United States
Environmental Protection
Agency

Office of Research and
Development
Washington, DC 20460

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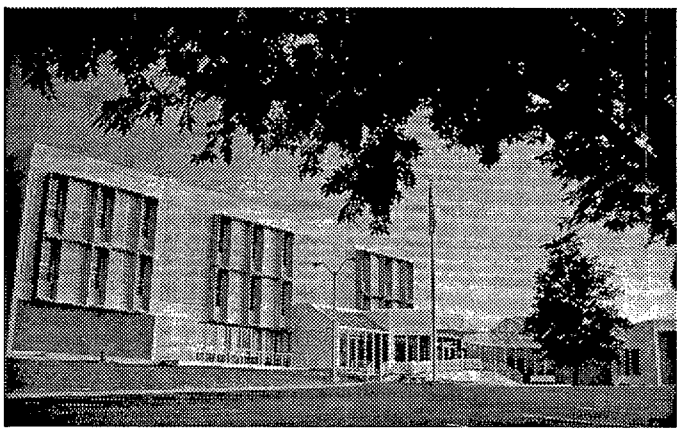
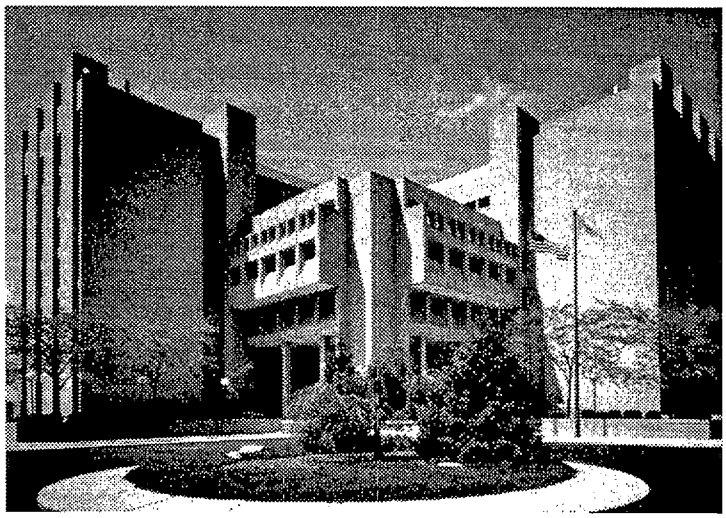
EPA

National Risk Management Research Laboratory

Organization and Contacts





Front Cover: National Risk Management Research Laboratory facilities can be found at Andrew W. Breidenbach Environmental Research Center in Cincinnati, Ohio (top right), the U.S. EPA Environmental Research Center in Research Triangle Park, North Carolina (bottom), and Robert S. Kerr Environmental Research Laboratory in Ada, Oklahoma (top left).

National Risk Management Research Laboratory

E. Timothy Oppelt, Director
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Cincinnati, OH 45268
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E. Timothy Oppelt has been the Director of the National Risk Management Research Laboratory since April 1995. Mr. Oppelt has held managerial positions in EPA in such diverse components as the Risk Reduction Engineering Laboratory, the Hazardous Waste Engineering Research Laboratory, the Waste Management Division of Region V, the Municipal Environmental Research Laboratory, and the Wastewater Treatment Pilot Plant of the National Environmental Research Center. Mr. Oppelt's academic degrees include a Bachelor's degree in civil engineering, a Master's degree in sanitary engineering, both from Cornell University; and an MBA from Xavier University, Cincinnati, Ohio. He holds EPA's Bronze and Silver Medals.

National Risk Management Research Laboratory

Mission

The National Risk Management Research Laboratory (NRMRL) conducts research into ways to prevent and reduce risks from pollution that threaten human health and the environment. The laboratory investigates methods and their cost-effectiveness for preventing and controlling pollution to air, land, water, and subsurface resources; protection of water quality in public water systems; remediation of contaminated sites, sediments and ground water; prevention and control of indoor air pollution; and restoration of ecosystems. The goal of this research is to promote the development of environmental technologies; develop scientific and engineering information to support regulatory and policy decisions; and provide the technical support and information transfer to ensure implementation of environmental regulations and strategies at the national and community levels. In addition, NRMRL collaborates with private sector partners to foster technologies to reduce the cost of compliance and to anticipate emerging problems.

Research

NRMRL headquarters are in Cincinnati, Ohio. NRMRL research facilities are in Cincinnati, Ohio; Research Triangle Park, North Carolina; Ada, Oklahoma; and Edison, New Jersey. A Technology Coordination Office for NRMRL is in Washington, D.C. NRMRL has a staff of 386. Of these, 251 are scientists and engineers. The base fiscal year 1997 research budget totals $52 million. The research program is focused in six key areas:

- Protection of drinking water
- Control of air pollution
- Pollution prevention and economic analysis
- Remediation of contaminated media
- Ecosystem protection and restoration
- Technology transfer

Information follows about the focus of NRMRL's research programs, ongoing and planned research activities, and the organization of NRMRL within EPA's Office of Research and Development.

