



POLLUTION PREVENTION
FACULTY AND PROGRAMS:
**BIOLOGICAL AND
ENVIRONMENTAL SCIENCES**



299 DR. CHARLES CLANTON

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Dr. Charles Clanton, PE, teaches two classes and conducts research in waste management, including livestock manure, food processing wastes, on-site sewage treatment, and land application of municipal effluents and sludges. Teaches *Engineering Principles of Soil-Water-Plants Systems*, a sophomore/junior level course, and *Agriculture Waste Management Engineering*, a Graduate/Senior level course in which students operate a mock consulting firm in which they receive letters, requests, and waste samples from fictitious clients; test samples; analyze the results; and formulate the design or recommendation. The final lab is a mock hearing.

300 DR. ROBERT L. MYERS

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Teaches undergraduate interdisciplinary courses on environmental science and agricultural science that include components on pollution. An emphasis is placed on taking a systems approach to problem-solving. Also participates in the University of Missouri Environmental Affairs Council, which looks at environmental practices of the University.

301 DR. NARAIN PERSAUD

Associate Professor, Crop & Soil Environmental Sciences Department
Virginia Polytechnic Institute & State University
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Teaches senior level courses in *Soil and Groundwater Pollution* and *Soil Physics*. Also teaches junior level course in *Physics of Pollution*. Dr. Persaud is involved in the development of environmental science curricula and faculty enhancement for teaching environmental courses.

302 DR. DAVID PIMENTEL

College of Agriculture and Life Sciences
Cornell University
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Teaches and researches in environmental policy, looking specifically at reducing the use of pesticides. Assess costs of using pesticides—both environmental and monetary to farmers. Students are mostly graduate and senior level in agriculture and energy. Developed *Sustainable Agriculture* compendia for the NPPC, which was released in Summer 1996.

303 DR. L. MARK RISSE

Agriculture Pollution Prevention Specialist
 University of Georgia
 Extension Engineering Program
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Conducts an Extension and applied research program in all areas of agricultural pollution prevention in conjunction with the Pollution Prevention Assistance Division of the Georgia Department of Natural Resources. Maintains extensive database and library of papers and publications dealing with agricultural pollution prevention. Supplies technical assistance and on-site pollution prevention assessments for commercial growers, farmers, and agricultural processing industries. Proactive approaches include (1) applied research, (2) exhibits at production meetings, (3) industry workshops, fairs, and agricultural expositions, (4) development and hosting of symposia and workshops, and (5) production of educational publications dealing with agricultural pollution prevention issues.

**304 DR. ROBERT W. GENSEMER**

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As an environmental toxicologist, Dr. Gensemer's role in the Center for Energy and Environmental Studies (CEES) is teaching and research related to the impacts of human activities on biological species, communities, and ecosystems. Environmental toxicology is a relatively new and rapidly growing academic discipline that combines the science of ecology with its application to understanding the effects of xenobiotic chemicals released to the environment. His teaching responsibilities include a core course for the CEES environmental science major, *Environmental Ecology*, and is currently developing a new advanced undergraduate/graduate level course on *Environmental Toxicology*. Research interests involve the influences of toxic chemicals on the health of aquatic ecosystems, using aquatic plants as experimental systems. More specifically, Dr. Gensemer's research focuses on the specific physiological responses of aquatic plants to environmental stressors, and how these physiological processes are quantitatively and mechanically related to the responses of whole plant populations and communities. For more information, visit WWW site at <http://cees-server.bu.edu/>.

305 LIC. RUBEN LIJTEROFF

Faculty Member, Departments of Chemistry, Biochemistry and Pharmacy
National University of San Luis **Phone:** (54) 652 23789 x128
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San Luis, ARGENTINA **E-mail:** rlijte@unsl.edu.ar

Lic. Lijteroff is on the faculty of the Departments of Chemistry, Biochemistry and Pharmacy at the National University of San Luis. He is currently working on his doctoral thesis in Biology, where he is investigating the subject: Diagnosis and Urban Environmental Management in the city of San Luis, Argentina. The theme of his investigation is urban water pollution, air and use of soil and their subsequent application to a program of urban environmental management as a means of preventing environmental pollution in the city of San Luis. In addition to his work at the University, Lic. Lijteroff develops publications and conferences on environmental topics for professionals, politicians, and high school students.



