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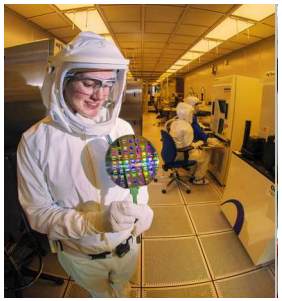
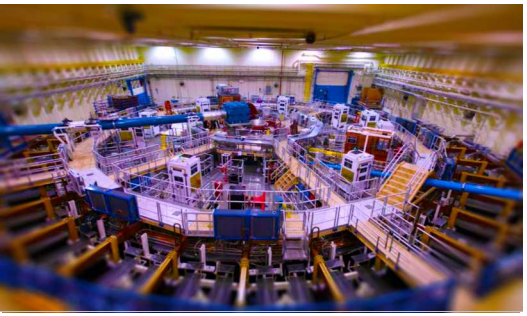




Sandia National Laboratories

Exceptional service in the national interest

Chief Technology Officer Update

Presentation to Sandia Emeritus 2016

March 15, 2016

Rob Leland

Vice President, Science & Technology

Chief Technology Officer

U.S. DEPARTMENT OF ENERGY

National Nuclear Security Administration

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. SAND2016-1975 PE

Sandia Science & Technology Park (SS&TP)

Sandia National Laboratories

- Master-planned technology community
- Affiliated with Sandia
- Provides ease of access, close proximity to Labs
- Internationally recognized

Public-private partnership

Sandia National Laboratories

ORIGINAL PARTNERS

- Created vision
- Provides executive-level champion
- Provides executive director and program staff
- Manages day-to-day activities, including marketing

Sandia National Laboratories

SANDIA SCIENCE & TECHNOLOGY PARK DEVELOPMENT CORPORATION

- Nonprofit entity that oversees the Park
- Helped shape vision
- Provides Chairman of the Board
- Manages grants and infrastructure

City of Albuquerque Tricentennial 1706–2006 New Mexico

- Shared vision
- Funds infrastructure

Park MOU Signatories

LAND OWNERS

APS

UDC Union Development Corporation

New Mexico State Land Office

- Sell and lease land
- May build and own buildings

OTHER KEY PARTNERS

Provided planning funds

Provide telecommunications infrastructure

Provide infrastructure

PNM

Provide economic impact analyses

Provide leadership and support

SS&TP metrics and economic impact

Sandia National Laboratories

METRICS	
Number of Companies	40
Number of Employees	2304
Number of Buildings	25
Acreage Developed (out of 340)	125
Funds In to Sandia from Park Companies since 1998	$17.7 million
Contracts from Sandia Procurement to Park Companies since 1998	$408 million
Contracts between Park Companies since 1998	$10.4 million
Public and Private Investment in the Park since 1998	
Public	$89.0 million
Private	$279.3 million
Total	$368.3 million
ECONOMIC IMPACT	
Cumulative Impact on Taxable Personal Consumption (Goods and Services)	$2.2 billion
Cumulative Increase in Wage and Salary Disbursements Attributable to Park Activities	$3.7 billion
Average Salary for Each Full-Time Job in the Park	$83,300
Average Salary for Each Full-Time Job in Albuquerque	$41,900

Next phase for Sandia Science & Technology Park

Center for Collaboration & Commercialization (C3)

Sandia National Laboratories

Vision: "Sandia's Innovation Ecosystem" – A place located in SS&TP that would bring Sandia and its partners together to stimulate open collaboration and the commercialization of our technologies

Strategy: Increase Sandia's collaboration and commercialization activities

Strategic Objectives:

- Create an inspiring and energizing place that would serve as a "public face" for Sandia, provide access to Sandia, and build linkages with the external community
- Provide programs and services to maximize interaction with our broad array of partners – industrial/private sector, academic, and government – and facilitate successful technology commercialization

Proposed C3 facility

50,000 square feet
(20,000 square feet for Sandia)

Goal: LEED Gold Certified

Place (proposed)

- 50,000-square-foot facility, located in the Sandia Science & Technology Park
- **Private sector's role**
  - Build a private sector building on private sector land
  - Partner offices
  - Incubator and co-working space
  - 400+ person conference room and small conference rooms
  - Café/Catering kitchen
  - Social spaces
- **Sandia's role**
  - Sandia would lease 20,000 square feet
  - Sandia offices
  - Sandia conference room
  - Sandia technology showroom

