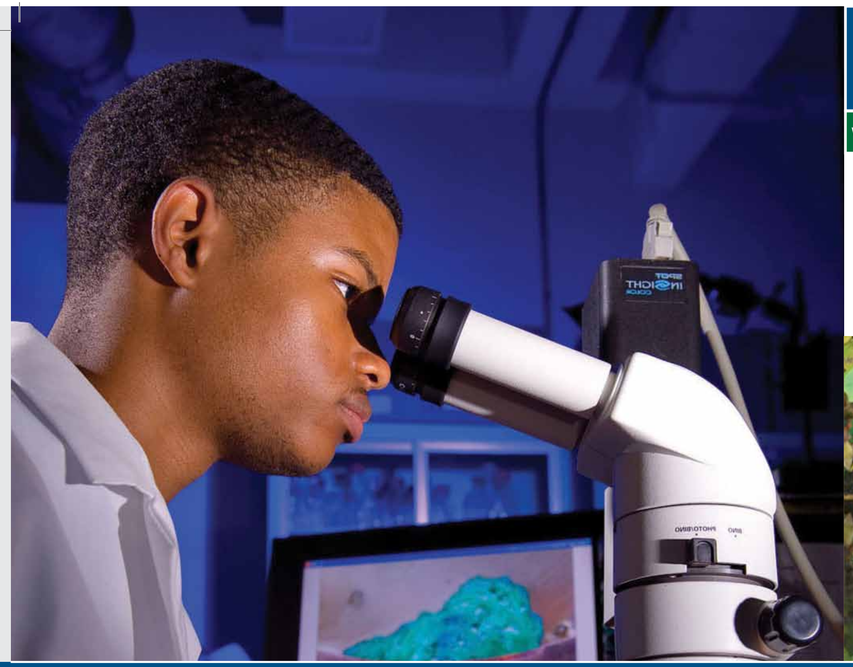

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SCIENCE AT THE U.S. ENVIRONMENTAL PROTECTION AGENCY

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FOR MORE INFORMATION, CONTACT:

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EPA's science is blazing the path forward to a sustainable future.

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IT ALL STARTS WITH

SCIENCE

Office of Research and Development

EPA Research: providing elegant, innovative solutions that help society meet its needs while preserving the ability of future generations to meet their own.

Meeting Challenges

From nanomaterials a billionth of a meter in size to global climate dynamics, EPA scientists are investigating every scale of our environment—and the links between the environment and human health.

EPA conducts research that addresses the highest priority science needs of the nation. The work performed by EPA scientists and their partners from colleges, universities, and other research organizations improves the quality of the air we breathe, the water that sustains us, and the land upon which we live. What they learn helps protect human health and build vibrant communities.

"Science must be the backbone for EPA programs."

– EPA Administrator Lisa P. Jackson

A Foundation Built with Science

No other research organization in the world offers the depth and breadth of scientific and engineering expertise represented by EPA's workforce. Their work supplies the scientific foundation that supports the Agency's actions to protect human health and the environment.

U.S. Environmental Protection Agency
Office of Research and Development

How does the U.S. EPA meet its mission to safeguard human health and protect the environment?

It all starts with science.






EPA's Office of Research and Development (ORD) is forging a path forward toward a sustainable future. ORD's research is conducted under the following integrated research areas.

Air, Climate, and Energy

American communities face serious health and environmental challenges from air pollution and the growing effects of climate change, which are both intricately linked with energy options.

Building on 40 years of achievement in air pollution research that has led to landmark outcomes—including healthier communities and longer life expectancies—EPA researchers are exploring the dynamics of air quality, global climate change, and energy as a set of complex, yet interrelated challenges.

Safe and Sustainable Water Resources

Seeking sustainable solutions to the complex problems facing our nation's drinking water and water resources is vital to supporting healthy humans, ecosystems, and economies.

EPA's safe and sustainable water resources research provides the science and innovative technologies the Agency—and the nation—need to maintain drinking water sources and systems, as well as to protect the chemical, physical, and biological integrity of our water. EPA scientists and engineers help provide sustainable water infrastructure, deliver safe drinking water, manage stormwater, and remove and treat wastewater, allowing its sustainable and safe reuse.

Sustainable and Healthy Communities

How can we meet the needs of today without compromising those of future generations? More specifically, how can people protect our shared environment in a way that fosters human health and well-being, is socially just, and promotes economic prosperity?

Providing the science to answer the questions posed above is at the heart of EPA's sustainable and healthy communities research. Agency researchers and their partners from across a wide spectrum of investigative fields are working together to form a deeper understanding of the balance between the three pillars of sustainability—environment, society, and economy. Their transdisciplinary work will provide the decision tools and data that communities need to make proactive, strategic decisions aimed at a prosperous, more environmentally sustainable future.

Chemical Safety for Sustainability

Chemical safety is a major priority of EPA research. Moving toward a safer and more sustainable environment requires producing new and existing chemicals in safer ways. It means having the information and methods needed to make better-informed, more-timely decisions about chemicals, many of which have not been thoroughly evaluated for potential risks to human health and the environment. EPA research on chemical safety is geared to meet this challenge.

Using innovative approaches, EPA scientists and their partners are embracing the principles of green chemistry to produce safer chemicals. They are also integrating a diversity of scientific disciplines to develop new prediction techniques, pioneering the use of innovative technologies for chemical toxicity testing, and designing tools to advance the management of chemical risks. Chemical safety for sustainability includes research in computational toxicology, nanotechnology, endocrine disrupting chemicals, human health, and pesticides.

Human Health Risk Assessment

Human health risk assessment at EPA is focused on advancing the understanding of the effects that exposure to pollutants have on key biological, chemical, and physical processes that affect human health.

What EPA scientists and their partners learn provides the foundation for the Agency's actions to protect public health and the environment. EPA's human health risk assessment efforts generate health assessments that are used to determine the potential risk to public health from exposure to environmental contaminants.

Homeland Security

Following the terrorist attacks of September 11, 2001, EPA was directed to tap its collective scientific and technical expertise to help protect human health and the environment from the effects of terrorist incidents. EPA was charged with helping to decontaminate buildings and large public areas, protect our nation's water supply, and rapidly provide reliable information to key decision-makers, stakeholders and impacted communities on analytical methods and human health risks.

EPA's homeland security research supports the Agency's leadership role in remediating chemical, biological, or radiological (CBR) contamination from weapons of mass destruction. The program also conducts research on drinking water and wastewater systems since the Agency is the sector lead on water infrastructure. Many of EPA's homeland security research products and technologies have broader environmental and health protection applications.