306 MR. ANDREW P. DUNCAN

Doctoral Candidate and Adjunct Instructor, School of Natural Resources and Environment
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Ann Arbor, MI 48109-1115 **E-mail:** aduncan@umich.edu

Interested in pollution prevention and resource conservation from a social science perspective. Developed NPPC Compendia on Environmental Studies and Pollution Prevention. Taught *Greening the Maize and Blue*, an undergraduate seminar at the School of Natural Resources and Environment. The course gave students a classroom introduction to prevention-oriented environmental management, and the opportunity to implement environmental stewardship projects in conjunction with partners from around the University of Michigan. Mr. Duncan had incorporated pollution prevention modules and greening the campus projects in other courses. Research interests in socio-behavioral aspects of the prevention concept—factors that promote source reduction behaviors, the distinguishing characteristics of prevention activities, and life cycle thinking. For more information on Greening the Maize and Blue, visit WWW site at <http://www.umich.edu/~aduncan/gmbindex.html>.

307 MR. NICK KELLER

Director, Campus Ecology Program
National Wildlife Program **Phone:** (703) 790-4317
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Campus Ecology, a program of the National Wildlife Federation, offers a number of resources to the higher education community. Four organizers located regionally across the country work with campuses one-on-one and distribute the following: Project Resource packets on 16 environmental topics, campus environmental audit materials and case studies, and the book *Ecodemia*, which documents successful efforts to reduce pollution, improve energy efficiency, and manage campuses based on their environmental impacts. Campus Ecology's Toxic & Hazardous Waste, Chlorine-Dioxin, and Great Lakes programs provide proactive solutions to pollution. Campus Ecology exists to establish environmentally sound practices on college campuses by promoting leadership and action within the campus community. For more information, visit WWW site at <http://www.nwf.org/nwf/prog/campus.html>.

308 MR. KURT TEICHERT

Environmental Coordinator, Brown University
 Brown is Green Program
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Brown is Green (BIG) is an environmental education and advocacy program established at Brown University in 1990 that links student research and education efforts with administrative offices, to implement programs that reduce the environmental impacts of operations. As the Environmental Coordinator for Brown, Mr. Teichert works directly with faculty and staff at the University to identify areas of high resource consumption and reduce the institutional barriers to conservation. Mr. Teichert supervises student interns working on specific research projects as well as oversees a course on practicing environmental stewardship (ES 41). Interns address a specific type of resource consumption, identify how individual choices and behavior affect the aggregate impact of the University community, and attempt through information and education, to encourage more responsible behavior. Intern projects include energy conservation and pollution reduction related to lighting, water consumption, septic disposal, and solid waste. Past ES 41 research projects include the study of student refrigerator use in dorm rooms, florescent desk lamps, low flow showerheads in dorm showers, and low maintenance landscaping on campus. For more information, visit WWW site at http://www.brown.edu/Departments/Brown_Is_Green/.

**COASTAL POLLUTION PREVENTION****309 DR. JUAN G. GONZÁLEZ**

Associate Director, Resource Center for Science and Engineering
 Professor, Marine Sciences
 University of Puerto Rico
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Conducts workshops on marine tropical ecosystems to teachers and their students. The workshop consists of a three-day experience where teachers and students are provided with hands-on experience on the subjects of: ecosystem structure, ecosystem community and species composition, population dynamics, population effects to anthropogenic factors. A portion of the workshop is devoted to understanding how pollution affects tropical ecosystems and how these problems can be prevented or mitigated. Also teaches *Biology of Plankton* and *Introduction to Oceanography*.

310 DR. DAVID LETSON

Research Assistant Professor, School of Marine and Atmospheric Science

University of Miami

Division of Marine Affairs

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Dr. Letson's research interests include environmental economics, fisheries regulation, and ecosystem management. Dr. Letson is developing a compendium on *Coastal Pollution Prevention* for the National Pollution Prevention Center with Dr. Daniel Suman (see record number 312). This compenium will include case studies conducted by students in a graduate research and writing semiar taught though the Division of Marine Affairs and Policy. These case studies will illustrate related principles of law, resource economics, and marine policy.

311 MR. FRANK LIBBY

Consultant, U.S. Coast Guard

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Conducts pollution prevention training programs for employees of the US Coast Guard. Develops course curriculum for Coast Guard. Set up federal government program for model facilities. As a result of this project, Mr. Libby won the 1995 and 1996 White House "Closing the Circle" Award for Environmental Excellence in Pollution Prevention.

