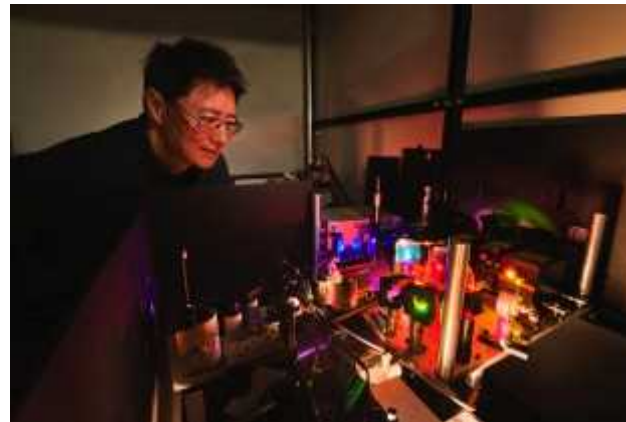
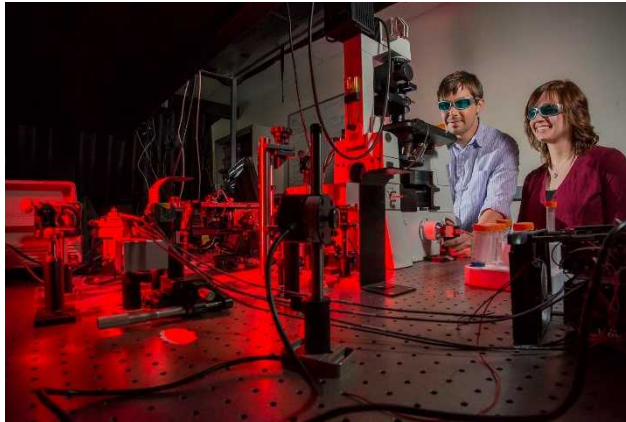


Exceptional service in the national interest



Sandia National Laboratories

David R. White, PhD

Director, Computing and Networking Services



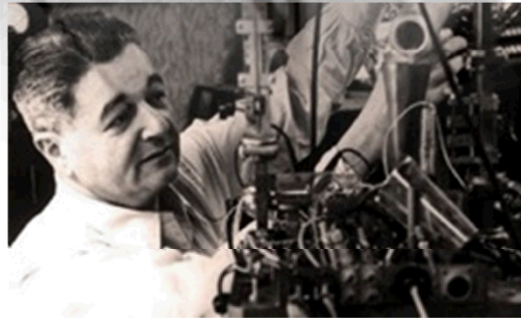
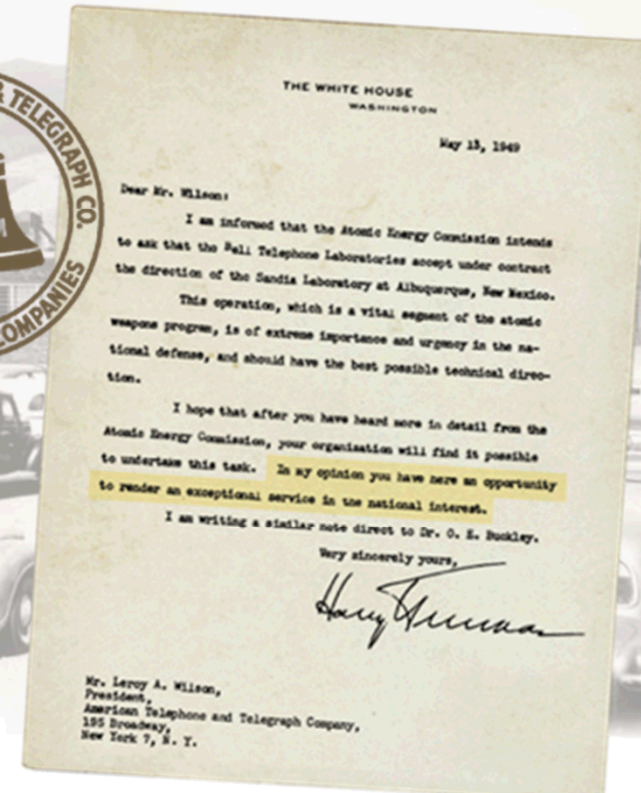
Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND No. SAND2014-17320 PE

Sandia's History

Exceptional service in the national interest

- July 1945: Los Alamos creates Z Division
- Nonnuclear component engineering
- November 1, 1949: Sandia Laboratory established

to undertake this task. In my opinion you have here an opportunity to render an exceptional service in the national interest.



