Sustainable Education: Going Beyond Resource Education to an Ethics of Care and Tools for Learning.
- Universität für Bodenkultur 2013. (Wien, Österreich). Cycling of civilizations: Ecosystem challenge and creative response in soil and water management by the Anasazi of Southwestern North America (University of Natural Resources and Life Sciences, Vienna, Austria – public lecture invited by the Rector)
- Bowie Environmental Committee. 2014 Panel member to discuss film, *Symphony of the Soil.*, Bowie, MD

Teaching, Mentoring, and Advising

Courses taught (~16-23 semester course credits and ~1400 student-credit hours per academic year)

Introduction to Sustainability (AGNR 300; spring semester, 2012)

A new anchor course for the Sustainability Studies Minor; with a focus on environmental responsibility, economic health, social equity, and cultural vitality dimensions of caring for future generations. (3 credits, enrollment: 127)

Soil Chemistry (ENST 421; spring semester)

A lecture and laboratory course introducing students to the principles of soil and colloid chemistry, with applications to agriculture and environmental sciences (4 credits, enrollment: 12-16)

Advanced Soil Chemistry (ENST 722; fall semester 2006, 2011)

Lectures and discussion on current and controversial topics in soil chemistry, with the goal of applying the principles to environmental quality, environmental engineering, and water quality issues (3 credits, average enrollment: 6-10)

Soil Biochemistry and Microbial Ecology (ENST422 - 622; fall semester 2005-2010)

An advanced undergraduate and graduate-level, dual-level course focusing on applications of biochemistry and microbiology to soils; designed as a sequel to an introductory soil chemistry course (3 credits, enrollment 25)

Crops, Soils, and Civilization (ENST 440; spring semester)

A course to introduce students from agricultural and non-agricultural programs to the roles and effects of soil conservation, soil-water management, and crop domestication on the rise and fall of human civilizations (3 credits, enrollment: 43). (CORE Human Cultural Diversity offering)

Environmental Science (ENSP 101; fall semester)

Introductory survey course for Environmental Science and Policy majors and College Park Scholars in Environmental Studies; CORE non-lab Physical Science offering (3 credits, enrollment 175)

Capstone in Environmental Science and Policy (ENSP 400; fall and spring semesters)

An integrative, multi-disciplinary seminar course for ENSP majors focusing on creative solutions to environmental concerns and problems (3 credits, enrollment 45 per semester)

Colloquium in Environmental Studies (Current Issues) (CPSP 118E; fall semester, 2008)

Introduction to current environmental issues for College Park Scholars in Environmental Studies (1 credit, 60 students)

Internship in Environmental Science and Policy (ENSP 386; fall and spring semester)

Practical research, volunteer, and work experience related to environmental science and policy; supervision of undergraduate enrollees (3-6 credits, average enrollment 3 students per semester)

Course and Curriculum Development.

Sustainability Studies Minor. Author of successful, approved minor proposal. December, 2011.

Introduction to Sustainability. Anchor course for Sustainability Studies minor. Spring semester, 2012

Soil Biochemistry and Microbial Ecology (ENST 422-622) 2005

Crops, Soils, and Civilization (ENST 440) 1989

Ethics in Environmental Science (HONR 128T) 1993

Capstone in Environmental Science and Policy (ENSP 400) 1999

Environmental Ethics (CPSP 218E) 1999

Environmental History (CPSP 118E) 1999

Current Affairs in Environmental Studies (CPSP 118E; Fall and Spring) 1999

Guest lectures in university courses

University of Maryland, Agricultural and Resource Economics Dept. 2006-2010. Annual lecture on soil and civilization for course on sustainable development

University of Natural Resources and Life Sciences, Vienna, Austria. 2013. Two lectures on soils and civilization in courses on soils and food security, and soils and climate change.

University of Maryland, Robert H. Smith School of Business. 2010-2011; **2014.** Lectures on climate change for a graduate course related to sustainability.

University of Maryland, Dept. of Environmental Science and Technology. 2008-2010. Annual lecture on soil microbiology for ENST course on soil and water pollution.

University of Maryland, School of Architecture, Sustainability course. 2011, 2014, 2015

Advising: Other Than Research Direction.

