**Homeland Security**
Science and Technology

# Critical Infrastructure Resilience Institute (CIRI)

## A DHS Center of Excellence

*From natural disasters to deliberate attacks by hostile entities, critical infrastructure systems face a myriad of challenges. CIRI's interdisciplinary team delivers tools, technologies, and solutions to the businesses and public entities that own and operate critical systems.*

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| **LAUNCH ▶** | 2015 |
| **PARTNERS ▶** | An international group of 34 academic, private industry, and national laboratory partners |
| **EXPERTISE ▶** | Business, computer science, engineering, law, political science, public policy, and urban planning |
| **DHS ALIGNMENT ▶** | Cybersecurity and Infrastructure Security Agency, Federal Emergency Management Agency, U.S. Coast Guard |

## Feedback from Our Partners

*"Having a DHS Center of Excellence like CIRI is vital to our operations... Through our partnership with CIRI, we can get a world-class research team looking at an issue and then we can blend the contributions of our subject matter experts with their researchers to the benefit of both organizations."*

**Dr. Joe DiRenzo,** Director of Research Partnerships
U.S. Coast Guard Research and Development Center, 2018

*"Through its External Advisory Board, CIRI works to build relationships, influence the policy and regulatory environment, and translate technical data into actionable recommendations for businesses across a wide range of fields. It's this industry-orientation that sets CIRI apart from other academic research centers."*

**Ed Hammersla,** Chief Executive Officer
Utilidata, 2018

## Research and Education Capabilities

- Building the business case for infrastructure development
- Informing the policy and regulatory environment
- Developing and deploying new technologies and solutions
- Education and training for the current and future homeland security workforce

**CIRI | CRITICAL INFRASTRUCTURE RESILIENCE INSTITUTE**
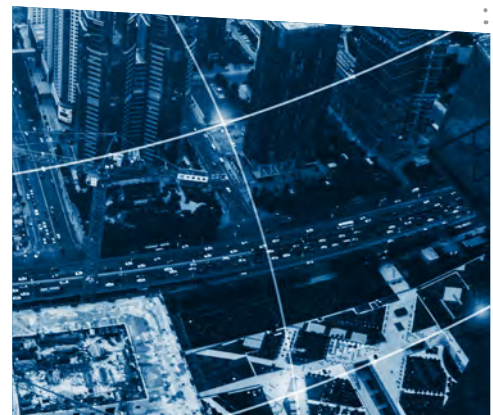A DEPARTMENT OF HOMELAND SECURITY CENTER OF EXCELLENCE

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## University Partners

Binghamton University, NY
Carleton University, Canada
Florida International University, FL*
Georgia Institute of Technology, GA
Howard University, DC*
New York University, NY
Old Dominion University, VA
University of Calgary, Canada
University of Illinois, IL
University of Southern California, CA
University of Tennessee, TN

*Minority Serving Institution (MSI)*

## Enterprise Partners

City of Atlanta
City of New York Department of
    Transportation
DSCG Solutions
Heartland Science & Technology
    Group
Idaho National Laboratory
Karthik Consulting
MITRE Corp.
LMI
MxD
National Center for Supercomputing
    Applications
Oak Ridge National Laboratory
Port Everglades
Sandia National Laboratories
Scriyb
Security Industry Association
Sentara Healthcare
Siemens Corporate Technology Center
Synclesis, Inc.
United States Coast Guard
U.S. TRANSCOM

For a complete list of partners
and more information, please visit
**ciri.illinois.edu**

For more information on DHS
Centers of Excellence, please visit
**www.dhs.gov/science-and-technology/centers-excellence**

# Impacts

### Creating secure and resilient maritime port infrastructure

Maritime commerce in the United States accounts for $4.6 trillion per year in economic activity. CIRI researchers are working with U.S. port owners and operators and the U.S. Coast Guard to develop tools to calculate the operational and financial impacts of potential disruptions and develop effective mitigation and response strategies.

### Improving business resilience and disaster response

Natural disasters cost businesses and municipalities nearly $400 billion over the past two years. CIRI is employing economic modeling and data analytics to help business managers build more resilient businesses that can better prepare for and recover from natural disasters. This work is also helping government agencies and first responders more effectively deliver humanitarian assistance and disaster response services.

### Developing cyber-resilient national critical infrastructure

To reduce losses from cybercrime – approximately $600 billion in 2017 – businesses and government organizations need simple and cost-effective tools to help institutionalize cyber risk management processes.  CIRI developed a cloud-based software application, www. cybersecuredashboard.com, that simplifies conformance to the National Institute of Standards and Technology Cybersecurity Framework, facilitating wide-scale adoption of the standard and enhancing the cybersecurity and resilience of the homeland security enterprise.

### Reducing electromagnetic pulse (EMP) risk

The impact zone of a high-altitude EMP burst 300 miles over Kansas spans a radius of 1,470 miles, enough to cover the entire continental United States. CIRI is developing a software tool that will help leaders make effective decisions regarding mitigating the threats posed by both nuclear and non-nuclear EMPs and geomagnetic disturbances.