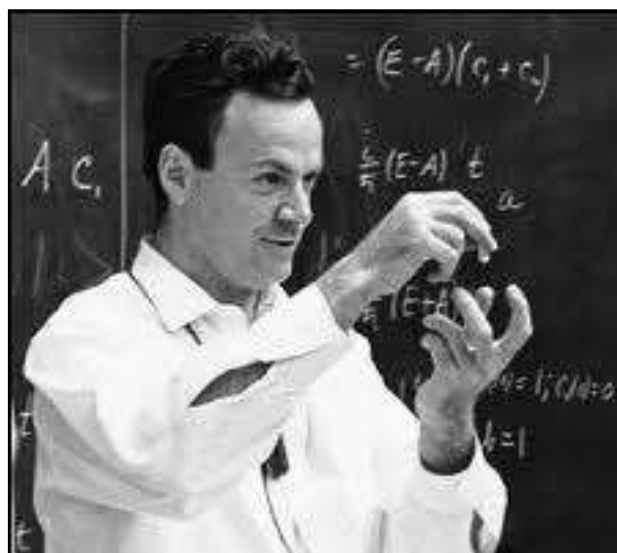


# Partnerships for Innovation at Los Alamos IDC User Forum

April 8, 2015



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**RICHARD P.  
FEYNMAN**  
CENTER FOR INNOVATION

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1994





2003





2007



# Los Alamos: a National Security Science Laboratory

- We anticipate, innovate, and deliver solutions
- We span the spectrum from Discovery through Applied Science to Prototypes
- We use the outstanding science, engineering, and technology from our core stockpile stewardship mission for other national needs