Undergraduate research advising

Tharon Prim	B.S.	('98)	Geology (co-advisor)
Dara Zycherman	B.S.	('00)	Undergraduate research program
Renard Sexton	B.A.	('08)	Government & Politics Honors thesis

Honors-in-ENSP thesis committees (ex-officio member, 1997-present)

Jayni Shah
 Khushi Desai
 Cynthia Chang
 Rebecca Blank
 Anne McGuirk
 Amalia Pleake-Tamm
 Pauline Dachman
 Vera Jaffe
 Amanda Garzio
 Zachary Hadzick
 Hanna Poffenbarger
 Clara Kollm
 Patrick McLaughlin
 Whitney Beck

Jason Wong
 Sabra Bushey
 Neda Movahed
 Sara Mack
 Sze Yu
 Leah Schliefer

Graduate studies committee service

Fekadu Folle	Ph.D.	('92)	Soil Fertility
Gerardo Pascual	M.S.	('88)	Soil Science
Mushtaq Khan	Ph.D.	('90)	Crop Science
Paul Bell	Ph.D.	('90)	Soil Science
Mohammed El-Desoky	Ph.D.	('89)	Soil Mineralogy
Mark Elless	Ph.D.	('92)	Pedology
Thomas Griffin	M.S.	('88)	Pedology
Khiery Ismail	Ph.D.	('87)	Agric. Eng.
Offiah Offiah	Ph.D.	('90)	Soil Mineralogy
Vince Pantalone	M.S.	('91)	Crop Breeding
Lisa Wehrheim	M.S.	('91)	Soil Fertility
Grace Madariaga	M.S.	('91)	Soil Microbiol.
Andrew Clark	Ph.D.	('93)	Crop Science
Teferi Tsegaye	Ph.D.	('94)	Soil Physics
Margaret Condron	M.S.	('90)	Pedology
Christine Hakenkamp	M.S.	('91)	Zoology
Catherine Ku	Ph.D.	('94)	Horticulture
James Irons	Ph.D.	('93)	Soil Science
Sally Brown	M.S.	('93)	Soil Science
Elizabeth Heger	M.S.	('94)	Soil Microbiol.
Ahmed Hussein	Ph.D.	('96)	Pedology
Karen Lowell	M.S.	('94)	Soil Fertility
Carol Kendall	Ph.D.	('93)	Geology
Mark Magness	M.S.	('95)	Pedology
Sara Tangren	Ph.D.	('01)	Pedology
Brit Erikson	Ph.D.	('98)	Chemistry
Yvonne Sallade	M.S.	('96)	Soil fertility (Univ. Delaware)
Fatima Abugideiri	Ph.D.	('93)	Chemistry
Lauren Bartlett	M.S.	('94)	Environ. Engr.
	Ph.D.	('97)	(Duke Univ.)
Thomas Fu	Ph.D.	('98)	Chemistry
Brad Davidson	M.S.	('94)	Chemistry
Bhakti Petagari	Ph.D.	('00)	Chemistry
Jörg Klausen	Ph.D.	('95)	ETH, Zürich (Environ.Chem.)
Ignaz Bürge	Ph.D.	('99)	ETH, Zürich (Environ.Chem.)
Olaf Haag	Dipl.	('95)	ETH, Zürich (Environ. Chem.)
David Rees	M.S.	('96)	Chemistry
Jan Danis	Ph.D.	('00)	Chemistry
Kristen Hughes	M.S.	('98)	MEES
Elizabeth Resek	M.S.	('97)	Chemistry
Michael O'Connell	Ph.D.	('97)	Geology
Shalini Jayasundera	Ph.D.	('00)	Environ.Engr.
Juan Mata	Ph.D.	('00)	Environ.Engr.
Terry Valladares	M.S.	('98)	Pedology
Jae Kyu Yang	Ph.D.	('00)	Environ. Engr.
Lori Keith	M.S.	('98)	Geology
Ruxandra Floriou	Ph.D.		Environ. Engr.
Anthony Pierpoint	Ph.D.	('99)	Environ. Engr.