Sandia Sites

Albuquerque, New Mexico



Livermore, California



Kauai, Hawaii



*Waste Isolation Pilot Plant,
Carlsbad, New Mexico*



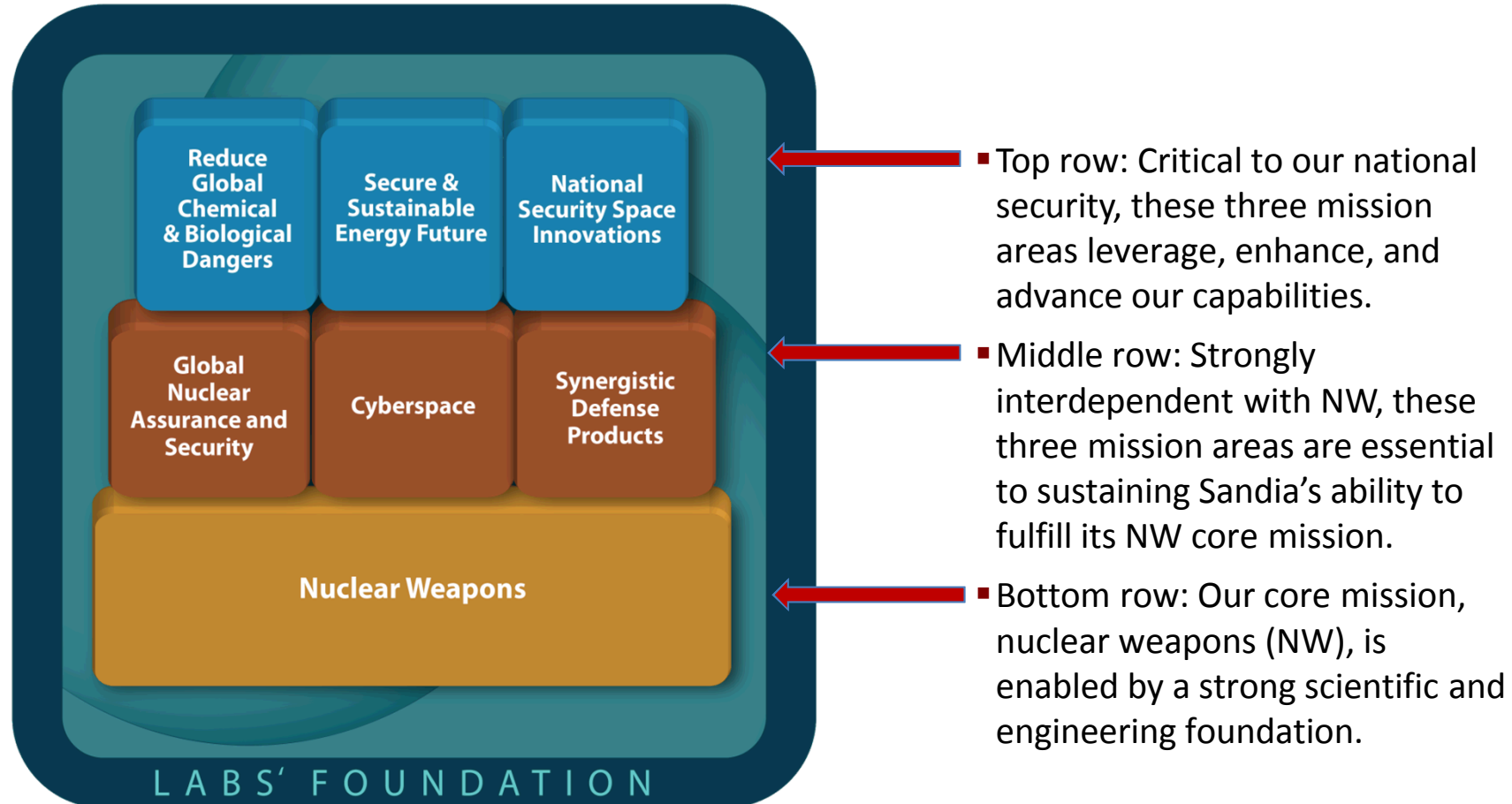
*Pantex Plant,
Amarillo, Texas*



*Tonopah,
Nevada*



National Security Mission Areas



Sandia Addresses National Security Challenges

1950s

Nuclear weapons

Production and
manufacturing
engineering



1960s

Development
engineering

Vietnam conflict



1970s

Multiprogram
