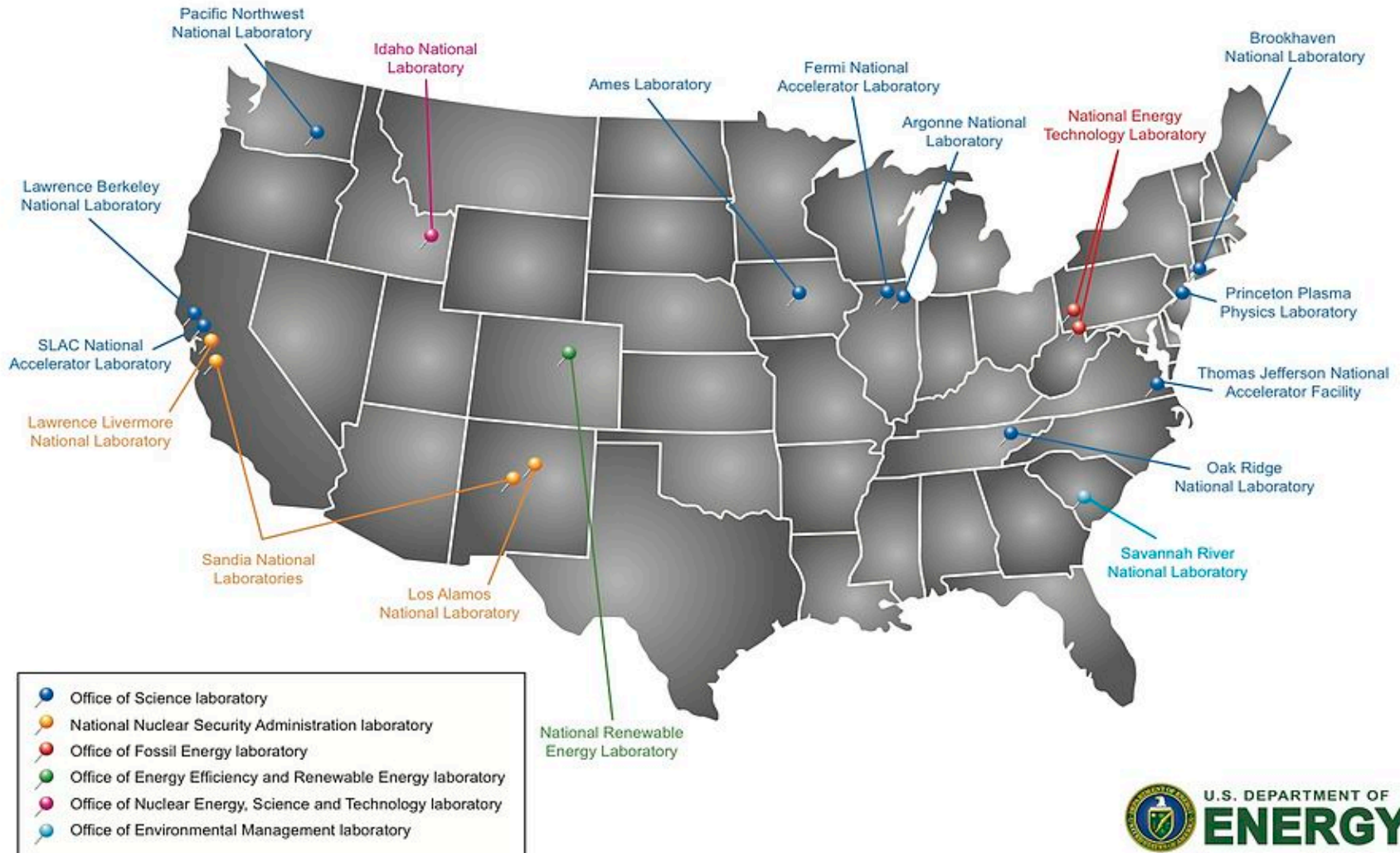# Office of Science's
Lab Planning and Lab Appraisal Processes

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Advanced Scientific Computing Research