Protection of Drinking Water

There are nearly 200,000 community water systems in the U.S. Over 40% of these communities use ground water as their source of drinking water. NRMRL research evaluates technology to meet the requirements of the Safe Drinking Water Act and to provide methods for predicting the movement and fate of contaminants in ground water.

Current research highlights methods to control risks in treatment and distribution systems. Treatment studies assess removal of contaminants by techniques such as membrane filtration. Studies assess controls for disease-causing microbes. NRMRL has also developed a computer model to predict water quality in complex distribution systems.

Control of Air Pollution

Air pollution is a high risk to human health and the environment. NRMRL researchers evaluate technologies to control sources of criteria air pollutants, to reduce emissions of contaminants, to control indoor air pollutants, and to control industrial emissions of toxic air pollutants.

Researchers predict the formation of chlorinated dioxins from combustion sources. These findings have led to a patented sorbent injection process that limits dioxin formation.

Working with industrial partners, NRMRL researchers have found chemicals to replace ozone-depleting chemicals. Two replace-

ments tested in EPA laboratories are being considered for use by the Navy in shipboard chillers.

Pollution Prevention and Economic Analysis

Pollution prevention research at NRMRL helps establish methods and tools to use in pollution prevention technologies. NRMRL scientists have produced over 24 industry-specific and generic technology guides. NRMRL engineers design software to allow other engineers to make process changes that improve environmental performance.

NRMRL researchers have completed case study evaluations of innovative prevention technologies for over 75 manufacturing operations. Research is underway now to evaluate other innovative approaches, and develop and apply cost effectiveness methods and data.

Remediation of Contaminated Media

NRMRL conducts research to demonstrate methods for remediating contaminated hazardous waste sites and leaking underground storage tanks. Scientists are developing models to assess fate, transport and transformation rates, and mechanisms in unsaturated soil profiles and saturated zones.

In situ remediation technologies potentially represent the most cost-effective, lowest risk options for many sites. Scientists use field studies in bioremediation to examine remediation of nonaqueous phase liquids, reductive dechlorination of PCBs and other chlorinated organics, soil bioventing of fuel spills, and bioreduction of hexavalent chromium in ground water. EPA holds many of these demonstrations in collaboration with Department of Defense installations.

NRMRL cooperates with Monsanto, General Electric, and DuPont in "lasagna technology." With this technology, the scientists create layered zones for treatment of contaminants *in situ*. The process promises to be more cost effective than traditional methods and may enhance other *in situ* methods. Field trials are underway.

The largest component of the remediation research program is the Superfund Innovative Technology Evaluation Program (SITE). In this program, technology developers provide and operate their technologies at field sites, and EPA pays for an intensive performance evaluation and reports the results widely. Since the program began in 1986, innovative technologies at remediation sites have increased from 25% to over 50% of the technologies selected. A recent study of remediation costs at 17 sites where innovative technologies are being used has shown that the use of SITE-evaluated technologies has saved nearly $360 million over conventional remediation approaches.

NRMRL also conducts research on methods and technologies to treat contaminated sediments. Dredged sediments are often treated as hazardous waste materials; in-place sediments are treated as part of ecosystem restoration technologies.

Ecosystem Protection and Restoration

NRMRL conducts research to develop and demonstrate approaches and technologies to protect and, as appropriate, restore damaged ecosystems. Watersheds are the geographical units chosen for study and priority risk problems include contaminated sediments, nonpoint source pollution from wet weather flows in urban and mixed land use watersheds, and regional impacts from cumulative stressors including climate change.

NRMRL scientists and engineers are developing watershed best management practices, *in situ* sediment remediation technologies, urban storm water management approaches, and combined sewer overflow treatment and control systems. New research has been initiated to develop methods to restore damaged ecosystems with emphases on riparian zones and constructed wetlands. Computer models and decision support systems will be developed to assist watershed managers and communities with ecosystem management and restoration projects.

Technology Transfer

A final NRMRL component is the dissemination of technical information. Informing the regulated industry, regulatory and permitting officials, and environmental consultants about the latest advancements in risk management approaches is vital to the success of all of EPA's programs.

NRMRL produces technical and nontechnical publications, software products, and technical meetings. Recent projects have included brochures on bioremediation and stratospheric ozone depletion; manuals on water and wastewater treatment for small communities and on recycling and reuse of materials found on Superfund sites; and technical meetings on combined and sanitary sewer overflows. These publications can be ordered by phone (513-569-7562), fax (513-569-7566), or modem (dial in 513-569-7610). Additionally, the ORD Internet Home Page (*http://www.epa.gov/ORD/*), linked to the U.S. EPA Home Page (*http://www.epa.gov/*) can now be accessed to get the latest information about ORD and NRMRL research products.

