ENERGY AND GLOBAL SECURITY INITIATIVES AT ARGONNE NATIONAL LABORATORY

DR. BALENDRA SUTHARSHAN

CHIEF OPERATIONS OFFICER


ON DECEMBER 2, 1942
MAN ACHIEVED HERE
THE FIRST SELF-SUSTAINING CHAIN REACTION
AND THEREBY INITIATED THE
CONTROLLED RELEASE OF NUCLEAR ENERGY
Argonne
NATIONAL LABORATORY
70
1946 - 2016

A VITAL PART OF THE DEPARTMENT OF ENERGY NATIONAL LABORATORY SYSTEM

ARGONNE BY THE NUMBERS (FY17)

$750 M
OPERATING BUDGET

3,200
EMPLOYEES

1,320
SCIENTISTS & ENGINEERS

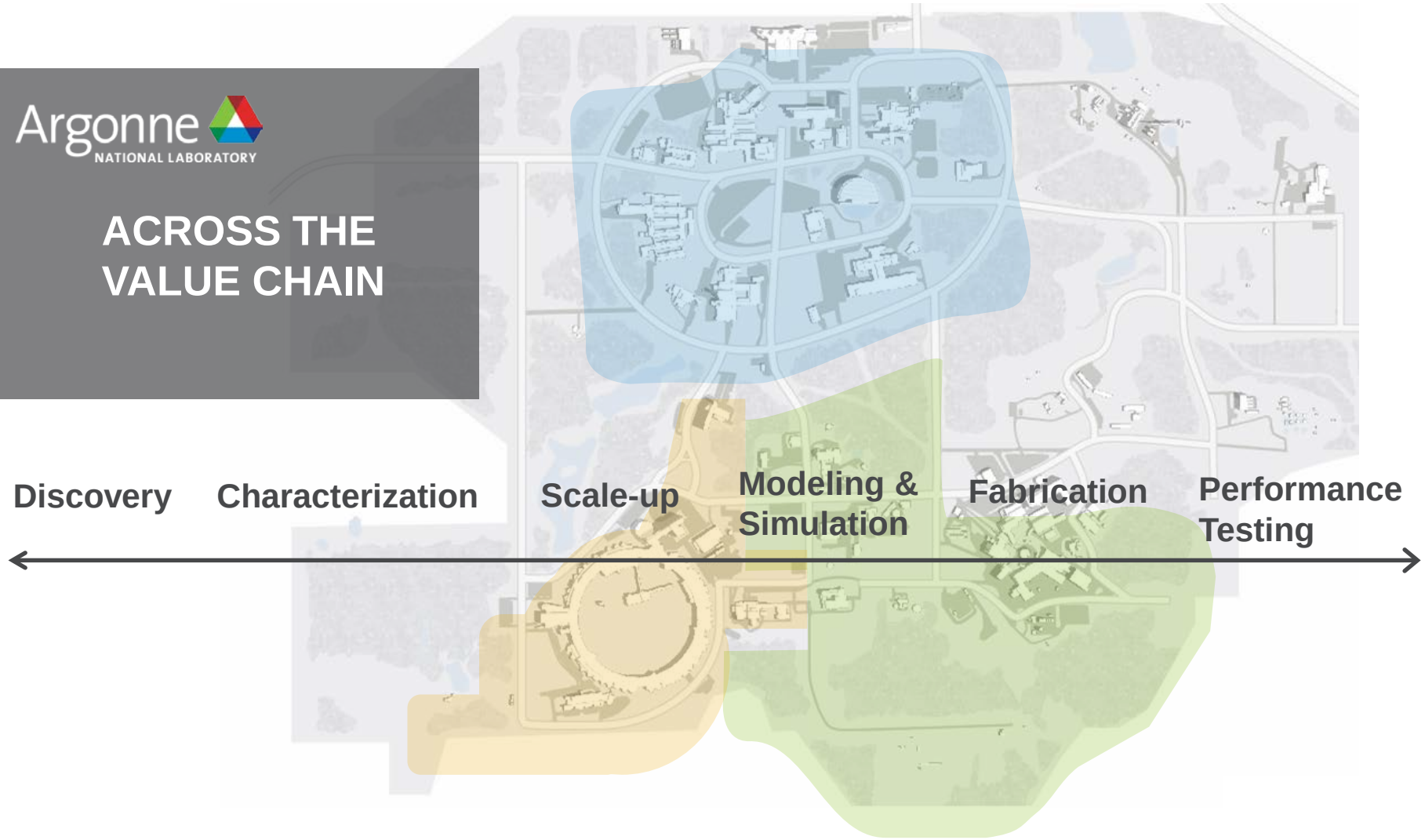
270
POSTDOCTORAL RESEARCHERS

8,200
FACILITY USERS

106
NON-FEDERAL RESEARCH PARTNERS

Argonne NATIONAL LABORATORY

ACROSS THE VALUE CHAIN



ARGONNE DELIVERS HIGH-IMPACT SCIENCE

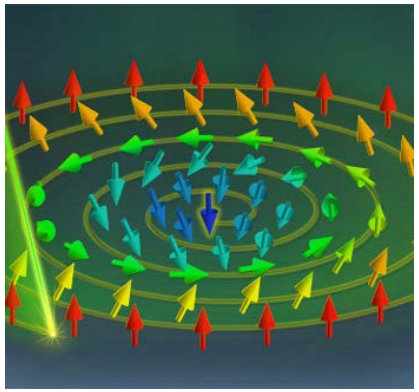
Broad capabilities …

- Discovery in materials, chemistry, physics and biology
- Engineering of advanced energy systems
- Computation and analysis
- Scientific user facilities

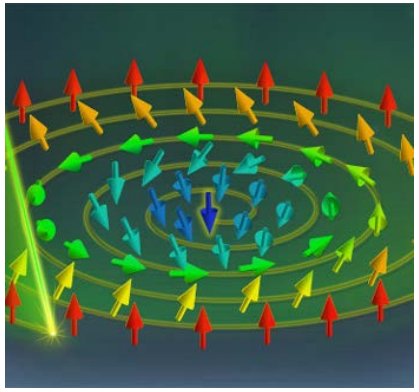
… enable transformational research initiatives

- Hard x-ray sciences