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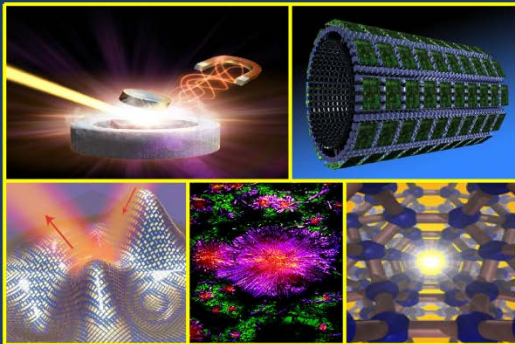# Department of Energy National Laboratories

Pacific Northwest National Laboratory

Idaho National Laboratory

Ames Laboratory

Fermi National Accelerator Laboratory

Argonne National Laboratory

National Energy Technology Laboratory

Brookhaven National Laboratory

Lawrence Berkeley National Laboratory

Princeton Plasma Physics Laboratory

SLAC National Accelerator Laboratory

Thomas Jefferson National Accelerator Facility

Lawrence Livermore National Laboratory

Oak Ridge National Laboratory

Sandia National Laboratories

Los Alamos National Laboratory

Savannah River National Laboratory

National Renewable Energy Laboratory

- Office of Science laboratory
- National Nuclear Security Administration laboratory
- Office of Fossil Energy laboratory
- Office of Energy Efficiency and Renewable Energy laboratory
- Office of Nuclear Energy, Science and Technology laboratory
- Office of Environmental Management laboratory

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SC Lab Planning

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The U.S. Department of Energy's Ten-Year-Plans for the Office of Science National Laboratories

FY 2015

- **FY 2006 Energy and Water Development Appropriations Bill required DOE to produce business plans for each of the national Laboratories**

- **Even though the requirement does not exist today, SC recognized the importance of the planning process as an element of its stewardship responsibility for these laboratories.**

  - **Each year Laboratory Leadership teams are asked to define a long-range (10-year) vision for their institution**

  - **Provides a starting point for discussion between SC leadership and each laboratory about the laboratory's future direction**
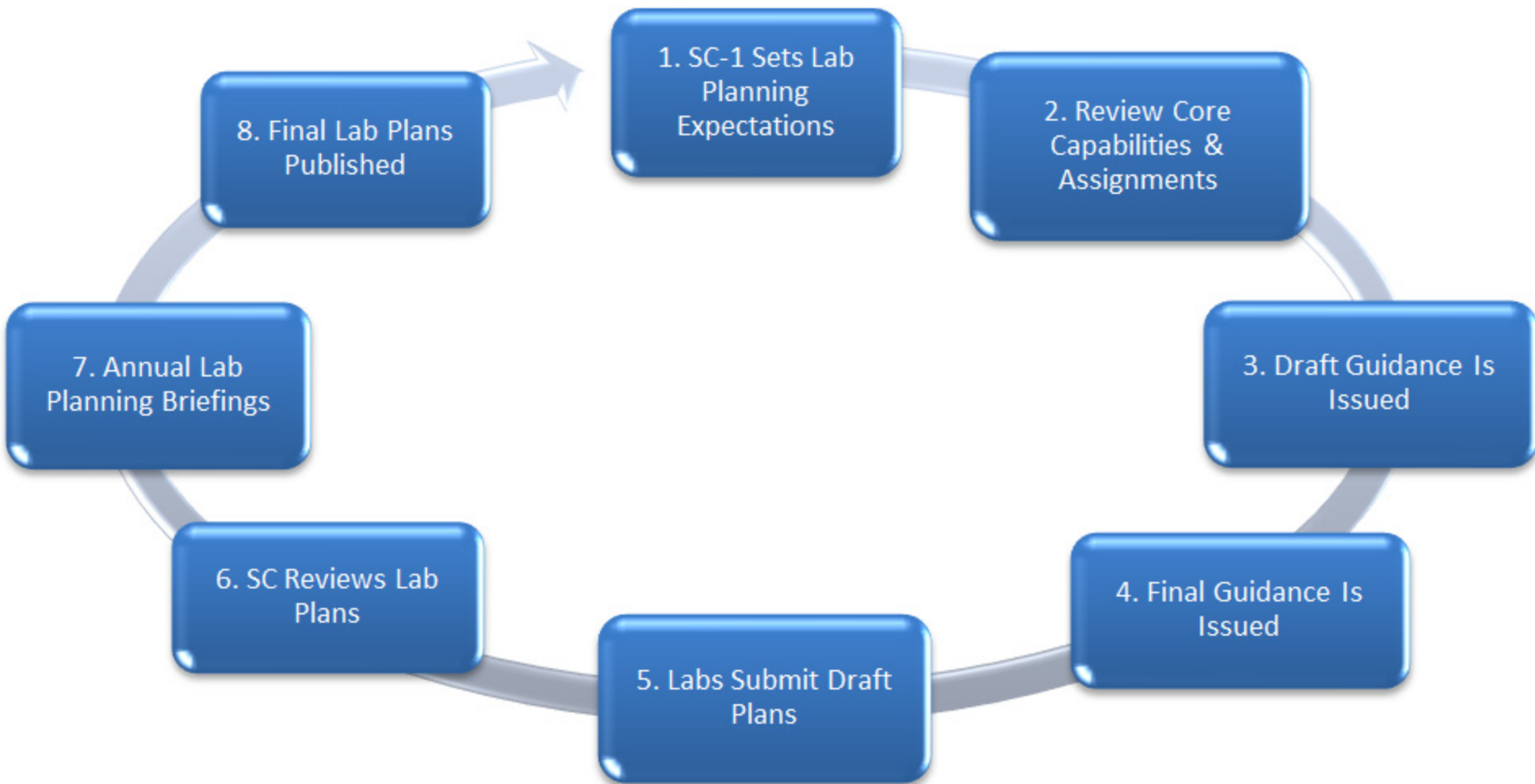
http://science.energy.gov/~/media/lp/pdf/laboratory-planning-process/SC_Consolidated_Laboratory_Plans.pdf