National Risk Management Research Laboratory
Areas of Expertise

	Telephone	Areas of Expertise
Office of the Director		
E. Timothy Oppelt, Director	513-569-7418	
Calvin O. Lawrence, Deputy Director	513-569-7391	
Associate Laboratory Directors		
Hugh McKinnon	513-569-7689	Environmental medicine; environmental public health
Lee Mulkey	513-569-7689	Ecosystem protection; ecosystem restoration
Assistant Laboratory Directors		
Ben Blaney	513-569-7852	Hazardous waste research planning
Alden Christianson	513-569-7997	Pesticides/toxics research planning
Clyde Dempsey	513-569-7842	Water research planning
Jon Herrmann	513-569-7839	Multimedia research planning
Doug McKinney	919-541-3006	Air research planning
Air Pollution Prevention and Control Division		
Office of the Director		
Frank T. Princiotta, Director	919-541-2821	Air and energy environmental assessment and control technology
G. Blair Martin	919-541-7504	Combustion, incineration; furnace injection for SO_x control
Michael Maxwell	919-541-3091	International control technology
Technical Services Branch		
Wade Ponder, Chief	919-541-2818	Flue gas desulfurization; control technology; pollution prevention; conventional combustion environmental assessment
Nancy Adams	919-541-5510	Quality assurance/quality control audits; environmental toxicology; pesticide effects
Jeff Ryan	919-541-1437	Dioxin/organics measurement; source/stack sampling methodology
Richard Shores	919-541-4983	Environmental engineering; instrumentation for ambient air monitoring; QA/QC field audit programs
Shirley Wasson	919-541-1439	X-ray fluorescence; x-ray diffraction; scanning electron microscopy; QA/QC auditor; metals analysis

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Air Pollution Technology Branch		
Robert E. Hall, Chief	919-541-2477	Combustion modification control technology; fundamental hazardous waste incineration research
Theodore Brna	919-541-2684	Flue gas cleaning; chlorofluorocarbons alternatives; power plant cooling systems; property evaluation of refrigerants and lubricants
Brian Gullett	919-541-1534	Formation and prevention of chlorinated organics from incineration processes; sorption of mercury from industrial processes
Norm Kaplan	919-541-2556	Integrated air pollution control system cost model; economic evaluations of SO_2, NO_x, particulate matter control
Jim Kilgroe	919-541-2854	Municipal solid waste combustion; hazardous waste combustion; formation and destruction of polychlorinated dibenzo-dioxin/polychlorinated dibenzo-furan
David Lachapelle	919-541-3444	Combustion modification control technology; NO_x/SO_x control
C. W. Lee	919-541-7663	Chlorofluorocarbons and electrical industrial waste incineration; biomass combustion
Paul Lemieux	919-541-0962	Products of incomplete combustion from incineration; artificial intelligence for combustion control; tire burning; emergency safety vents
Bill Linak	919-541-5792	Toxic metal transformation/aerosol formation during hazardous and municipal waste incineration
Andy Miller	919-541-2920	NO_x, air toxics, use of artificial intelligence for combustion applications
Sam Rakes	919-541-2828	SO_x control technology
Charles Sedman	919-541-7700	Flue gas cleaning technology
Jack Wasser	919-541-2476	NO_x and particulates from stationary diesel engines and gas turbines, industrial boilers, woodstoves and industrial furnaces and processes; hazardous waste incineration in fluidized bed combustors

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Atmospheric Protection Branch		
William J. Rhodes, Chief	919 541-2853	Emissions and mitigation for global climate change, e.g., biomass, greenhouse gases, ozone depleting substances
Evelyn Baskin	919-541-2429	Refrigeration/heat transfer/thermosciences (ozone depleting substances and biomass research)
Lee L. Beck	919-541-0617	Emissions and mitigation software related to global climate change
Robert H Borgwardt	919-541-2336	Mitigation technology for greenhouse gas emissions
Cynthia L. Gage	919-541-0590	Emissions and mitigation for global climate change (particularly ozone depleting substances)
Robert V. Hendriks	919-541-3928	Refrigeration technologies and biomass utilization
James Jetter	919-541-4830	Emissions and mitigation for global climate change; refrigeration systems; automotive air conditioning
David A. Kirchgessner	919 541-4021	Methane emissions, especially coal mines; natural gas processing; petroleum
Carol Purvis	919-541-7519	Small biomass-to-electricity technologies
N. Dean Smith	919-541-2708	Alternative chemicals for pollution prevention, alternatives for greenhouse gases and ozone depleting substances
Ronald J. Spiegel	919-541-7542	Mitigation for global climate change, e.g., fuel cells; advanced control systems; photovoltaic systems
Susan Thorneloe	919-541-2709	Emissions and mitigation for waste management; small-scale combustion devices; large area sources; evaluation of integrated waste management strategies using life-cycle assessment principles
Emissions Characterization and Prevention Branch		
Larry Jones, Chief	919-541-7716	Emission characterization methodologies; projection models; field validation of improved methods
Chuck Darvin	919-541-7633	Pollution prevention methodologies (spraybooths, cleaning)
Chris Geron	919-541-4639	Biogenic emissions characterization