312 DR. DANIEL O. SUMAN

Associate Professor, School of Marine and Atmospheric Science

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Dr. Suman has been conducting research on the adaptability of the fishing sectors in Chile, Peru and Ecuador to ENSO climate variability, as well as continuing his investigations on coastal wetland management, and environmental legislation in Central America, South America, and the Caribbean. He is researching user group conflicts in the establishment of marine harvest refugia in the Florida Keys. Dr. Suman is developing a compendium on *Coastal Pollution Prevention* for the National Pollution Prevention Center with Dr. David Letson (see record number 310). This compendium will include case studies conducted by students in a graduate research and writing seminar taught though the Division of Marine Affairs and Policy. These case studies will illustrate related principles of law, resource economics, and marine policy.



ENVIRONMENTAL STUDIES

313 DR. TERENCE BALL

Social Sciences
University of Minnesota
Minneapolis, MN 55455

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Teaches a project-oriented course dealing with P2 ethics, which encourages paying attention to and critically examining the consequences of our actions on the environment. Students are required to submit a written report or a project video tape for the course.

314 DR. JOHN H. BRADLEY

Chairman, School of Business Administration
St. Thomas University
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Currently working on a course in *Environmental Economics* to be included in a minor in Environmental Studies.

315 DR. WILLIAM BUDD

Program in Environmental Sciences and Regional Planning
Washington State University
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Has developed an introductory P2 course and an advanced course in environmental auditing. These courses are exclusively devoted to P2. Pollution prevention is also incorporated into courses in hazardous waste management and environmental engineering. The curricula are being supported by funds from EPA and the Washington State Department of Ecology.

316 DR. JOHN E. CARROLL

Dept. of Natural Resources
University of New Hampshire
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Teaches both Graduate and Undergraduate courses on (1) international environmental ethics and values as applied to pollution, environment, toxics, natural resources, agriculture, and energy; (2) the application of ecological thought to pollution control; and (3) the role of religious/spiritual values in pollution control.

317 DR. NOELLETTE CONWAY-SCHEMPF

Director, Green Design Initiative
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Directs Carnegie Mellon University's Green Design Initiative—a program to develop environmentally-conscious products and processes. The Initiative involves (1) research aimed at providing industry with P2 tools and technologies, and (2) educational programs aimed at instilling an environmental awareness among university graduates, regardless of major, by incorporating environmental modules and case studies into required core courses.

318 DR. NANCY COPPOLA

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Member of a faculty team developing a P2 curriculum initiative under a grant from EPA to research, write, and implement a multi-disciplinary textbook across a technical curriculum. The team's book, Pollution Prevention from a Humanities and Social Science Perspective, is a task oriented casebook that examines P2 from a philosophical, ethical, aesthetic, social, cultural, political, and economic perspective. Currently refining this work for eventual distribution outside NJIT.

319 MR. J. DAVID EAGAN

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Each Fall semester, 1991 through 1995, the capstone seminar in the Environmental Studies Certificate Program has focused on environmental issues affecting the University of Wisconsin—Madison. Students working in teams design research projects on current problems relating to the University's use of resources, environmental impact, and natural history. Projects are done in collaboration with staff and administration clients who work with students to ensure that outcomes directly benefit the university. Student projects are action-oriented. Their aim is to complete a small win for campus stewardship over the semester. Copies of all student reports (over 200 to date) are on reserve in the Environmental Studies Library and are available as a resource for the entire campus. Some of the projects have helped to contribute to waste reduction and P2. Recently, for example, student projects led to (1) a brochure on non-point pollution for the 4,200 residents in Eagle Heights, a student/family housing area, and (2) a switch to recycled paper in self-serve copiers in a campus library. Co-edited The Campus and Environmental Responsibility with David W. Orr (record number 328) of Oberlin College, a book of case studies on campus-based environmental initiatives.

320 DR. STEVEN GRUNDY

Coordinator, Environmental Programs
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Royal Roads University offers undergraduate and graduate degrees in Environmental Science with a focus on pollution prevention. The University is developing its own P2 strategy and is offering a P2 training institute next year. Many of the faculty at Royal Roads are leading advocates of P2 training. Dr. Grundy serves on the provincial P2 steering committee. The library at Royal Roads has one of the best P2 collections in North America.