Lab Plan Process

2015 Lab Core Competencies

SC uses three criteria to define core capabilities. They must: 1) encompass a substantial combination of facilities and/or teams of people and/or equipment; 2) have a unique and/or world-leading component; and 3) be relevant to a discussion of the missions of the DOE, National Nuclear Security Administration, (NNSA), and the Department of Homeland Security (DHS) missions.

Categories of Core Capabilities	AMES	ANL	BNL	FNAL	LBNL	ORNL	PNNL	PPPL	SLAC	TJNAF
Accelerator Science		X	X	x	x	x			X	X
Advanced Computer Science, Visualization, and Data		X			x	x	X			
Applied Materials Science and Engineering	x	X	X		X	x	x			
Applied Mathematics		X			X					
Applied Nuclear Science and Technology		X	X		x	x	x			x
Biological Systems Science			X		x	x	x			
Chemical and Molecular Science	x	X	X		x	x	x		X	
Chemical Engineering		X	X		x	x	x			
Climate Change Science			X		x	x	x			
Computational Science					x	x				
Condensed Matter Physics and Materials science	x	X	x		x	x			X	
Environmental Subsurface Science					x	x	X			
Large Scale User Facilities/Advanced Instrumentation		X	x	x	x	x	X	X	x	X
Nuclear Physics		X	x		x	x				x
Particle Physics		X	x	x	x				X	
Plasma and Fusion Energy Science						X		x		
Systems Engineering and Integration		X	x		x	x	x			

2015 Major Lab Plans Topic Areas

- *Mission/Overview:* Comprises a top-level summary of the laboratory that covers everything from the history and location of the laboratory, to a list of its current core capabilities and a profile of its staff.

- *Lab-at-a-Glance:* Outlines the laboratory's major sources of funding and overall costs of operation and provides a snapshot of the laboratory's human capital assets.

- *Current Laboratory Core Capabilities:* Overview of a laboratory's current core capabilities. These descriptions are intended to articulate the niche that each laboratory holds in the SC complex relative to the other SC laboratories so as to easily distinguish these institutions from one another.