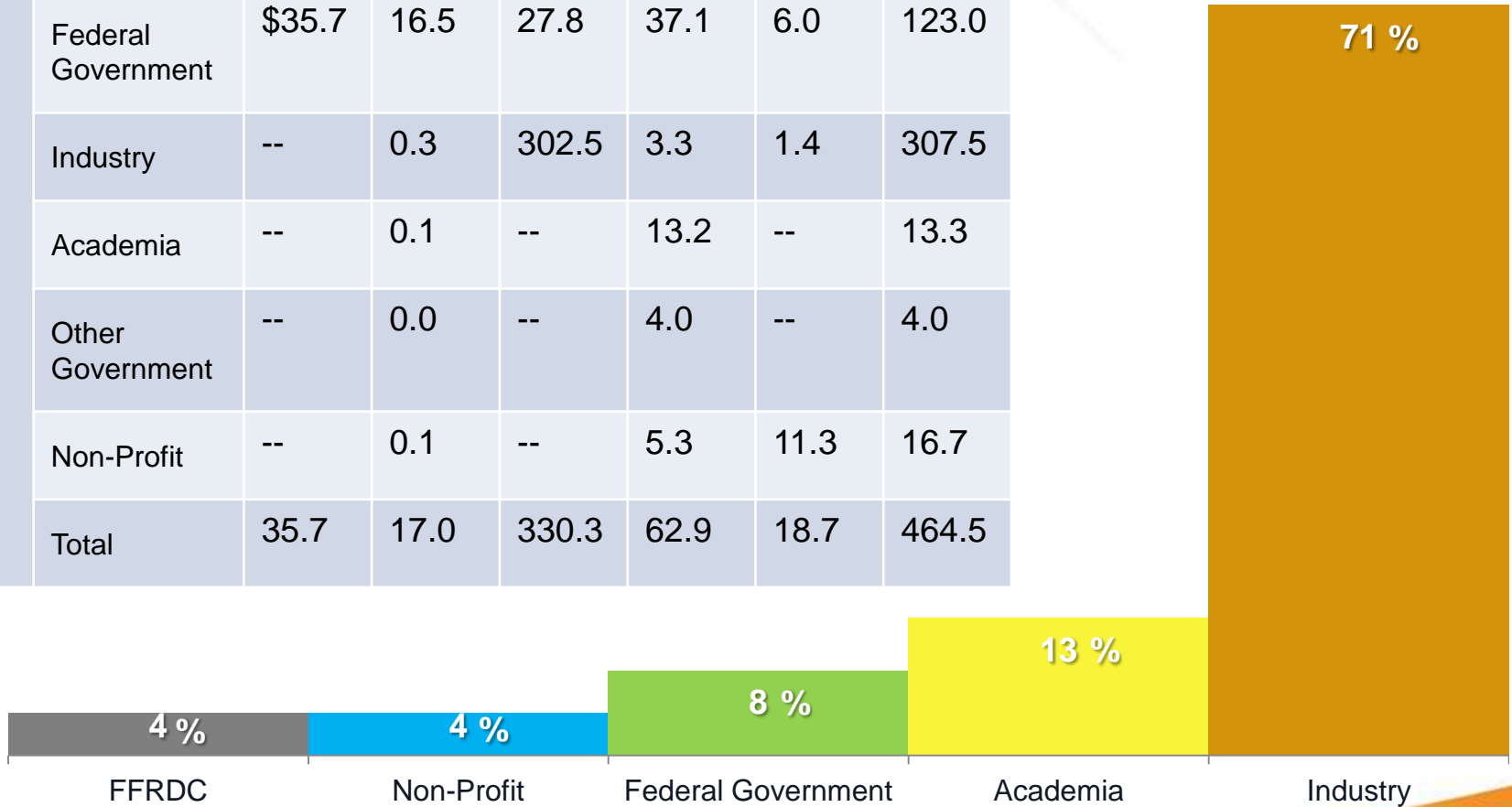


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# R&D Trends and Realities

## Performer of R&D

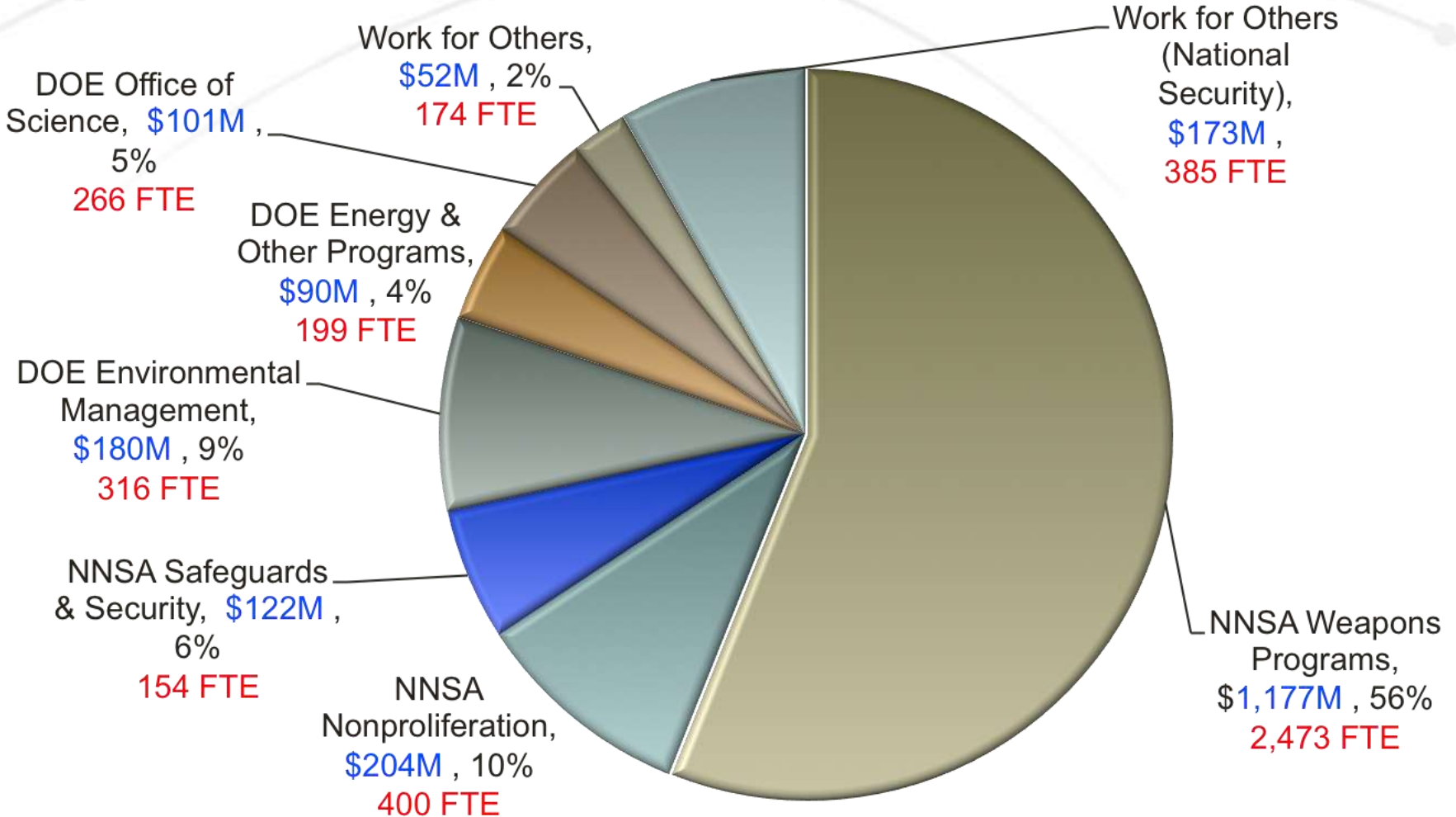
Source of Funds (US\$ Billions)		Federal Gov't	FFRDC	Industry	Academic	Non-Profit	Total
	Federal Government	\$35.7	16.5	27.8	37.1	6.0	123.0
	Industry	--	0.3	302.5	3.3	1.4	307.5
	Academia	--	0.1	--	13.2	--	13.3
	Other Government	--	0.0	--	4.0	--	4.0
	Non-Profit	--	0.1	--	5.3	11.3	16.7
	Total	35.7	17.0	330.3	62.9	18.7	464.5