321 DR. DENISE GUERIN

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 University of Minnesota
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Teaches course with Becky Yust (record number 336) entitled *The Introduction to the Designed Environment* to 200 students each year, which focuses on the interaction of the human with the social, natural, and designed environments. The roles of professional designers and consumers of design are investigated as they affect decisions relating to daily life, pollution prevention, and life cycle analysis. Consequences of these decisions are explored in relation to the human ecosystem. P2 is further explored through field trips to landfills and recycling centers as well as through student research papers.

322 DR. A. L. HAMMETT

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 Virginia Polytechnic Institute & State University
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Teaches *World Forestry*, an undergraduate course focused on issues related to forestry and forest products, and *Wood Industry Management*, an undergraduate and graduate course on the forest industry. Conducts research in nontimber forest products and values and supervises natural resource graduate students and their research projects in Nepal. From May 1992 to July 1995 served as Chief of Party (Team Leader) and Senior Advisor for the Institute of Forestry Project, Pokhara, Nepal where he directed USAID funded project to develop Nepal's two campus Institute of Forestry (IOF); advised on curriculum development, short- and long-term training, and campus improvements; helped develop in-service training capability; facilitated links with funding agencies and other universities; advised Dean and administration on policy, institutional development and sustainability. For more information, visit WWW site at <http://www.vtwood.forprod.vt.edu/>.

323 DR. CHARLES KULPA

Director, Center for Bioengineering and Pollution Control

Professor of Microbiology

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Teaches a Graduate environmental science course. Graduate research in the following areas: studies on the biodegradation of aromatic compounds in various types of bioreactors; degradation of ethers added as oxygenates to gasoline; biodegradation of TNT; application of PRC and RT-PCR to bioremediation and pollution prevention and control systems. Studies using sequencing batch reactors, sequencing batch biofilm reactors and CSTRs. Seminar programs, student exchanges, postdoctoral training and visiting scholar programs aimed at developing innovative research in pollution control and prevention.

324 DR. XIANNUAN LIN

Director of Graduate Studies, Energy and Environmental Studies Program

Boston University

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The Energy and Environmental Studies Program offers two BA degrees and three MA degrees in Energy and Environmental Studies. Dr. Lin specializes in Urban/Regional Economics, Energy/Environmental Policy and Management, and Environmental/Resource Accounting. His current research focuses on the relationship between consumption pattern, production technology, and energy demand and on innovative strategies to link environmental protection with economic development. Author of upcoming book China's Energy Strategy: Economic Structure, Technological Choices, and Energy Consumption. (Praeger Publishers). For more information on the Energy and Environmental Studies program, visit WWW site at <http://cees-server.bu.edu/>.

325 DR. DIANA LIVERMAN

Director, Latin American Area Center

University of Arizona

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Is the Director of the Latin American Studies Program at the University of Arizona. The program is interdisciplinary, but it has a strong focus on environmental issues in Latin America, especially Mexico and Brazil. For more information on the program, visit WWW site at <http://w3.arizona.edu/~laac/>. Teaches a graduate seminar on *Latin American Environmental Policy* and a freshman general education course called *People and the Environment*.

326 DR. ORIE L. LOUCKS

Ohio Eminent Scholar in Applied Ecosystem Studies and Professor of Zoology

Chairperson, Miami University

Sustainability Project

Miami University

Department of Zoology

Oxford, OH 45056

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Developing a course and textbook entitled *Sustainability Perspectives in Business and Resources*, covering principles and measurements in the assessment of benign production and stewardship technologies (including waste reduction, pollution prevention, etc.); for an audience of business and science majors in their senior year, or for graduate students. The Miami University Sustainability Project conducts workshops, seminars, and other activities under the following paradigm: "Sustainability requires that business and resource use be conducted in ways that meet the needs of the enterprise and its stakeholders today, while protecting, sustaining and enhancing human resources and the environment tomorrow."

327 MR. TODD MacFADDEN

Montana Pollution Prevention Program

Montana State University

Cooperative Extension Service

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Completed an eight-lesson educational guide for the Native American Community Colleges entitled *Pollution Prevention and Cultural Preservation in Native American Communities*. This toolkit was developed with the guidance of Native American educators specifically for use in Tribal colleges. As a self-guided and self-contained Tribal college instructional module this tool kit includes: Instructor's Educational Guide containing eight lesson plans, Student Guide, Instructional Transparencies, Student Worksheets, and Tests and Evaluations. This module is designed to be used alone as a new course of study or to complement an existing natural resources curriculum. Mr. MacFadden is also interested in integrating concepts from Native American culture with pollution prevention themes.