- *Science Strategy for the Future/Major Initiatives:* Provides the basis for an in-depth discussion between the laboratory and the SC leadership about the laboratory's vision for the future. This discussion occurs in the context of a complete vision for a healthy, world-class laboratory and the resource needs and risks associated with accomplishing that vision.

- *Work for Others (WFO):* laboratories overall strategy and vision for the WFO program at the laboratory and to articulate how WFO activities contribute to and strengthen the laboratory's core capabilities and ability to deliver the DOE mission.

- *Infrastructure/Mission Readiness:* Ties mission readiness to laboratory facilities and infrastructure by identifying gaps and plans to fill those gaps. It also serves as SC's equivalent of the Ten Year Site Plan required by DOE Order 430.2b.

- *Human Resources:* Laboratory's perspective on the gap between its current human capital and an optimal one, the obstacles it is encountering with respect to developing a mission-ready workforce, and the actions it is taking to address these obstacles.

- *Cost of Doing Business*: Major cost drivers and to discuss methods of mitigating those factors.

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2016 Lab Planning Changes

- **Will include a new section on Lab computing**
  - The computing overview covers both R & D computing and commodity IT.
    - R & D computing is defined as computation resources, ranging from individual data-collection computers to supercomputers, used in scientific discovery, or in other roles that directly support the laboratory mission.
    - Commodity IT is defined as conventional information technology resources similar to those that would be found in any operational business.
  - For each of these categories, submit an overview that includes: 1) existing systems, including networking capabilities, 2) a table of planned major procurements, and 3) a gap analysis pointing towards future needs. The total length of this section, excluding tables, should be less than 1 page.
- **Will expand to Energy Laboratories**
  - INL
  - NETL
  - NREL

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2016 Lab Briefing Schedule

FY 2016 Lab Plan Briefing Schedule

June 20th – July 21th

Monday	Tuesday	Wednesday	Thursday	Friday
20	21	22	23	24
27	28	29	30	1
4 **Independence Day**	5	6	7	8
11	12	13	14	15
18	19	20	21	

Lab Appraisal Process

Since 2006, SC has conducted a yearly evaluation of the scientific, technological, managerial and operational performance of the contractors who manage and operate its ten national laboratories. Designed to

- Improve transparency of the process
- Raise the level of involvement by SC leadership
- Increase consistency in the way that the labs are evaluated
- More effectively incentivize contractor performance by tying performance to fee earned, contract length and public release of grades

http://science.energy.gov/lp/laboratory-appraisal-process/

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Eight Performance Goals

1. Mission Accomplishment (Delivery of S&T)
2. Design, Construction and Operation of Research Facilities
3. Science and Technology Project/Program Management
4. Leadership and Stewardship of the Laboratory
5. Integrated Environment, Safety and Health Protection
6. Business Systems
7. Facilities Maintenance and Infrastructure
8. Security and Emergency Management

- For Goals 1-3 SC solicits input from all organizations that spend more than $1 million at the laboratory
- For 2016, established goal/objective language related to public access support and, specifically, submission of accepted manuscripts as a result of ASCR's recommendations for OSTI.

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Performance Evaluation and Measurement Plan (PEMP)

- Opportunities for SC Programs and Site Offices to identity a small number of **Notable Outcomes** that illustrate or amplify important features of a laboratory's performance for the coming year.

- Performance Goals, Objectives and Notable Outcomes are documented and appended to respective lab contract at the beginning of each year.

- SC appraisal process uses a 0-4.3 scoring system with corresponding grades for each Performance Goal and Objective.
  - A grade of B+ for performance at the Objective level that "meets SC's expectations.
  - SC intentionally set its expectations associated with a B+ very high, and does not equate performance below a B+ as necessarily unsatisfactory, but as offering opportunity for improvement.
  - The grade for each of the Performance Goals is based on a weighted computation of the scores of the individual Performance Objectives identified for each Goal.

ASCR Example

- For 2015, ASCR generated a Notable Outcome for NERSC and LCFs to **define a program review process to collect exascale application requirements from the Office of Science programs by the end of FY 2016 and present the plan to ASCR by February 27, 2015.   The first exascale application program review should be held by September 30, 2015. (Objective 2.1)**

- **Questions?**