Shelley Sperry	Ph.D.	('99)	Environ. History
James Harmon	Ph.D.	('01)	Geography
Trudy Thomas-Smith	Ph.D.	('01)	Chemistry
John White	M.S.	('02)	Soil fertility
Trent Vorlicek	Ph.D.	('02)	Chemistry
Nick Baer	Ph.D.	('04)	MEES
Olivia Devereux	M.S.	('06)	Pedology
Rosalynd Orr	M.S.		Pedology
Adam Gray	M.S.	('10)	Pedology
Rebecca Blank	M.S.	('08)	Pedology
Deyang Huang	Ph.D.	('10)	Environ. Engr.
Danielle Balduff	Ph.D.	('07)	Pedology
Lan Zhang	Ph.D.		Environ. Engr.
Phil Zurheide	M.S.	('08)	Pedology
Natasha Andrade	Ph.D.	('13)	Environ. Engr.
Ryan Kerrigan	Ph.D.	('11)	Geology
Hunho Kim	Ph.D.	('10)	Environ. Engr.
Bora Cetin	Ph.D.	('12)	Environ. Engr.
Barry Reno	Ph.D.	('10)	Geology
Alan Leslie	Ph.D.	('14)	Entomology
Jacob Hosen	Ph.D.		Entomology
Fred Witarsa	Ph.D.		Ecol. Engr.
Annie Rossi	Ph.D.	('14)	Pedology
Dana Armstrong	M.S.	('14)	Env. Engr.
Tania Biswas	Ph.D.	('14)	Soil science
Jiayu Liu	Ph.D.	('14)	Environ. Engr.
David Ruppert	Ph.D.	('12)	Pedology
Jessica Belue Buckley	Ph.D.	('14)	Counseling & Personnel Sves.
Margaret Guthrie	M.S.		Soil fertility
Jennifer Himmelstein	Ph.D.	('13)	Plant Pathology
Inbal Becker-Reshef	Ph.D.	('12)	Geography
Qi Yan	Ph.D.		Environ. Engr.
Mehrdad Mohtadi	Ph.D.		Environ. Engr.
Christine Prasse	Ph.D.		Soil microbiology
Enes Ozkok	Ph.D.		Environ. Engr.
Annie Yarberr	Ph.D.		Ecol. Engr.
Asli Yalcin	Ph.D.		Environ. Engr.
Holly Bowen	M.S.		Soil microbiology
Joshua Walker	Ph.D.	('15)	Environ. History
Marybeth Shea	Ph.D.		MEES

Other advising activities

Clean Energy for UMD, University of Maryland student group. (2007-present)

Environmental Science and Policy Program, University of Maryland
New undergraduate majors ('97-present)

Agronomy Student Club. University of Maryland.
Co-advisor, 1986-87. Advisor, 1987-88.

Potomac Valley Rescue Group. University of Maryland student chapter
Advisor, 2003.

Egyptian Soil Scientists (1988)
Said Mahmud, University of Cairo.
Edward Abdo Awadalla, University of Cairo.

Public School Students and Activities

Christine Yim
 Heather Hamm
 Raquel Genuino
 Mark Little
 Katie Martin
 Nora Schneider
 Queen Anne School Science Fair Judge
 Bowie High School Science Fair Judge
 Rockledge Elementary School Science Fair Judge
 Annie Rabenhorst (Research Practicum Advisor)
 Zachary Vincent (Research Practicum Advisor)
 Michael Van der Mause (Research Practicum)

Advising: Research Direction.

Supervision of graduate student research

David Weight	M.S.	('90)	Soil chemistry
Ian Kaufman	M.S.	('90)	Soil chemistry
Bruce Bagley	M.S.	('92)	Soil chemistry
Janine Baratta **	M.S.	('96)	Soil science
Vijay Vulava ***	M.S.	('94)	Environ. Engr.
Leslie Typrin	M.S.	('98)	Soil chemistry
Ian Yesilonis	M.S.	('01)	Soil chemistry
Dominic Brose	M.S.	('08)	Soil chemistry
Christina Langlois	M.S.	('14)	Soil chemistry
Catherine DeSarle	M.S.	('14)	Soil chemistry
Randal Stahl*	Ph.D.	('90)	Soil chemistry
Michael Blaylock	Ph.D.	('92)	Soil chemistry
Mwaffak Taib	Ph.D.	('94)	Soil chemistry
Munsuk Yoo	Ph.D.	('94)	Soil chemistry
Phyllis Gallagher	Ph.D.	('96)	Soil chemistry
Andrew Levin	Ph.D.	('94)	Soil chemistry
Sergei Chernikov	Ph.D.	('98)	Soil chemistry
Melanie Rock [□]	Ph.D.	('99)	Chemistry
Dominic Brose	Ph.D.	('12)	Soil chemistry
Kristin Fisher	Ph.D.	('14)	Soil chemistry