laboratory

Energy crisis



1980s

Missile defense
work

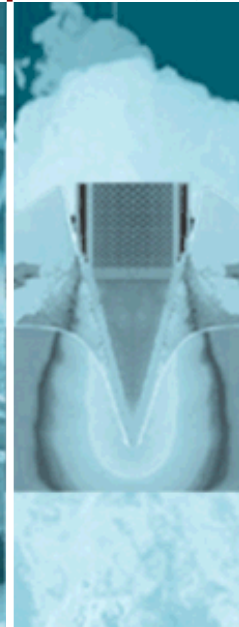
Cold War



1990s

Post-Cold War
transition

Stockpile
stewardship



2000s

START
Post 9/11

National security



2010s

LEPs
Cyber, biosecurity
proliferation

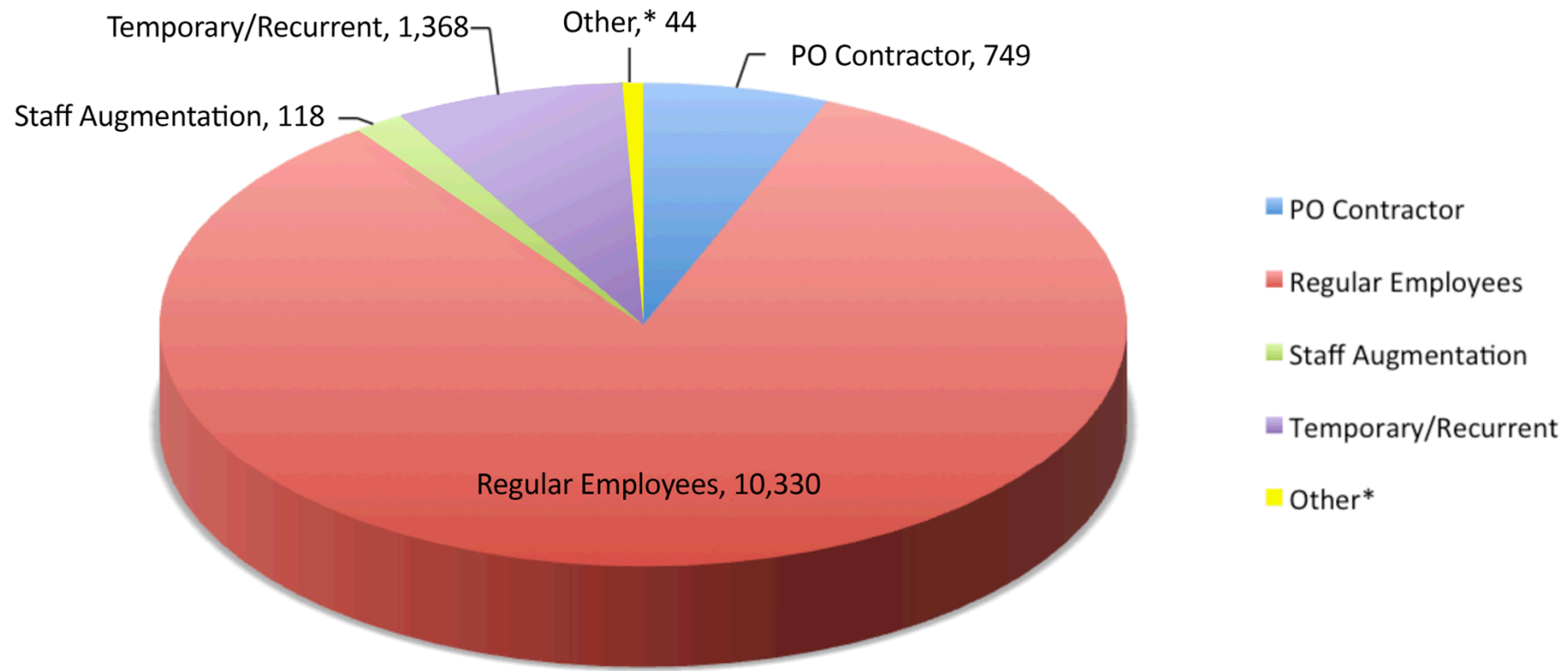
Evolving national
security challenges



Our Workforce

- Total Sandia workforce: 12,609
- Regular employees: 10,330
- Advanced degrees: 5,790 (56%)