Programs/Services

- Entrepreneur exploration
- Technology showcase
- Interactive IP library
- Technology maturation
- Small business assistance
- Investor access
- Scientific and technical consulting
- Retiree mentors

Leadership actions

- **October 2014:** Sandia hosts news conference to announce C3
- **January 2015:** Rob Leland agrees to serve as Executive Level Champion for Sandia
- **January 2015:** General Klotz cites C3 in discussion with Kirtland Partnership Committee
- **March 2015:** U.S. Senator Martin Heinrich introduces Microlab Technology Commercialization Act
  - Accelerate technology transfer by establishing off-campus microlabs to serve as "front doors" to national laboratories
  - Incorporated into the National Defense Authorization Act

- **April 2015:** General Klotz cites C3 in testimony before U.S. Senate Committee on Armed Services Subcommittee on Strategic Forces
- **July 2015:** Labs Director Jill Hruby agrees to support and move forward with C3
- **September 2015:** Sandia Field Office manager Jeff Harrell briefed

Entrepreneur Exploration Program

- Invigorate – Inspire - Increase
  - Invigorate entrepreneurial culture
  - Inspire entrepreneurs
  - Increase number of entrepreneurs
- Entrepreneur database (525+ Sandians)
- Events (400+ Sandia participants)
  - Entrepreneur Office Hours
  - Entrepreneur Roundtables
  - Entrepreneur Workshops
  - National Speakers Series (coming soon)

Sandia's commitment

- Lease space in C3, a multi-tenant facility to be built by the private sector on private sector land (less than half the space in the proposed building)
- Provide programs and services in C3, such as licensing support, small business assistance, entrepreneurial training, technology maturation, and year-round showcase
- Align with city of Albuquerque and University of New Mexico efforts

Innovation Corridor

Innovate ABQ
- To be developed
- +/- 7 acres
- Innovation, Office, Residential
- Live, work, play concept
- Leveraging physical proximity to UNM and Downtown

C3
- To be developed
- 50,000 sf building
- Public face of Sandia, easy access to Sandia
- Leveraging physical proximity to Sandia

