

The Department of Energy's  
**CYBER  
SCIENCES  
LABORATORY**  
Protecting the Future of our Enterprise



Bob Osborn  
Associate Administrator and Chief Information Officer

# Problem

Dependency on an IT infrastructure that is inherently insecure.

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NNSA protects sensitive information pertaining to the nuclear stockpile which must remain secure into the future.

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DOE must protect the electrical grid and scientific intellectual property.

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Balancing threat level of WMDs vs Cyber Attacks, and ensuring resources are appropriately allocated.

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# U.S. DEPARTMENT OF **ENERGY**

Has 3 mission areas

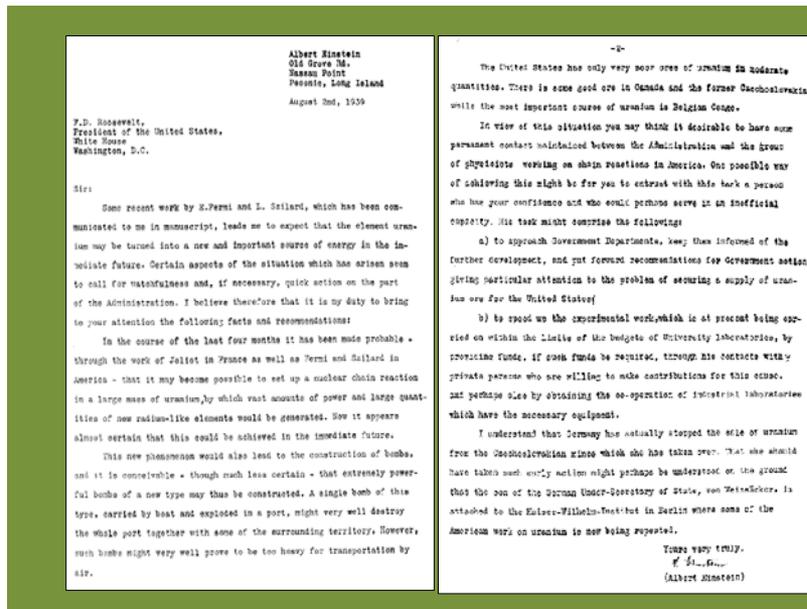
There is a  
**COMMON THREAT**  
to those 3 mission areas

# Cyber Attacks

Albert Einstein wrote  
President Franklin D. Roosevelt

alerting him of the importance of research on nuclear chain reactions

and the possibility that research might lead to  
developing powerful bombs.



Einstein notes in the letter that  
Germany has stopped the  
sale of uranium

and German physicists are  
engaged in uranium research.

# Concepts

A National level effort is necessary to **ensure** that our critical infrastructure and most precious information is **resilient and protected** against the broad range of threats presented by malicious hackers, terrorists, and foreign nations.

CSL provides a **framework and process** to support scientific research, address the most critical cybersecurity challenges, ensure solutions are **“operationalized”**, test them in a physical cyber range, and share them **across Agencies**.

CSL is not intended to impair existing relationships between Lab researchers and sponsoring organizations, rather to promote DOE lab cyber capabilities as a **“cyber center of excellence”** to the U.S. Government.

# PROCESS

↓ Scientific Research

↓ Discovery

↓ Engineering and R&D

↓ Test

↓ Production

↓ Deployment

↓ Disposal

Current environment places emphasis on engineering R&D

Creating a **GAP** in future capabilities

We must work to **fund basic cyber scientific research** within the current programmatic model



# focus on the future of Cybersecurity

"America's economic prosperity in the 21<sup>st</sup>  
century will depend on cybersecurity."  
- President Obama