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Bruce Harris	919-541-7907	Particulate heavy duty mobile emissions characterization.
Julian Jones	919-541-2489	Toxic air emissions characterization
Sue Kimbrough	919-541-2612	Emissions modeling
Mike Kosusko	919-541-2734	Pollution prevention methodologies (general)
Robert McCrillis	919-541-2733	Particulate and pollution prevention methodologies (coatings)
Chuck Mann	919-541-4593	Stationary area source emissions characterization
Chuck Masser	919-541-7586	Particulate and volatile organic carbon emissions characterization
Carlos Nuñez	919-541-1156	Pollution prevention methodologies (general)
Geddes Ramsey	919-541-7963	Particulate and pollution prevention (coatings)
Ted Ripberger	919-541-2924	Light duty mobile emissions characterization
Niranjan Vescio	919-541-0487	Remote sensing of mobile source emissions
Chester Vogel	919-541-2827	Pollution prevention methodologies (adhesives)
Kaye Whitfield	919-541-2509	Pollution prevention methodologies (paint stripping)
Indoor Environment Management Branch		
Michael Osborne, Chief	919-541-4113	Indoor air pollutant source/emissions characterization; indoor air quality mitigation; radon mitigation
John C. S. Chang	919-541-3747	Biocontaminants; volatile organic carbon source/sink characterization; volatile organic carbon emissions modeling
D. Bruce Henschel	919-541-4112	Cost analysis of indoor air quality control techniques; building energy modeling; radon reduction in existing houses
Betsy M. Howard	919-541-7915	Pollution prevention; particle board; large chamber testing; conversion varnishes
Russell N. Kulp	919-541-7980	Ventilation systems (large building studies; air duct cleaning; heating; ventilation and air conditioning pollution sources; gas indoor air phase filtration; energy and indoor air quality studies)

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Kelly W. Leovic	919-541-7717	Pollution prevention (office equipment, aerosol consumer products, engineered wood products); technology transfer
Mark A. Mason	919-541-4835	Bioresponse methods development; chemical source characterization; large chamber testing
Marc Y. Menetrez	919-541-7981	Large building measurements (indoor air quality), ventilation, building dynamics; heating, ventilation and air conditioning, diagnostic strategy
Ronald B. Mosley	919-541-7865	Indoor air pollutants originating in soil; mathematical modeling, indoor particles; soil contaminants
Richard B. Perry	919-541-2721	Radon diffusion measurement; test method development; ventilation systems research
David C. Sanchez	919-541-2979	Radon research (measurement, transport modeling, building dynamics, new construction standards); indoor air quality; diffusion barrier testing; radon-free schools
Leslie E. Sparks	919-541-245	Indoor air quality and exposure modeling; air cleaners; indoor particles
Raymond S. Steiber	919-541-2288	Indoor air quality particulate and chemistry studies (indoor ozone, biological volatile organic carbons, indoor particulate, remedial device testing, marker compounds)
W. Gene Tucker	919-541-2746	Control of indoor air quality; ASHRAE Standard 62; bioresponse methods; source emissions; indoor/outdoor particles
James B. White	919-541-1189	Low-emitting/low-impact sources; indoor air quality emission source database; indoor air quality and life cycle assessment; environmental resources guide; facilities design and operation; CADD-based life cycle analysis for indoor air quality; textiles

Land Remediation and Pollution Control Division

Office of the Director

Robert Olexsey, Director	513-569-7861	Treatment technologies
Annette Gatchett	513-569-7697	Physical/chemical treatment technology
Fran Kremer	513-569-7346	Bioremediation; hazardous waste
Donald Sanning	513-569-7875	International remediation technologies