- Advanced computing
- Materials and chemistry
- Energy manufacturing science and engineering
- The universe as our laboratory



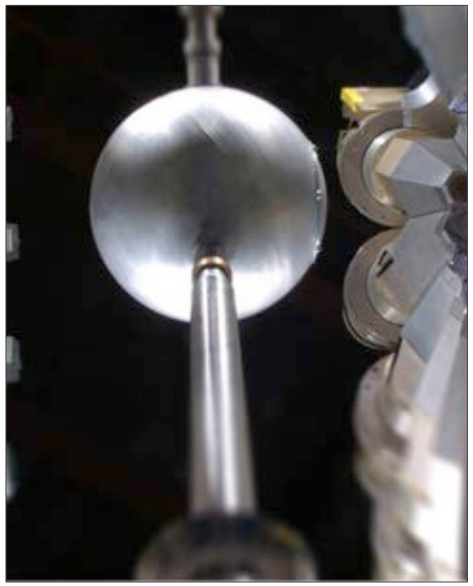


OUR INITIATIVES WILL MAKE A DIFFERENCE IN THE WORLD

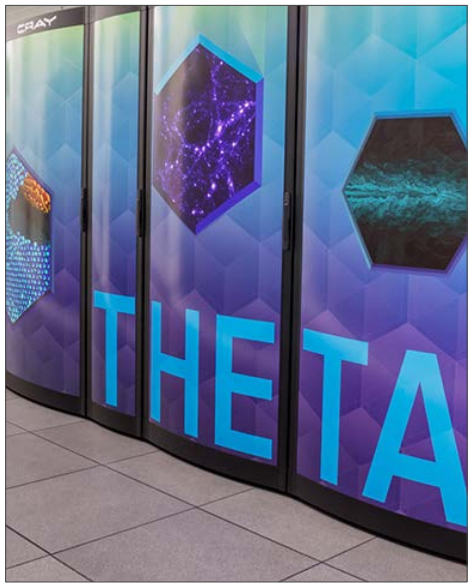
Hard x-ray sciences	Advanced computing	Materials and chemistry	Energy manufacturing science and engineering	The universe as our laboratory
				
An upgraded APS to revolutionize knowledge of materials' structures and propel progress in science, medicine and technology	The most powerful supercomputers, to overcome the biggest challenges in energy, materials, climate, cancer and more	Unprecedented ability to manipulate matter to optimize advanced batteries, catalysts, quantum materials and clean water systems	Breakthroughs to boost American industrial success in producing innovative materials for energy technologies of the future	Pioneering techniques to simulate the universe and detect elementary particles, to unlock mysteries of the cosmos