328 DR. DAVID W. ORR

Professor and Chair, Environmental Studies Program

Oberlin College

Oberlin, OH 44074

Phone: (216) 775-8312**Fax:** (216) 775-8124

Chairs the Environmental Studies Program at Oberlin College. Interest in ecological design as it pertains to architecture, energy systems, and agriculture. Author of *Ecological Literacy: Education and the Transition to the Postmodern World* (State University of New York Press, 1992).

329 DR. MARILYN RAPHAEL

Geography Department
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Teaches a freshman course, *Relationship With the Environment*, that addresses questions such as why pollution exists and how climatic conditions can escalate the effects of pollutants locally. Also teaches *Environmental Impact Analysis*, a hands-on experimental course in which students complete a P2 related group project. Both of the courses are offered twice a year and class enrollment usually exceeds 50 students. Research interests include global climate and how it may be affected by low level greenhouse gases.

330 DR. RICHARD A. ROTH

Assistant Professor, Department of Geography
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Discusses concepts of pollution prevention in both *Introduction to Environmental Studies* and *Environmental Regulations*, two courses offered by the Geography Department at Radford.

331 DR. JAMES N. SEIBER

Sierra Pacific Professor of Environmental Sciences and Engineering
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Sciences and Engineering
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Graduate curricula are offered in atmospheric sciences, ecology/evolution/conservation biology, environmental engineering, hydrologic sciences, environmental sciences and health. Included is coursework/research dealing with pollution in air, water, soil, and biota and the prevention and remediation of pollution.

332 DR. VAL SMITH

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The Environmental Studies Program provides an interdisciplinary undergraduate major for students desiring a fundamental knowledge of the human environment, the dimensions of human impact on the environment, and the holistic approaches to solving problems resulting from this impact. The human environment

includes all facets of human activity affecting the environment, such as philosophical and ethical issues, environmental resource use and misuses, populations biology, and the chemistry of the atmosphere. The goals of the Environmental Studies program are twofold: (1) to provide a holistic view of the environment, one in which the synergistic nature of perturbations, natural and anthropogenic, can be understood; and (2) to provide the technical skills for active participation in an environmental career.

333 DR. JOEL TARR

Professor of Urban and Environmental History and Policy
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Department of History
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Teaches courses which center on critical issues in American environmental history. Courses involve discussions of urban and industrial metabolism over time and the history of wastes generation and disposal. Discusses technological and policy options and the evolution of pollution control legislation. Dr. Tarr also researches on the historical evolution of environmental pollution, especially in an urban context.

334 DR. LEIF I. THURESSON

Professor, Department of Environmental Science and Technology
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The Department of Environmental Science and Technology at Linköping University offers courses on *Environmental Science, Environmental Technology, Environmental Measurement Technology, Environmental Impact Assessment, Life Cycle Assessment, Ecodesign, Technical Environmental Chemistry, and Environmental Management*. Dr. Thuresson conducts research on the following topics: (1) optimization of biological processes in forest industry; (2) material flow in a sustainable society; and (3) time perspective on hazardous compounds flow in the technosphere and biosphere. For more information, visit WWW site at <http://www.ifm.liu.se/Envtech/>.

335 DR. ALISA B. WICKLIFF

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University of North Carolina at Charlotte
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Teaches a lab in geography and earth sciences with some focus on pollution prevention. Program includes lectures, workshops and seminars. Also participates in teleconferences with regard to environmental issues.

336 DR. BECKY YUST

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Teaches course with Denise Guerin (record number 321) entitled *Introduction to the Designed Environment* to 200 students each year, which focuses on the interaction of the human with the social, natural, and designed environments. The roles of professional designers and consumers of design are investigated as they affect decisions relating to daily life, pollution prevention, and life cycle analysis. Consequences of these decisions are explored in relation to the human ecosystem. P2 is further explored through field trips to landfills and recycling centers as well as through student research papers.

337 DR. EDWARD N. ZIEGLER

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Is the Director of the Environmental Science Program for undergraduates (B.S. in Environmental Science). Involved in laboratory and research development. Also interested in process design/chemical engineering and pollution prevention.

**PUBLIC HEALTH****338 DR. DAN BOATRIGHT**

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University of Oklahoma
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Oklahoma City, OK 73190

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Teaches and promotes waste management in short educational programs for health students and professionals. Would like to expand educational efforts (from risk analysis and waste management) to include some P2 concepts. Works with a variety of health related industries on waste minimization and pollution prevention.