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Remediation and Containment Branch		
John F. Martin, Chief	513-569-7758	SITE demonstration and evaluation
Taras Bryndzia	513-569-7857	Geochemistry; soil chemistry; dechlorination
David Carson	513-569-7527	Landfills; geosynthetics; containment systems
Brunilda Davila	513-569-7849	Chemical engineering; unit treatment processes
Vicente Gallardo	513-569-7176	Chemical engineering; separation technologies
Richard Griffiths	513-569-7832	Separation technologies; metal removal; adsorption and desorption phenomena
Wendy Davis-Hoover	513-569-7206	Microbiology; bioremediation
S. Jackson Hubbard	513-569-7507	Mining; mine reclamation; solidification/ stabilization
Valdis Kukainis	513-569-7955	Biology; bioremediation
Randy Parker	513-569-7271	Electrokinetics; *in situ* remediation; metal removal
Michael Roulier	513-569-7796	Hydraulic fracturing; soil science; *in situ* remediation
James Ryan	513-569-7653	Soil sciences; soil chemistry; risk assessment
Treatment and Destruction Branch		
Laurel Staley, Chief	513-569-7863	Innovative thermal treatment
Carolyn Acheson	513-569-7190	Bioremediation of soils; treatment of acid mine drainage; biochemical engineering
Barry Austern	513-569-7638	Chromatography; organic analysis; mass spectrometry
Dolloff F. Bishop	513-569-7629	Natural attenuation; toxicity reduction bioremediation; air biofilter treatment
Richard C. Brenner	513-569-7657	Pilot- and field-scale bioremediation
Paul DePercin	513-569-7797	Vacuum extraction; soil vapor extraction; thermal desorption; air pollution stabilization
John Glaser	513-569-7568	Bioremediation of soils; fungal treatment; bioslurry treatment; composting; biopiles

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
John Haines	513-569-7446	Microbiology; oil spills; soil science
Ronald Lewis	513-569-7856	Bioremediation; soil washing; thermal desorption
Paul McCauley	513-569-7444	Bioslurry; bioventing; field work
Carl Potter	513-569-7231	Biochemical toxicology; microbiology
Teri Richardson	513-569-7949	Vitrification
Steven Rock	513-569-7149	Phytoremediation
Gregory Sayles	513-569-7607	Bioventing; natural attenuation of soils; land treatment; risk management of endocrine disrupting chemicals
Henry Tabak	513-569-7681	Bioremediation kinetics; respirometric biodegradation; biotreatability; environmentally acceptable bioremediation endpoints; biotreatment of mine drainage; bioavailability of contaminants in soil
Albert Venosa	513-569-7668	Oil spills; bioremediation; hydrocarbon biodegradation
Site Management Support Branch		
Trish Erickson, Chief	513-569-7406	Solidification/stabilization; mining sites; minewater treatment; metals contamination; waste characterization; aqueous geochemical modeling
Edward Bates	513-569-7774	Solidification/stabilization; remedial design; mining sites; wood treating sites; materials handling; field testing and remedial activity (RA) oversight
Edwin Barth	513-569-7669	Brownfields coordinator; solidification/ stabilization; radioactive waste; explosive waste; battery breaker sites; leaching tests; firing range
Eugene Harris	513-569-7862	Engineering forum contact; mining sites; computers; biotreatment; carbon treatment; sedimentation; indoor air pollution
Thomas Holdsworth	513-569-7675	Solidification/stabilization; biotreatment; carbon treatment; industrial wastewater
Terry Lyons	513-569-7589	Base catalyzed decomposition (BCD); solidification/stabilization; solvent extraction; wood preserver sites; water treatment; negotiations

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Joan Mattox	513-569-7624	Technical assistance for Superfund; emerging technologies for remediation of radioactive/mixed waste
Marta Richards	513-569-7692	Technical assistance for Resource Conservation and Recovery Act (RCRA); incineration; thermal desorption; wood-treating sites; manufactured-gas plant sites
Michelle Simon	513-569-7469	Soil vapor extraction; air sparging; solvent sites; dense nonaqueous phase liquid (DNAPL); light nonaqueous phase liquid (LNAPL)
Dennis Timberlake	513-569-7547	Contaminated sediments; solvent extraction; soil washing; dechlorination
Ronald Turner	513-569-7775	Treatability Study Assistance Program; water treatment; industrial waste; best demonstrated available technology (BDAT)
Subsurface Protection and Remediation Division		
Office of the Director		
Clinton W. Hall, Director	405-436-8510	Ground-water hydrology/geology
Carl G. Enfield	405-436-8530	Contaminant transport modeling; aquifer restoration
Stephen G. Schmelling	405-436-8540	Contaminant transport modeling; fractured media
Abiotic Processes and Applications Branch		
Candida C. West, Chief	405-436-8551	Subsurface abiotic processes; nonaqueous phase liquid transport surfactants
Frank P. Beck	405-436-8546	Soil science; subsurface sampling
Jong Soo Cho	405-436-8547	Contaminant transport modeling; vapor transport
Eva L. Davis	405-436-8548	Nonaqueous phase liquid transport
Stephen R. Kraemer	405-436-8549	Hydrology; fractured media
Bob K. Lien	405-436-8555	Soil science; geophysics
Susan C. Mravik	405-436-8577	Soil science
Robert W. Puls	405-436-8543	Geochemistry; metals transport; reactive barriers