USER FACILITIES

Advanced Photon Source



Argonne Tandem Linear Accelerator System



Argonne Leadership Computing Facility

Center for Nanoscale Materials

Atmospheric Radiation Measurement – The Southern Great Plains

KEY DIRECTORATE LEVEL EMPLOYEES

Balendra Sutharshan
Chief Operations Officer

Keith Bradley
National Security Program

Santanu Chaudhuri
Manufacturing Science and Engineering

Pete Chupas
Argonne Design Works

DIVISION NAMES AND LEADERSHIP

Applied Materials

Greg Krumdick, Interim Division Director

Strategic Security Sciences

Kirsten Laurin-Kovitz, Interim Division Director

Nuclear Science and Engineering

Jordi Roglans-Ribas, Division Director

Chemical and Fuel Cycle Technology

Jordi Roglans-Ribas, Interim Division Director

Energy Systems

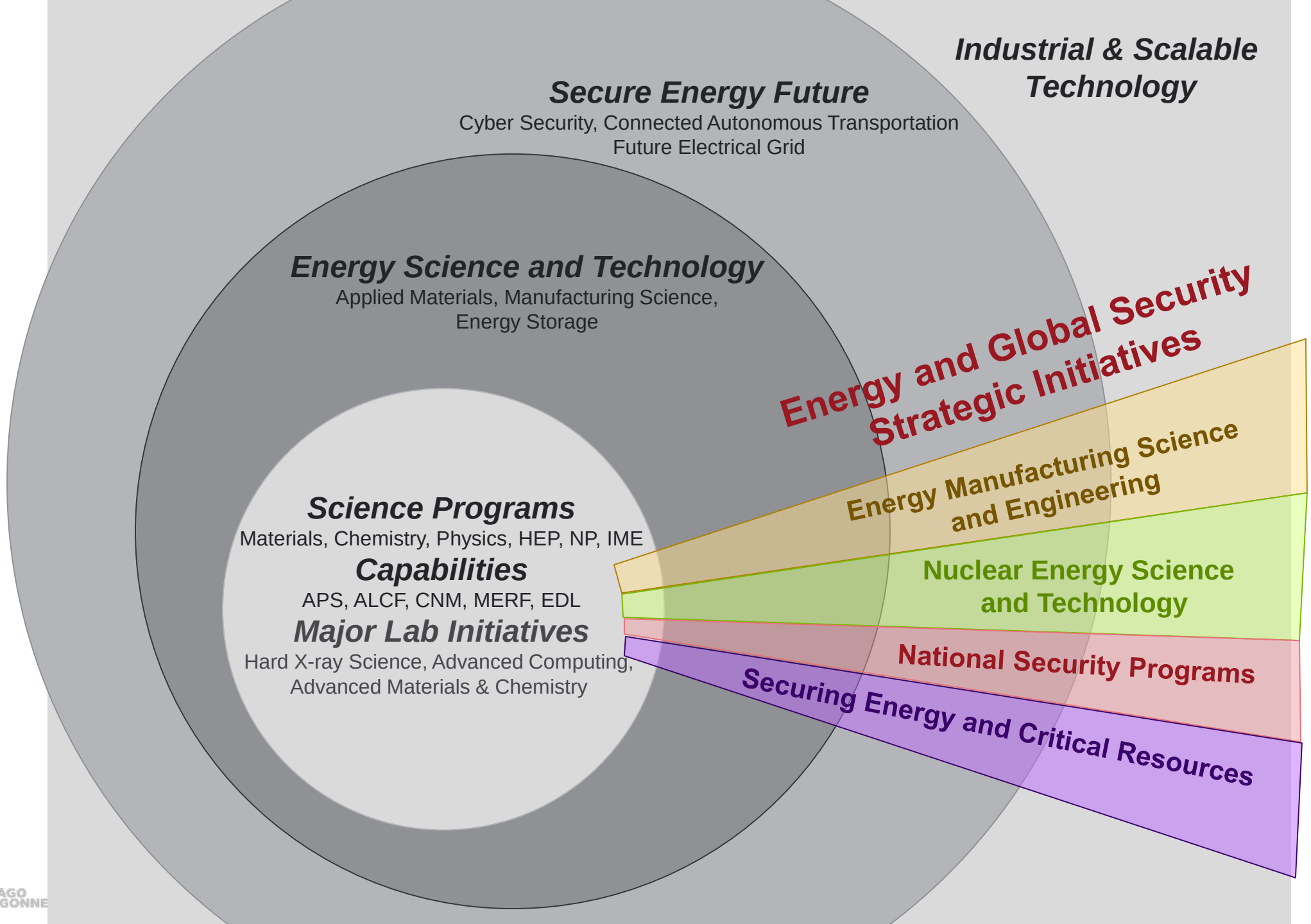
Don Hillebrand, Division Director

Decision and Infrastructure Science

Dave Brannegan, Interim Division Director

Experimental Operations and Facilities

George Vukovich, Interim Division Director


Industrial & Scalable Technology
Secure Energy Future
Cyber Security, Connected Autonomous Transportation
Future Electrical Grid
Energy Science and Technology
Applied Materials, Manufacturing Science,
Energy Storage
Science Programs
Materials, Chemistry, Physics, HEP, NP, IME
Capabilities
APS, ALCF, CNM, MERF, EDL
Major Lab Initiatives
Hard X-ray Science, Advanced Computing,
Advanced Materials & Chemistry