339 DR. L. DONALD DUKE

Assistant Professor, Environmental Science and Engineering Program
University of California—Los Angeles
School of Public Health
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General scholarly interests include: environmental engineering assessment of origin, transport, fate, and

effects of pollutants on environmental systems, especially toxic pollutants originating with industrial activities and pollutants conveyed in urban storm water runoff; and analysis of effectiveness of environmental control technologies, policies, and regulations. Specific research interests include: (1) industrial pollution prevention for toxic pollutants, including pollutants in storm water, hazardous wastes, and wastewater; and (2) storm water and urban runoff pollution control, including assessments of impacts and methods for control of pollutants in runoff from industrial facilities. Also involved in the development and evaluation of policies, regulations, and regional programs for industrial pollution prevention and control of pollutants conveyed in urban runoff. Additional work includes post-project assessment of impacts on environmental systems.

340 DR. ANNA HARDING

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Teaches and conducts research in area of environmental health—including courses in environmental science, environmental health, pollution prevention, water sampling and analysis, and environmental risk communication. Emphasis in P2 is general, as students who take the course are from various disciplines, including public health, engineering, chemistry, life sciences, and liberal arts. Works on an interdisciplinary team of scientists to provide technical assistance to community groups whose neighborhoods have been contaminated by hazardous waste.

341 DR. PREMLATA MENON

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Teaches *Hazardous Materials* to undergraduate students and *Hazardous Materials Management and Environmental Determinants of Health* to graduate students. Co-teaches *Air Pollution, Toxics and Control* to graduate students.

342 DR. HARA P. MISRA

Professor, College of Veterinary Medicine
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Teaches *Environmental Health Toxicology* to undergraduates. Conducts research on molecular basis of metal toxicity and genotoxicity and role of free radicals on the health effects caused by environmental pollutants.



WASTE MANAGEMENT

343 MR. PHILLIP S. BERRY

Principal, Pollution Prevention Management Co.
Instructor, Oregon State University Extension
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Is a part-time Faculty member at Mt. Hood Community College and an Instructor at Oregon State University Extension. Developed and has taught, each year since 1992 a 4 quarter hour community college level course entitled *Pollution Prevention*. This course, taught at Mt. Hood Community College, is part of Oregon's only environmental, undergraduate, certificate/AS degree program. Recently developed and taught *Pollution Prevention and Waste Minimization*. This 2 quarter hour graduate extension engineering course is now an elective in Oregon State University's Graduate Environmental Engineering Certificate Program. As a full-time consultant, accepting only pollution prevention, waste reduction and process efficiency work, Mr. Berry has developed an extensive series of training sessions and workshop modules related to these subjects.

344 MR. BILLY D. BRIGHT

Coordinator, Environmental Programs
USAF School of Aerospace Medicine
Bioenvironmental Engineering Dept.
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Teaches college accredited Environmental and Industrial Health courses to Department of Defense personnel. The *Pollution Prevention Tools, Techniques and Technologies* course offers students specialized experience in waste minimization, recycling, P2 technologies, opportunity assessments and case studies on the application of technologies.

345 DR. JAMES D. ENGLEHARDT

Assistant Professor, Department of Civil and Architectural Engineering
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Pollution prevention is included in the graduate course *Solid and Hazardous Waste*. Research includes economic benefit-risk modeling for environmentally conscious manufacturing and design, and subjective risk assessment modeling for evaluation of oil spill prevention alternatives.

346 DR. CYNTHIA FRIDGEN

Resources Development
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Natural Resources Building.
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Runs an educational outreach program on handling hazardous materials. Focuses on risk perception and subsequent behavioral response. Provides assistance to scientists and communication risk information to local publics who are dealing with sites of contamination.

347 DR. ERNESTO GUTIERREZ-MIRAVETE

Chairman and Associate Professor, Department of Metallurgy
Hartford Graduate Center
275 Windsor Street
Hartford, CT 06120

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The Hartford Graduate Center offers a Graduate Certificate Program in Pollution and Waste Prevention in Manufacturing. Through this certificate program, Dr. Gutierrez-Miravete has taught *Pollution and Waste from Manufacturing*, *Clean Technologies in Metal Processing*, *Pollution Free Plastics and Ceramics Processing*, and *Topics in Pollution Prevention and Hazardous Waste Minimization*.