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Thomas E. Short	405-436-8544	Contaminant transport modeling
David M. Walters	405-436-8550	Soils; computer networking
A. Lynn Wood	405-436-8552	Subsurface abiotic processes; aquifer restoration
Biotic Processes and Applications Branch		
David Burden, Acting Chief	405-436-8606	Hydrology; ground-water protection
Stephen R. Hutchins	405-436-8563	Subsurface biotransformations
Donald H. Kampbell	405-436-8564	Natural attenuation
Dennis E. Miller	405-436-8567	Subsurface remediation
Guy W. Sewell	405-436-8566	Subsurface biotransformations; subsurface ecology
John T. Wilson	405-436-8532	Bioremediation; natural attenuation
Technical and Administrative Support Staff		
Roger L. Cosby, Chief	405-436-8512	Organic analytical chemistry
Garmon B. Smith	405-436-8565	Organic analytical chemistry
Technical Assistance and Technology Transfer Branch		
Jerry N. Jones, Chief	405-436-8593	Analytical chemistry; aquifer restoration
Steven D. Acree	405-436-8609	Hydrogeology; geophysics
Dominic C. DiGiulio	405-436-8607	Hydrology; modeling; soil venting
Don C. Draper	405-436-8603	Hydrogeology; underground injection
Scott G. Huling	405-436-8610	Land treatment; RCRA; modeling; nonaqueous phase liquid transport
Mary E. Randolph	405-436-8616	Microbiology; bioremediation
Randall R. Ross	405-436-8611	Hydrogeology; modeling; nonaqueous phase liquid transport
Joseph R. Williams	405-436-8608	Soil science; modeling
Sustainable Technology Division		
Office of the Director		
Subhas K. Sikdar, Director	513-569-7528	Separations technology; sustainable technology
Gordon M. Evans	513-569-7684	Cost benefit analysis; cost engineering; cost of remediation technologies; hydrogen reduction technologies; innovative remediation technologies; economics

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Glenn M. Shaul	513-569-7408	Electronics Common Sense Initiative support
Clean Processes and Products Branch		
Teresa M. Harten, Chief	513-569-7565	Pollution prevention technology, metal finishing industry; clean processes and products
Franklin R. Alvarez	513-569-7631	Pervaporation for VOCs - removal/recovery
Diana R. Bless	513-569-7674	Pollution prevention - packaging industry; metal adsorption/lead and copper
Hugh B. Durham	513-569-7636	Industrial wastewater treatment - inorganics treatment; pollution prevention - metal finishing industry; environmental engineering
Lynnann Hitchens	513-569-7672	Municipal solid waste management; pervaporation for VOCs - removal/ recovery
Samuel G. Howell	513-569-7756	Pollution prevention technology - chemical and plastics industry
Paul M. Randall	513-569-7673	Automotive coolant (antifreeze recycling technology); cleaner production technologies; electronic manufacturing wastes; electroplating technologies; low and no-VOC coating technology
Johnny Springer, Jr.	513-569-7542	Pollution prevention technology alternatives to solvent: cleaners, strippers, and coatings; pervaporation technology for VOC recovery
David Szlag	513-569-7180	Metals adsorption; electroplating; ground-water modeling; heavy metals; ion exchange
Lee Vane	513-569-7799	Electrokinetic soil remediation; membrane separation processes; pervaporation for VOCs - removal/recovery
Brain Westfall	513-569-7511	Pollution prevention technology - recycling/ resource recovery from hazardous wastes; technology transfer
Multimedia Technology Branch		
Roger C. Wilmoth, Chief	513-569-7509	Electroplating and metals treatment; asbestos; mining; toxics control

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
John O. Burckle	513-569-7506	Biotechnology engineering; heavy metals; lead paint abatement; smelters; electroplating; separations
Alva Edwards	513-569-7693	Asbestos; lead paint abatement; petroleum Common Sense Initiative (CSI) support; Environmental Technology Verification (ETV) Program
T. David Ferguson	513-569-7518	Metal finishing; Common Sense Initiative support; pesticide treatment; industrial wastewater treatment
George Huffman	513-569-7431	Chemical detoxification; mine waste program/Montana Tech; thermal treatment; incineration/pyrolysis; mixed waste; medical waste
Fred K. Kawahara	513-569-7313	Base catalyzed decomposition (BCD); toxic and hazardous chemicals treatment including pesticides, PCBs, nitrogen-containing, sulfur-containing gases and ammunitions; petroleum chemistry; phthalate analysis; infrared spectrophotometry
Richard P. Lauch	513-569-7237	Soil contaminants removal; thermal desorption; biodegradation in soil; oxidation of organics in liquids
C.C. Lee	513-569-7520	Mixed waste; medical waste; chemical detoxification; plasma/vitrification/molten metal; incineration
Norma Lewis	513-569-7665	Remediation technologies; Environmental Technology Verification Program; advanced oxidation technologies; emerging technologies
Ivars J. Licis	513-569-7718	Clean processes and products; full (true) cost assessment; industrial pollution prevention; general pollution prevention; life cycle assessment; recycling; sustainable development technologies; waste minimization
Philip C. Lin	513-569-7324	Incineration; sampling technology; mathematical modeling; statistics; geostatistics
Thomas J. Powers	513-569-7550	Asbestos; lead paint abatement; mine waste program/sulfate reducing bacteria

