

## Environmental Science & Biotechnology

### Overview

Environmental stewardship of the 310 square-mile Savannah River Site has been recognized and valued since the site was established in 1950. SRNL scientists and engineers have collected data and performed basic and applied research and development in ecological and geological sciences, atmospheric sciences, environmental remediation, and biotechnology since the site's inception. This expertise is being employed to develop and implement solutions to many of the urgent environmental issues facing our nation and the world.

### Ecology and Environmental Risk Management

SRNL provides major support for ecological characterization, impact analysis and mitigation. The development of rapid assessment methodologies combined with application of ecological principles facilitates solutions that both minimize project costs and provide effective mitigation and monitoring strategies. This support also includes biological toxicity evaluations, remote sensing applications, and wetland restoration and treatment systems.

SRNL applies multidisciplinary expertise in managing and mitigating environmental risk. From analysis of stressors, to contaminant transport through all media, to identification and analysis of receptors, SRNL scientists identify the most appropriate interventions to preserve and enhance environmental health. An emerging concept that holds great promise for dealing with contaminated governmental and industrial sites is risk-based ecological remediation. SRNL maintains and applies this expertise to support our customers in areas such as:

- Characterization techniques
- Remote sensing
- Environmental transport in all media
- Ecological and human health risk assessment
- Mitigation and natural attenuation
- Habitat restoration



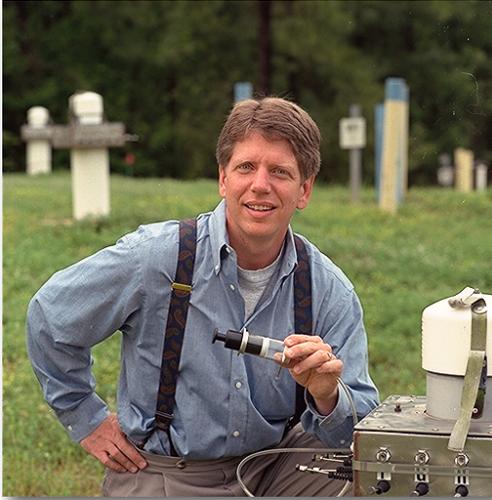
Dr. Anna Knox integrates mineralogy, geochemistry, agronomy, soil science, and ecology in her interdisciplinary studies.

### Atmospheric Technologies

The Atmospheric Technologies Center provides a comprehensive suite of meteorological services for a variety of specialized needs. Resources include a staff of expert meteorologists with extensive experience in weather forecasting, air pollution meteorology, and atmospheric modeling. Areas of expertise include:

- Weather forecasting and consultation
- Real-time atmospheric transport modeling and assessment
- Statistical analysis of meteorological data sets

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Dr. Brian Looney has developed environmental characterization and remediation technologies for organic contaminants, metals and radionuclides. He has received two R&D 100 Awards.

## Environmental Restoration

SRNL is committed to providing the best applied technical expertise and innovative, cost-effective technologies. We focus on protecting human health and the environment, reducing risk, minimizing impacts to the environment, and restoring and sustaining natural resources.

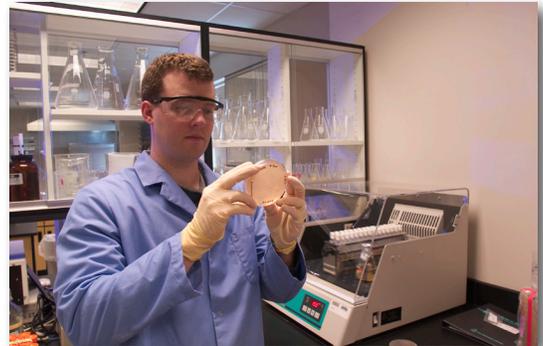
SRNL has received national and international recognition for innovative approaches to cleaning up the environment. Our approach is to select technologies that match the intensity of the problem, using different approaches for the source zone, the primary contaminant plume, and the dilute fringe. SRNL's scientists and engineers focus on creative approaches to developing inexpensive yet robust technologies, using integrated approaches that draw on our expertise in:

- Characterization and data interpretation
- Modeling and analysis
- Remedy selection
- Remedy performance evaluation and monitoring

## Biotechnology

SRNL has extensive experience in the characterization, development, and deployment of bioremediation processes for a wide variety of contaminants that commonly plague our environment. SRNL has produced cost-effective, award-winning technologies that have been demonstrated throughout the DOE complex and internationally. Primary areas of expertise include microbiology, microbial ecology, molecular biology, immunochemistry, advanced bioanalytical instrumentation, and engineering. Our biotechnology capabilities include:

- Bioremediation
- Microbial characterization
- Phytoremediation
- Biofilms
- Biodetection/biosensors
- International programs support



Dr. Christopher Bagwell conducts molecular biology research in our state-of-the-art laboratories.

## Contact

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