Data as of July 20, 2015



** Other badged personnel*

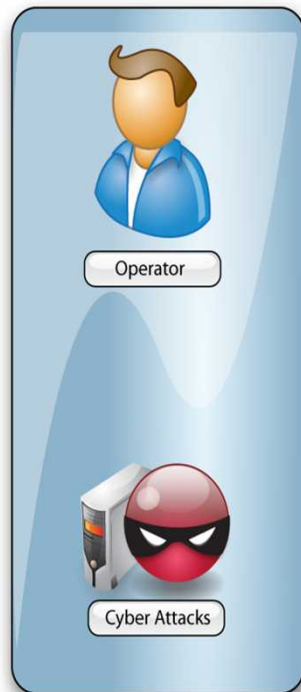
- **Emulytics™**
- Big Data Analytics
 - Behavioral Based Analytics
 - Stream Processing
 - Enterprise Host Based Analytics
- Dynamic Defense (aka Moving Target Defense)
- Automated Red Teaming
- Vulnerability Analysis
- SCRM

The need for cyber engineering

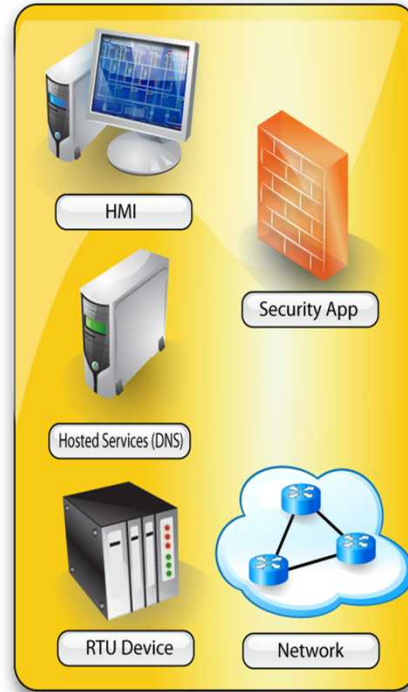


13th Century BC
Bridge

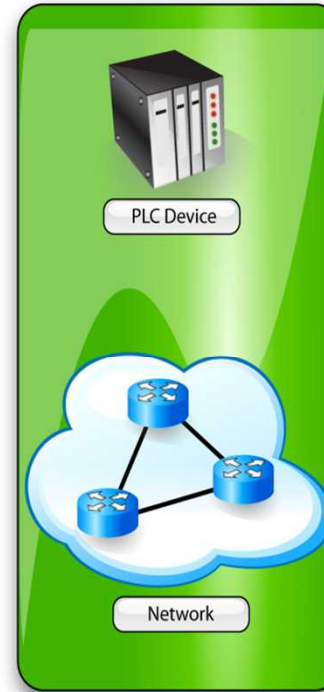
Human



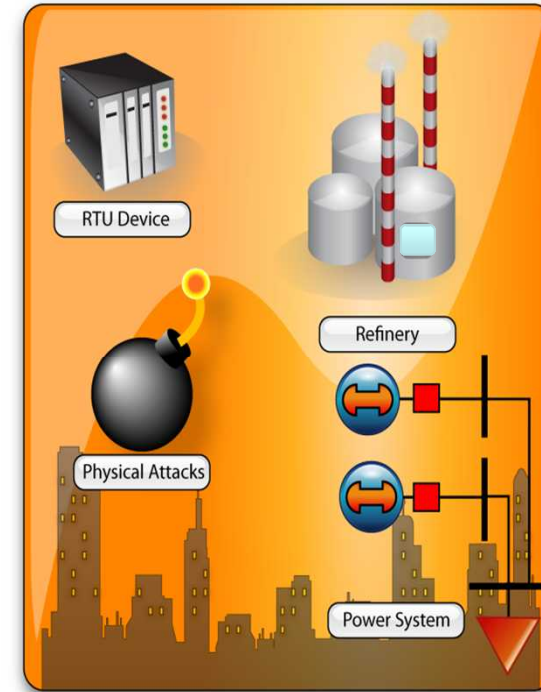
Live



Virtual