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Systems Analysis Branch		
James Heidman, Chief	513-569-7632	Cost benefit analysis; cost engineering; biological wastewater treatment
Jane C. Bare	513-569-7513	Impact assessment; refrigeration systems; stratospheric ozone
James S. Bridges	513-569-7683	Federal facilities pollution prevention; pollution prevention (general)
Heriberto Cabezas	513-569-7350	Solvent design and substitution; chemical process simulation for pollution reduction; computational chemistry for environmental problems; computer simulation; thermodynamics criteria for global impact, life cycle assessment, and separation
Greg Carroll	513-569-7948	Pollution prevention measurement; environmental technology verification; incineration (hazardous waste and PCBs); thermal treatment
Mary Ann Curran	513-569-7782	Life cycle assessment; eco labeling; environmental management; International Standard Operation (ISO) 14,000
Richard G. Eilers	513-569-7809	Cost engineering; cost estimating; mathematical modeling; oxidation treatment technologies
Haynes C. Goddard	513-569-7685	Economic incentives to promote pollution prevention and risk reduction; benefit cost analysis; cost effectiveness analysis; economic analysis; econometric analysis
Theresa Hoagland	513-569-7783	Federal facilities pollution prevention
Albert J. Klee	513-569-7493	Mathematical modeling; statistics
Kenneth R. Stone	513-569-7474	Life cycle assessment; life cycle design; cost benefit analysis; federal facility pollution prevention
Technology Coordination Office		
Penny Hansen, Director	202-260-2600	Environmental technology verification
Tina Maragousis	202-260-2600	Environmental technology verification
Technology Transfer and Support Division		
Office of the Director		
John Convery, Director	513-569-7896	Operations research; municipal wastewater treatment

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Technology Transfer Branch		
Dan Murray, Chief	513-569-7522	Urban wet weather water pollution; water quality monitoring; water quality assessment; watershed management; watershed planning
Joan Colson	513-569-7501	Treatment of hazardous wastes
Georgia Dunaway	513-569-7650	Customer-focused outreach; technical outreach; workshop, seminar, and conference coordination; satellite teleconferencing; special emphasis programs
Emma Lou George	513-569-7578	Pollution prevention; cleaner technologies; risk management; environmental impact assessment; International Standard Operation (ISO) 14,000; environmental toxicology; endocrine disruptors; respiratory biochemistry
Douglas Grosse	513-569-7844	Site remediation (RCRA, CERCLA); aqueous treatment, cyanide treatment, *in situ* treatment technologies; ground-water restoration; biotreatment; membrane separation; metals removal; permitting
Sam Hayes	513-569-7514	Quality assurance
Ann Kern	513-569-7635	Quality assurance
James Kreissl	513-569-7611	Wastewater treatment; wastewater collection systems; wastewater management (onsite); community-based environmental protection (CBEP); small communities programs
Kim A. McClellan	513-569-7214	Quality assurance; microbiology; virology; environmental science
James E. Smith, Jr.	513-569-7844	Surface water treatment; ground-water treatment; wastewater treatment; sludge/ biosolids treatment; international activities (developing countries); pesticides
Technical Information Branch		
Carol Grove, Chief	513-569-7362	Technical publications
Patrick Burke	513-569-7525	Outreach products
Scott Minamyer	513-569-7175	Publication development

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Technical Operations Branch		
John Ireland, Chief	513-569-7413	Local area networks
Patrick Clark	513-569-7561	Electron microscopy; light microscopy; asbestos; refractory ceramic fibers; lead refractory; bioremediation of cyanide; drinking water
Mark Dincecco	513-569-7789	ORD Internet Home Page
Frank Evans	513-569-7051	RCRA hazardous waste management; RCRA research operations; Treatment Storage and Disposal Facility (TSDF) research operations; pilot plant management and operations
Kathy Lautenschlegar	513-569-7969	Safety; health; environmental compliance
Randy Revetta	513-569-7358	ORD electronic bulletin board systems
Water Supply and Water Resources Division		
Office of the Director		
Robert Clark, Director	513-569-7201	Drinking water treatment: small systems, disinfection byproducts, distribution systems and modeling, waterborne disease outbreaks, distribution water quality, watershed management and modeling
Susan Campbell	513-569-7426	Drinking water treatment: small systems organics
Walter Feige	513-569-7496	Publications
Frank Freestone	908-321-6632	Strategic planning for water research programs; technology development; decision support system
Lewis Rossman	513-569-7603	Drinking water treatment: distribution systems and modeling
Microbial Contaminants Control Branch		
Donald Reasoner, Chief	513-569-7234	Drinking water treatment: waterborne disease outbreaks, coliform methodology, criteria and standards, species identification; pigmented organisms; microbiology treatment, home treatment devices, rapid bacteriological methods, raw and potable water quality, sample transit time, distribution water quality, microbial growth, assimilable and biodegradable organic carbon