2014 Global R&D Funding Forecast, Battelle and R&D Magazine

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# Partnerships Emerging Across Multiple Mission Areas



FY13 LANL Budget Authority = \$2.1B

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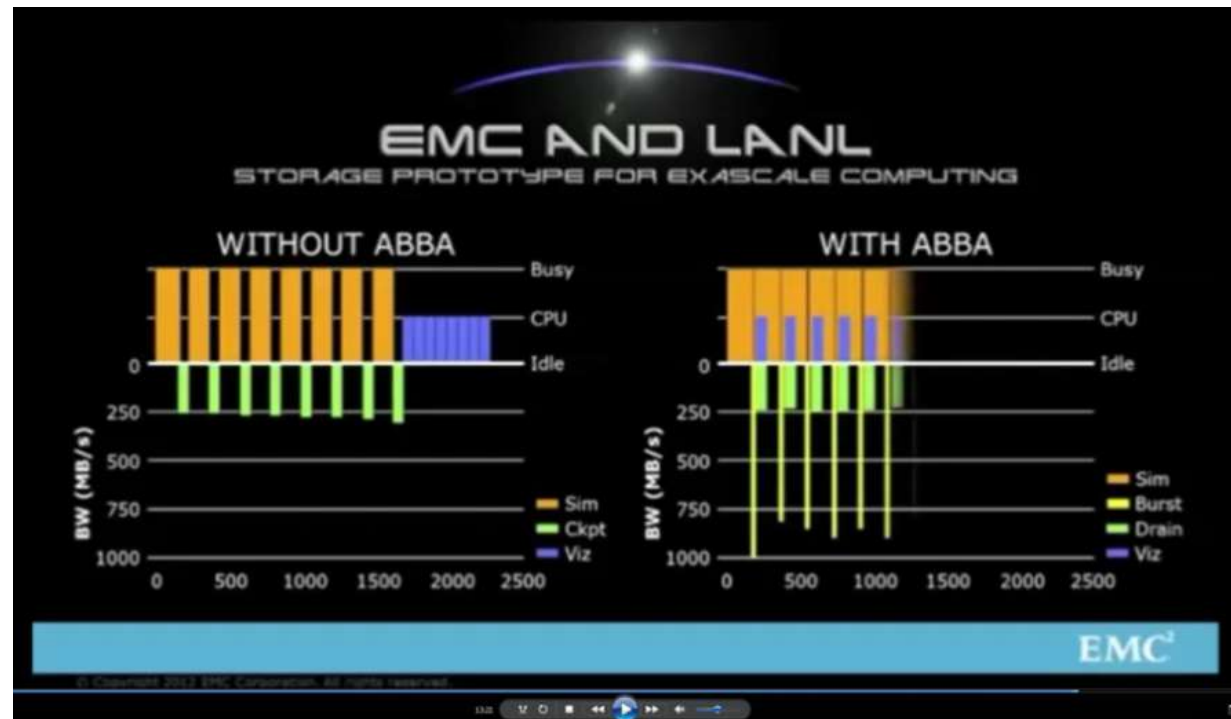