ABQid/Verge Building

Air Force Research Laboratory

BioScience Center

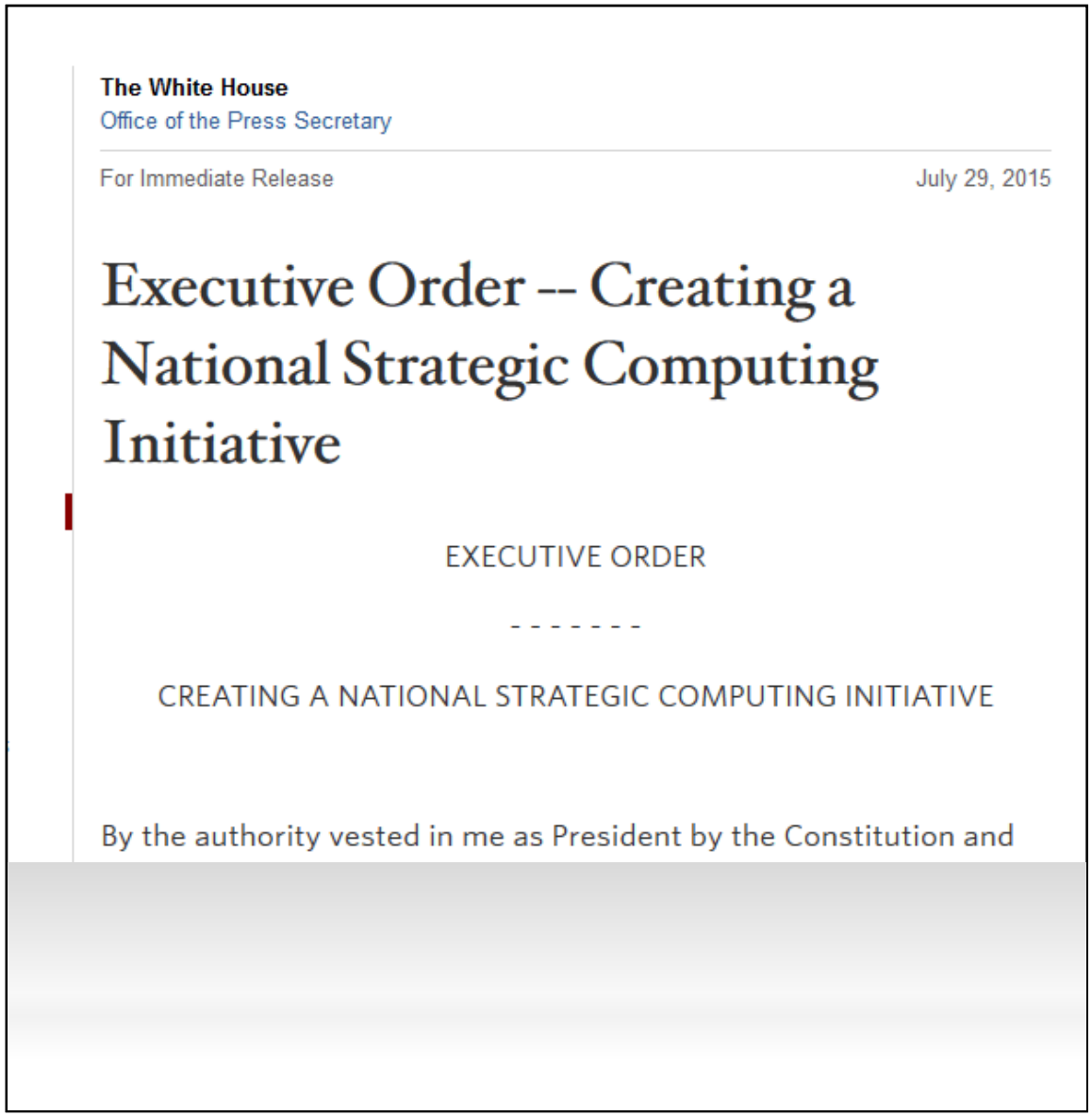
FatPipe

Sandia Science & Technology Park

Technology Ventures Corporation

WESST

National Strategic Computing Initiative



The White House
Office of the Press Secretary

For Immediate Release July 29, 2015

Executive Order -- Creating a National Strategic Computing Initiative

EXECUTIVE ORDER

- - - - - - -

CREATING A NATIONAL STRATEGIC COMPUTING INITIATIVE

By the authority vested in me as President by the Constitution and

National Strategic Computing Initiative (NSCI)

Sandia National Laboratories

- Effort to create a cohesive, multi-agency strategic vision and federal investment strategy in high-performance computing (HPC)
- HPC systems can solve computational problems that are beyond the capability of small- to medium-scale systems
- Vital to nation's interests in science, medicine, engineering, technology, and industry
- NSCI designed to maximize the benefits of HPC for economic competitiveness and scientific discovery
- Strategy to be executed in collaboration with industry and academia

NCSI objectives

Sandia National Laboratories

1. Accelerate delivery of an exascale computing system (hardware and software) that provides 100X the performance of current 10 petaflop systems
2. Increase coherence between technology base used for modeling and simulation and that used for data analytic computing
3. Establish, over the next 15 years, a viable path forward for future HPC systems in the post-Moore's Law era
4. Increase the capacity and capability of an enduring national HPC ecosystem using a holistic approach that addresses factors such as
   - Networking
   - Workflow
   - Downward scaling
   - Foundational algorithms and software
   - Accessibility
   - Workforce development
5. Develop an enduring public-private collaboration to ensure that the benefits of the research and development are shared by government and industry/academia

NCSI roles and responsibilities

Sandia National Laboratories

1. Lead agencies – Develop and deliver next generation of integrated HPC capability, engage in mutually supportive R&D, and develop the workforce
   - Department of Energy (Office of Science; National Nuclear Security Administration)
   - Department of Defense
   - National Science Foundation
2. Foundational research and development agencies – Conduct fundamental scientific discovery work and associated advances in engineering to support NCSI objectives
   - Intelligence Advanced Research Projects Activity
   - National Institute of Standards and Technology
3. Deployment agencies – Develop mission-based HPC requirements to influence early stages of the design of new HPC systems; seek input from private sector & academia
   - NASA
   - FBI
   - National Institutes of Health
   - Department of Homeland Security
   - National Oceanic and Atmospheric Administration
4. Executive Council – Ensure accountability for and coordination of research, development, and deployment activities