348 MS. ELLEN HARRISON

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Center for the Environment
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The Cornell Waste Management Institute promotes waste reduction education and research within the Cornell Center for the Environment by encouraging joint research and outreach proposals with non-center members. The Institute is active in public information dissemination and education and works with area businesses to reduce waste. The Institute has developed short courses on solid waste reduction, presently including P2 concepts. Recent projects include developing a source reduction tool kit for municipalities, a *Waste Prevention Tools at Work* manual and video, and a *Smart Shopping* tool kit for educating consumers. For more information on people involved with the Waste Management Institute, see record number 111 (Schuler).

349 DR. ROY HARTMAN

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Offers interdisciplinary Undergraduate courses in waste management, life cycle design, and waste reduction technology. Works with area businesses in evaluating their production programs. Believes in early training in science in order to understand environmental issues. Interested in the development of environmentally friendly or substituted goods and goods manufactured from recycled materials; the challenge is developing a market for these goods through incentives. Also doing research on developing economically viable products using modest scale, modest cost technologies. Using discarded paper, metals, plastic and glass as stock. The goal is to provide improved employment opportunities for moderately skilled workers in small and rural communities.

350 DR. TIM JONES

Department of Anthropology
University of Arizona
Archaeology Subgroup
Building 30
Tucson, AZ 85721

Phone: (602) 621-6299
Fax: (602) 621-9608

Research and teaching on garbage analysis and landfills. Courses taught in the past include topics such as garbage data analysis and life cycle analysis of commodities and products.

351 DR. FRAN McMICHAEL

Director, Center for Solid Waste Management
Carnegie Mellon University
Department of Civil and
Environmental Engineering
Schenley Park
Pittsburgh, PA 15206

Phone: (412) 268-2948
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E-mail: fm2a@andrew.cmu.edu

Director of Carnegie Mellon's Center for Solid Waste Management. Teaching and research focus on solid waste management, particularly battery recycling and waste management. Currently working on a research project entitled *Product Design for the Environment*. This project applies concurrent engineering concepts to products and processes to mitigate environmental impacts over life cycle and develops methodologies and design advisors for process engineering such as size reduction, landfilling, and combustion and products such as automobiles, computers, consumer durables and electronics.

352 MR. JEFF SEADON

UNITEC Institute of Technology
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Auckland, NEW ZEALAND

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Fax: (+649) 815-4326
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Teaches *Waste Minimization*, a course offered in the Bachelor of Technology (Environment) degree program. In this course, students conduct waste minimization and pollution prevention research projects in association with city councils and local industry.

353 DR. R. L. SWANSON

Director, Waste Reduction and Management Institute
State University of New York at Stony Brook
Marine Sciences Research Center
Stony Brook, NY 11794-5000

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The Waste Reduction and Management Institute and the School of Professional Development and Continuing Education have developed a State Approved Graduate Certificate Program in Waste Management. The program's focus is on individuals seeking professional preparation for management positions requiring knowledge that integrates environmental processes with the consequences of anthropogenic impacts. The 18 credit program offers the following classes: *Waste Management Issues*, *Environmental Law*, *History of Waste Management*, *Emerging Technology in Solid Waste Management*, *Environmental Engineering*, *Solid Waste Recycling: Processes and Issues*, *Groundwater Problems: Hydrology, Environment & Public Health*, *Marine Pollution*, *Economics of Waste Management*, *Introduction to Risk Assessment and Risk Management*, *Diagnosis of Environmental Disputes*, and *Waste Management: Systems and Principles*. All are 3 credit courses.

354 DR. DOUG WILSON

Archaeological Investigations Northwest Inc.
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Portland, OR 97233

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Currently developing a landfill excavation and exhibit concept with the Oregon Museum of Science and Industry (OMSI) which will integrate past (historical) information on reuse and recycling in the Portland metropolitan area with data excavated from local area landfills. Purpose is to educate the public on landfill composition and the impacts of reuse/recycling programs in Oregon over the past four decades.

355 DR. WAYNE E. WOLDT

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Conducts research and technology transfer on topics that address the issues of environmental contamination and the management of solid and hazardous waste. Specific areas of research include: P2 for industrial/commercial generators, integrated solid waste management systems, detection and mapping of subsurface contamination, risk assessment and management, use of geoelectrical data to define site hydrogeology, consideration of imprecision and subjective judgments using fuzzy set theory, and multidimensional mapping of environmental phenomena using geostatistical techniques.