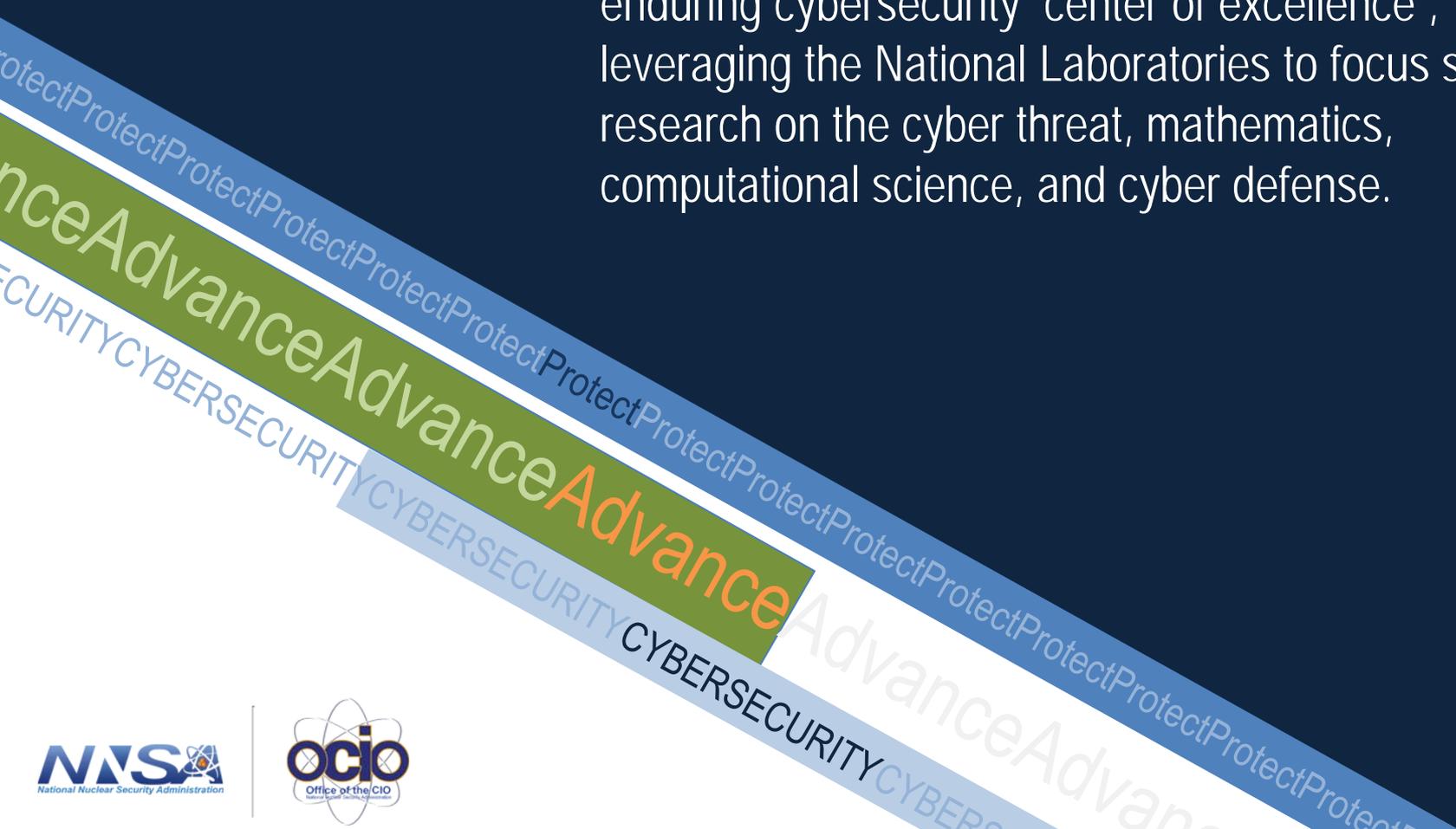
Engineering R&D is important

But it relies on **Basic Scientific Research.**



# CSL {Cyber Sciences Laboratory}

The Cyber Sciences Lab will establish and sustain an enduring cybersecurity center of excellence, leveraging the National Laboratories to focus scientific research on the cyber threat, mathematics, computational science, and cyber defense.



## Exploratory research

initiatives exist in areas such as applied mathematics and computational simulation in support of weapons programs

**BUT**

the cyber **threats**—and their **consequences**—continue to

# GROW

along with the **need** for a well understood process to operationalize **R&D**

# CSL

What is it,  
and what  
does it aim to  
accomplish?

Cyber Scientific Research Center of Excellence

Standard Process for developing and delivering Cyber Capabilities

Method for Providing Sustained Cyber Scientific Research Funding

Partnership Between Government, Industry & Academia

Collaborative Environment

Vehicle to Grow Future Researchers

We are building an  
{Innovation Hub of Excellence}



CSL

# Executive Sponsors

**Bob Osborn**

NNSA, CIO

**Bruce Held**

DOE, Director of the Office of Intelligence & Counterintelligence

**Bob Brese**

DOE, CIO

## National Lab Team {NLT}

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THANK YOU

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