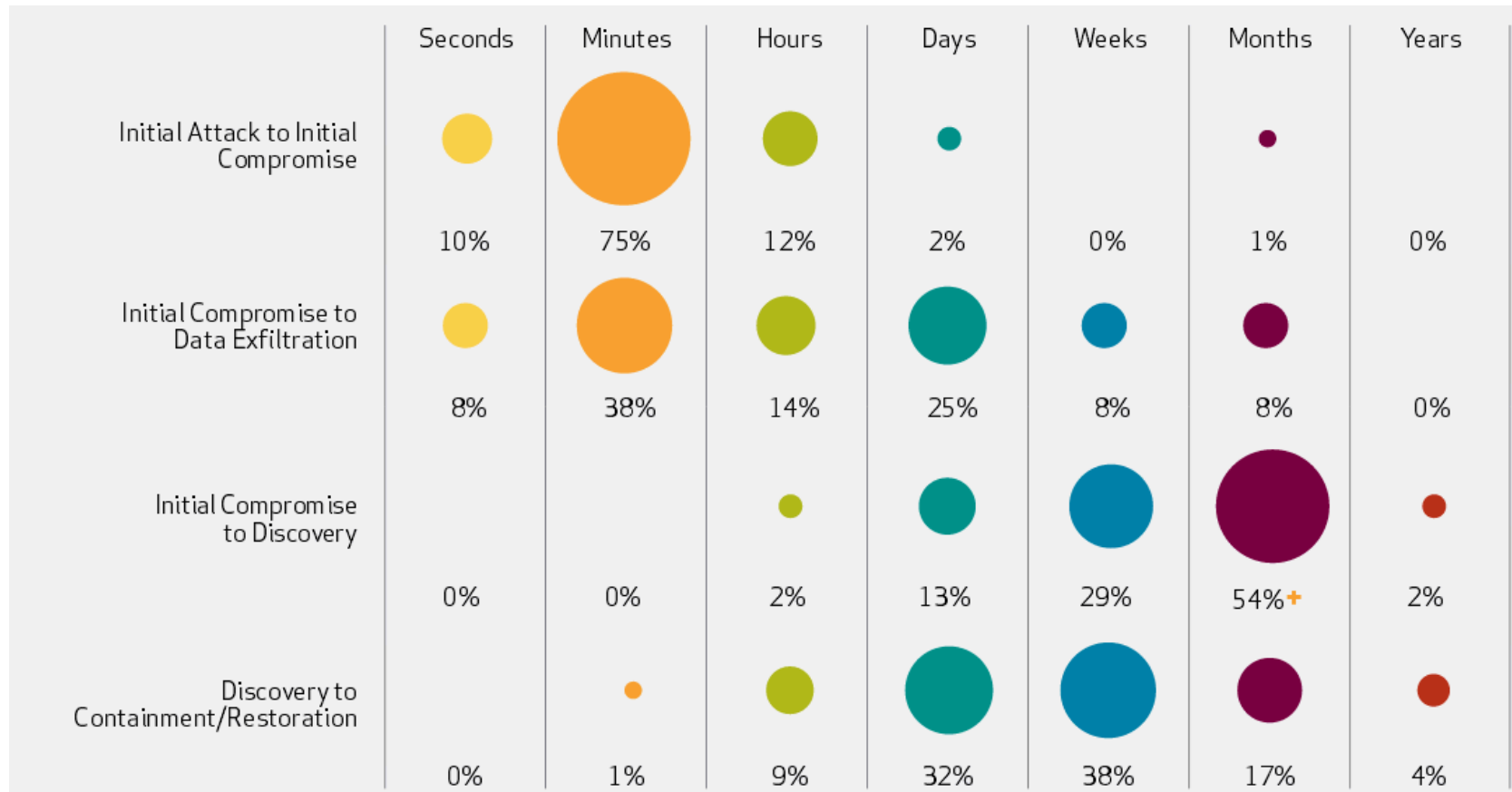


Constructive



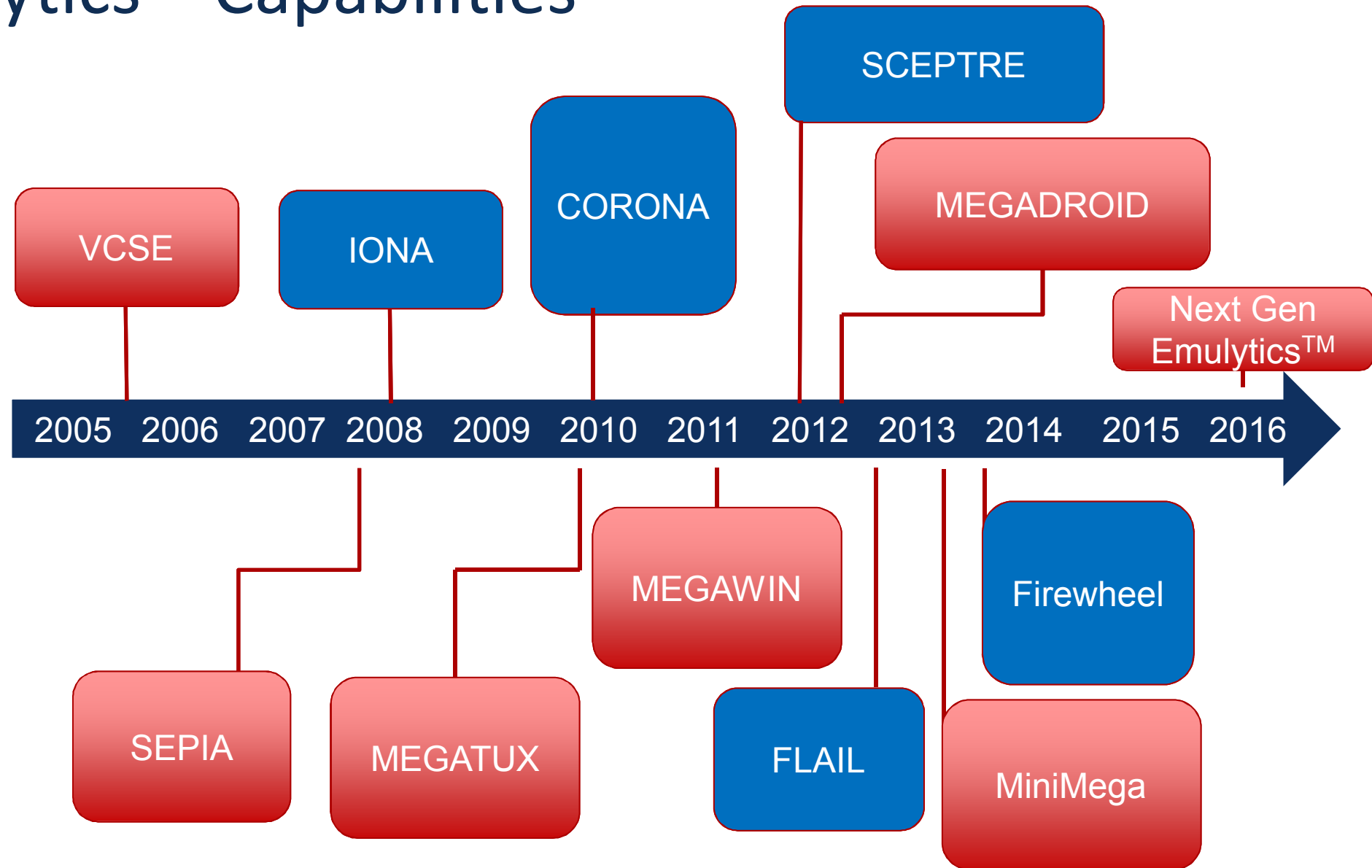
Why Modeling & Simulation?

855 breaches, 174 million compromised records in 2011



Source: Verizon Data Breach Investigation Report 2012

Emulytics™ Capabilities



Impact of Each Mitigation?