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Christon Hurst	513-569-7461	Drinking water treatment: disinfection treatment, concentration X time concept, viruses in water; virus methods
Mark Meckes	513-569-7348	Drinking water treatment: distribution systems modeling and water quality
Jim Owens	513-569-7235	Drinking water treatment: *Giardia/Cryptosporidium* research
Eugene Rice	513-569-7204	Drinking water treatment: biofiltration, waterborne disease outbreaks; microbiology treatment: coliform methodology, criteria and standards, concentration X time concept, *Giardia/Cryptosporidium*, sample transit time; microbial growth; assimilable and biodegradable organic carbon
Treatment Technology Evaluation Branch		
Robert Thurnau, Chief	513-569-7504	Drinking water treatment: disinfection byproducts; analytical chemistry
Kim Fox	513-569-7820	Drinking water treatment: arsenic; radionuclides; coagulation and filtration; small systems inorganics; waterborne disease outbreaks; point of use/point of entry treatment of inorganics; *Giardia/ Cryptosporidium* research
William Kaylor	513-569-7466	Drinking water treatment: disinfection byproducts, analytics research
Darren Lytle	513-569-7432	Drinking water treatment: corrosion/lead/ copper, corrosion/secondary impacts, coagulation and filtration
Richard Miltner	513-569-7403	Drinking water treatment: disinfection byproducts, biofiltration, ozone, chlorine dioxide, ozone/UV, other disinfectants, coagulation and filtration
Mike Schock	513-569-7412	Drinking water treatment: corrosion/lead/ copper, corrosion/secondary impacts
Brad Smith	513-569-7238	Drinking water treatment: analytics research
Thomas Sorg	513-569-7370	Drinking water treatment: nitrate, fluoride, arsenic; radionuclides; corrosion/lead/copper; small systems inorganics; point of use/point of entry treatment of inorganics

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Tom Speth	513-569-7208	Drinking water treatment: synthetic organic chemicals, membrane processes; granular activated carbon adsorption; air stripping
Urban Watershed Management Branch		
Daniel Sullivan, Chief	908-321-6677	Urban watershed management
Mike Borst	908-321-6631	Wet weather flows (WWF): modeling
Evan Fan	908-906-6924	Wet weather flows (WWF): design of drainage systems, best management practices
Richard Field	908-321-6674	Watershed management strategies including urban hydrology; wet weather flows (WWF): characterization of stormwater, treatment technologies, disinfection, modeling
Richard Koustas	908-906-6898	Wet weather flows (WWF): databases
Joyce Perdek	908-321-4380	Wet weather flows (WWF): characterization of stormwater, disinfection
Mary Stinson	908-321-6683	Wet weather flows (WWF): treatment technologies
Anthony Tafuri	908-321-6604	Water & wastewater infrastructure technologies, including USTs and ASTs
James Yezzi	908-321-6703	Water & wastewater infrastructure technologies, including USTs and ASTs
Water Quality Management Branch		
Ben Lykins, Chief	513-569-7460	Drinking water treatment: disinfection byproducts, granular activated carbon adsorption, biofiltration, ozone, chlorine dioxide, other disinfectants, field evaluations, small systems organics, distribution systems and modeling; point of use/point of entry treatment, organics
Jeffrey Adams	513-569-7835	Drinking water treatment: membrane processes, air stripping, costs
Don Brown	513-569-7630	Drinking water treatment: constructed wetlands
Carol Ann Fronk	513-569-7592	Drinking water treatment: membrane processes

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National Risk Management Research Laboratory
Areas of Expertise (continued)

	Telephone	Areas of Expertise
Lucille Garner	513-569-7417	Drinking water treatment: raw and potable water quality; assimilable and biodegradable organic carbon
James Goodrich	513-569-7605	Drinking water treatment: small systems organics; distribution systems and modeling; point of use/point of entry treatment of organics; Geographical Information Systems (GIS); *Giardia/ Cryptosporidium* research
Lillian Jones	513-569-7417	Drinking water treatment: analytics research
Jill Neal	513-569-7277	Drinking water treatment: Geographical Information Systems (GIS)
Kathleen Patterson	513-569-7947	Drinking water treatment: mutagenicity
Bill Sidle	513-569-7212	Drinking water treatment: hydrology
Steve Waltrip	513-569-7386	Drinking water treatment: computer