*Outstanding Graduate Student. American Society of Agronomy, Northeast Branch

[□]Co-advisor George Helz

**Co-advisor Claude McKee

***Co-advisor Alba Torrents

SERVICE**Professional***Organization memberships*

Phi Kappa Phi (Honorary Research Society)
 Sigma Xi (Honorary Research Society; full member)
 American Association for the Advancement of Science
 American Society of Agronomy
 Soil Science Society of America

International Union of Soil Sciences
Ecological Society of America
American Society for Environmental History

Offices and committee memberships held in professional organizations.

Technical Committee/Northeast regional research project: "Fate of Metals and Nutrients from Land Application of Wastes and Manures" (NE-159); Secretary, 1989-92; Chair, 1990-92

Northeast Branch, American Society of Agronomy. Secretary-Treasurer, 1989-92

Soil Science Society of America.

Rhizosphere working group, vice-chair ('93), chair-elect ('94)
Cation exchange capacity review committee ('93)
M.L. Jackson Award Committee ('97-'99)

American Geological Institute. Steering Committee for project on "Career Pathways in the Geosciences."
(representative of the Soil Science Society of America and chair of SSSA committee for this effort)

International Society of Soil Science

Standing Committee on Education in Soil Science ('96-present)

Queen Anne School, Upper Marlboro, MD

Education Committee ('96-'00); chair ('98-'00)
Board of the School ('97-'00); secretary ('97-'98)

Maryland Department of Education. Core learning goal development committee for environmental science at the high school level ('97-'98).

Council of Engineering and Scientific Specialty Boards. Accrediting organization for professional environmental certification programs. (2002-present). Public Member of the Board of Directors ('02-'06)

Chair of paper sessions:

Northeast Branch, American Society of Agronomy
1988 West Virginia University
1989 University of Vermont
1997 University of Maryland

Chesapeake Bay Nonpoint Source Pollution Conference, Williamsburg, Virginia. Workshop moderator.
1990.

Graduate Research Interaction Day, University of Maryland. Paper judge. 1991

Soil Science Society of America
1992 Minneapolis, MN
1997 Anaheim, CA
2007 New Orleans, LA

18th European Conference of the Society for Environmental Geochemistry and Health, 2000

20th World Congress of Soil Science, C4.5-2 session moderator, Soils and Human Culture, S. Korea,
2014

Reviewing activities for agencies and universities.

U.S. Department of Agriculture. Competitive research grant proposal reviewer. 1985

U.S. Environmental Protection Agency. Environmental Research Program. Grant proposal reviewer. 1986, 1988.

National Acid Precipitation Assessment Program (NAPAP). National research program reviewer, New Orleans, Louisiana. 1987.

U.S. Agency for International Development. Research grant proposal reviewer. 1987; 1990; spring, 1991 (panel chair); fall, 1991; 1992, 1993.

Maine Agricultural Experiment Station. Hatch project proposal reviewer. 1989.

University of Maine Center for Environmental Studies. Proposal reviewer. 1989.

Vermont Water Resources Research Center. Proposal reviewer. 1989, 1990.

New Hampshire Agricultural Experiment Station. Hatch project proposal reviewer. 1989.

Northeast Region Sustainable Agriculture Program. Technical Committee (1992-94)

National Research Initiative (USDA). Grant proposal reviewer. 1996.

National Science Foundation. Grant proposal reviewer. 1997, 1998, 1999.

Swiss National Science Foundation. Grant proposal reviewer. 2002

University of South Florida, Saint Petersburg, 2002. Review of environmental science programs with recommendations for future direction. Review of graduate program, 2011.

Swiss Federal Institute of Technology, Zürich. Grant proposal reviewer. 2004, 2013

Franklin & Marshall College. Tenure package. 2008

University of South Florida, St. Petersburg. Tenure & promotion package. 2008 & 2013

University of South Florida, St. Petersburg. Graduate program external reviewer. 2011

International activities

Exploration of possibilities for Czech-American research collaboration in areas of soil chemistry and environmental quality. Six-week trip to Czechoslovakia in May-June, 1991.