Energy and Global Security Strategic Initiatives
Energy Manufacturing Science and Engineering
Nuclear Energy Science and Technology
National Security Programs
Securing Energy and Critical Resources

ENERGY MANUFACTURING SCIENCE AND ENGINEERING MAJOR INITIATIVE

Create science-based approaches to accelerate the scaling of manufacturing processes for energy technologies

Provide national leadership in restoring American preeminence in manufacturing by applying science-based methods

Create Midwest manufacturing facility leveraging Argonne's basic science infrastructure in a major economic, academic, and industrial center of the country

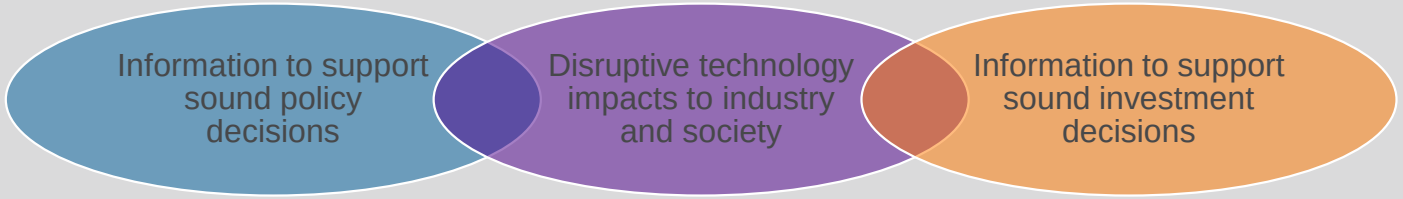
Expand MERF capabilities and develop the Midwest Transformative Energy Manufacturing (MTEM) facility

Develop and scale new energy storage and energy transfer materials and devices

SECURING ENERGY AND CRITICAL RESOURCES

EXAMPLES OF OUTCOME:

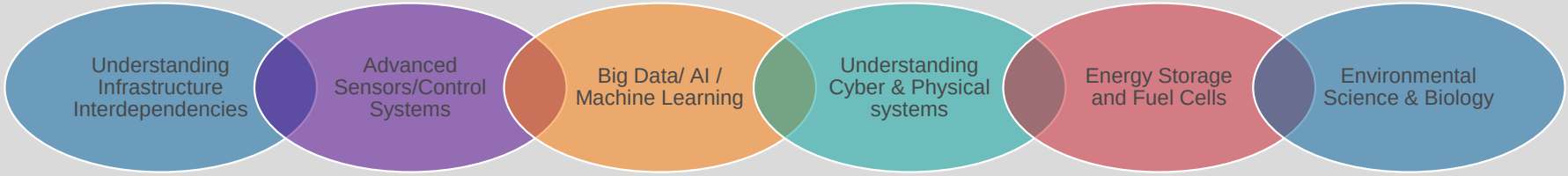
Connected and Autonomous Vehicles, Distributed Electric Grid, Energy Security, Cyber Security



Sponsors: DOE, DoD, Utilities, Insurance Companies, Transportation industry, Municipalities

Integrated Argonne Capabilities

Objective: Providing Scientific Expertise and technological Capabilities that focuses on infrastructure interdependencies and interconnected energy technologies



Our partnerships

Manufacturing	Energy	Information Technology	Pharmaceuticals


Argonne
NATIONAL LABORATORY