# Example #1: EMC<sup>2</sup>

## High-performance computing and data storage



*"We are thrilled to work with some of the nation's greatest scientists at LANL...to collaboratively innovate in an effort to help maintain our nation's leadership in extreme computing, on the road to exascale," Percy Tzelnic, senior vice president & EMC Fellow.*



### ABBA (Advanced Burst Buffer Appliance)

Flash appliance that helps HPC hardware run faster and smoother

### Future Directions

Cyber Security, Cloud Applications

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# Example #2: Chevron The Alliance for Advanced Energy Solutions



**INFICOMM: Wireless Data Communication**



**Trapped Annular Pressure Shrinkage Spacer (TAPSS)**



**Oil and Gas Metering**



**Moving energy technologies to the marketplace**

22 Active Projects

>350 Patents

6 Technologies in commercialization stage



**Drilling Optimization**

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# Innovation Doctrine

## Principles that define our approach to innovation:

- The US technology advantage in national security is tied to our ability to innovate. Government is no longer the primary driver of innovation in *most* technology areas,
- Innovation means the transition of ideas into technology for an end use. The optimal means to achieve this is through strategic partnerships with industry,
- Los Alamos must prove its ability to innovate, for multiple sponsors, through competition for ideas and resources. Our leadership status is not guaranteed,
- Competence in creating valuable Intellectual Property is essential for innovation,
- The ability to move at the speed of business (fast, fair, valuable transactions driven by an innovation strategy) is required to compete in a modern R&D enterprise,
- Success in innovation results in equities for programs, inventors, and capabilities,
- Our partners tell the most powerful stories about success in innovation, driving public awareness of the Laboratory, its people and programs,
- Innovation occurs at many points in the organization, all are important to remain healthy.

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# Supporting Los Alamos Programs



## *Express Licensing*

- Quick, easy access to LANL Technologies
- Pre-determined licensing terms & agreement
- Broad LANL technologies (80+ patents and 30+ software)

## *New Mexico Small Business Assistance Program*

NM small businesses with a technical challenge can seek assistance from LANL/Sandia scientists or engineers for testing, design consultation and access to equipment or facilities.



VAF

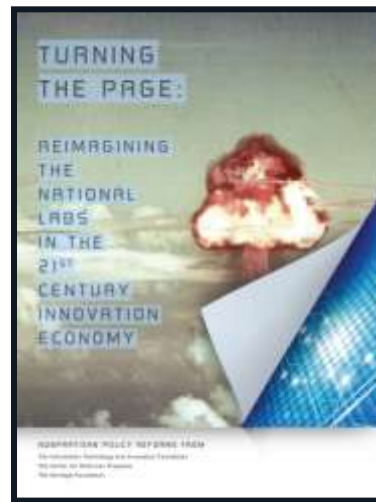
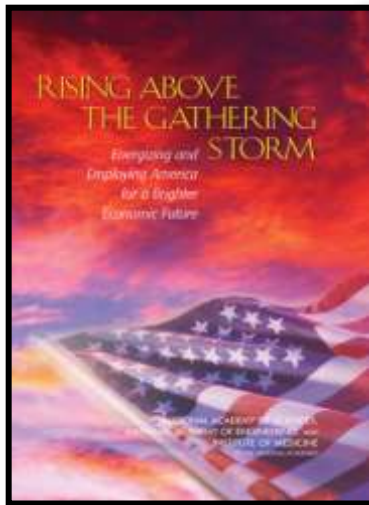
## **LANL Venture Acceleration Fund (VAF)**

Investments in technology commercialization. The program helps Northern New Mexico companies commercialize technology and take it to market faster.

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# The pace and complexity of the Nation's challenges have accelerated...but the Labs have not kept stride



**“The federal government must reform the labs from their 20<sup>th</sup>-century atomic energy roots to create 21<sup>st</sup>-century engines of innovation.”**

*Turning the Page: Reimagining the National Labs in the 21<sup>st</sup> Century Innovation Economy, 2013*

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# Key points to mention in your presentation

Note: Presentations should be 15-20 minutes...we will allow 5 additional minutes for questions.

1. Who are you?
2. Highlights of one or more specific examples of collaboration/use of your facility etc (goals, who was engaged etc)
3. Lessons learned from those examples: what worked, what didn't, and in your opinion...why?
4. How have you internalized those lessons...i.e. have they changed how you conduct partnerships?
5. Looking ahead...How can these programs/collaborations promote and expand industrial use of HPC?

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