Development and organization of an International Center for Soil and Society, a multi-disciplinary center for studies of the soil from the perspectives of the physical sciences, social sciences, and humanities (1995-1997)

Collaboration with aquatic chemists in the area of oxidation-reduction processes and photochemistry of natural waters and soils. Swiss Federal Institute for Environmental Science and Technology, Zürich.

Exploration of teaching of an interdisciplinary environmental sustainability course with National Taiwan University (2009-2011)

Research on crops, soils, and civilization at University of Natural Resources and Life Sciences, Vienna, Austria (2012-2013 sabbatical leave)

Exploration and development of research collaboration on soils & human culture, Eberhard Karls University, Tuebingen, Germany (2014 ff)

Campus Service Activities

Departmental

Department of Natural Resource Sciences and Landscape Architecture

Greenhouse ('86-'88)
Recruitment ('86)
Social ('86-'93; chair, '92-'93))
Graduate Programs ('87)
Long-Range Planning (chair, '91)
Search Committee chair for Soil Biochemistry position (1995)
Building Renovation ('96) chair
Undergraduate Programs ('00-'04)
Merit Pay Committee ('05-'06)
Area of Excellence Leader for Environmental Quality ('03-'05)

Department of Environmental Science and Technology

Faculty Advisory Committee to the Chair ('07)
Analytical Laboratory Development Committee (chair, '07-present)
Analytical Laboratory Director Search Committee Chair, '11)
Undergraduate Program Committee ('07 - present)
Faculty Review Committee ('11-'12)
Search Committee for Cluster Hires ('14)

College

Interviewing Committee for Dean of Graduate College, University of Vermont (1978)

Advisory Committee to Dean of Graduate College, University of Vermont (1980-81)

Life Safety Committee (Agronomy Department Representative) College of Agriculture and Life Sciences, Cornell University ('82-'85)

Maryland Agricultural Experiment Station

Sludge and Compost Advisory Committee ('89-present)

Maryland Cooperative Extension Service

Soil Testing Laboratory Planning Committee ('91)

College of Agriculture and Natural Resources, University of Maryland

Computer Committee, ('91)
Long-Range Planning Committee for Agronomy, Horticulture, and Agricultural Engineering Departments ('91-'92)
Junior Faculty Excellence Award Committee (Chair, '92; '93)
Reorganization Committee for College of Agriculture ('93)
Classified Staff Excellence Award Committee ('93)
College Honors Program Review Committee Chair ('95-present)
Riparian Zone Advisory Committee ('97)
Review Committee for Associate Dean for Resident Education ('06)
Search Committee Chair, Nutrition and Food Science Chair ('14)
Awards Committee ('14-'15)

University

School of Public Affairs, University of Maryland

Search Committee, Environmental Policy position ('93-'94)

Graduate School, University of Maryland

Graduate Council ('92-'95)

Graduate Faculty Status Review Comm., chair ('94)

University of Maryland Senate

Task Force on Graduate Education and Administration ('92-'93)

CORE Program Review Committee ('01)

Middle States Review Committee on Interdisciplinary Programs ('01)

University of Maryland System

Environmental Programs Coordinating Committee ('97)

University Honors Program

CORE course review committee ('95-'97)

College of Behavioral and Social Sciences.

Freeman Foundation grant for East Asian Studies, Study Abroad Committee ('02-'03)

Office of the Vice President for Administrative Affairs

Climate Action Plan Workgroup ('07-'09)

Sustainability Council ('09-'11)

Office of the President

Faculty and Staff Awards Selection Committee ('01-'02; chair '03)

Distinguished Scholar-Teacher Selection Committee ('05, '10)

Office of the Dean for Undergraduate Studies

College Park Seminar Committee ('90)

CORE Interdisciplinary Course Evaluation Committee ('92-'94)

Francis Scott Key Scholarship Selection Committee ('93)

College Park Scholars Executive Director Search Committee ('02)

CORE Human Cultural Diversity Committee ('03-)

Kirwan Undergraduate Teaching Award Committee ('06,'08 chair)

Office of Vice President for Academic Affairs and Provost

Search Committee for Dean of School of Architecture, Planning and Preservation ('10)

Sustainability Minor Development Committee ('11)

Office of Sustainability

Chesapeake Project coordinator; faculty workshops on sustainability in teaching ('09 -'12, '14)

Office of Community Engagement, Division of Administration & Finance

Good Neighbor Day committee member to coordinate sustainability workshops with College Park ('14)