

# Laboratory Directed Research and Development (LDRD) Review by ASCAC\*

Martin Berzins

- (i) Overview of LDRD
- (ii) Committee charge and composition
- (iii) Review Process

\* On behalf of and with BERAC, BESAC, FESAC, HEPAP, NSAC, DPAC EMB and NEAC

# Overview of LDRD

- Large program (4.15% of certified lab cost base in 2015), running in some form since 1950s
- Approximately 1700 projects per year: mixture of strategic and “blue sky” topics.
- The average spend is \$300k per project with some variations
- About 2000 papers and 400 inventions per year result.
- About 650 (2005) to 900 (2015) postdocs fully or partially supported
- On average about 30% of all lab post-docs fully or partially supported
- Higher percentages of postdocs supported at LANL , LLNL and SNL
- Majority of LDRD projects include early career researchers

# Committee Charge

The June 17, 2015, the interim report of the Secretary of Energy Advisory Board (SEAB) Task Force on DOE National Laboratories recommended an independent peer review of the LDRD program impacts and process of four laboratories, evaluating up to ten years of funded projects.

**ASCAC is asked to review the LDRD program processes and the impact of LDRD at four of the DOE Labs, to include at least one SC Lab, one NNSA Lab, and one of the applied energy Labs.**

Please choose Labs that have had LDRD programs for at least ten years.

**ASCAC should consider the impact of LDRD and each Lab's processes to:**

- (i) determine the funding levels for the LDRD programs;
- (ii) determine Lab-specific goals and allocate resources among the goals;
- (iii) select specific projects; and
- (iv) evaluate the success and impact of the LDRD program against Lab-specific goals and the overall objectives of the LDRD program over a ten-year period.

# Committee Membership Formation

Professors Dan Reed and Martin Berzins asked for committee nominations from the chairs of

- Basic Energy Sciences Advisory Committee (BESAC))
- Biological and Environmental Research Advisory Committee (BERAC)
- Fusion Energy Sciences Advisory Committee (FESAC)
- High Energy Physics Advisory Panel (HEPAP)
- Nuclear Science Advisory Committee (NSAC)
- Defense Programs Advisory Committee (DPAC)
- Environmental Management Board (EMB)

Everyone nominated accepted.

# Committee Membership

- ASCAC Tony Hey ( STFC, UK & UW) and Martin Berzins (Utah) (Chair)
- BESAC Dawn Bonnell (U Penn. )
- BERAC Karin Remington (Computationality LLC)
- DPAC Jolie Cizewski (Rutgers)
- EMB Beverly Ramsey (Desert Research Institute)
- FESAC Chris Keane (WSU)
- HEPAP and NSAC Karsten Heeger (Yale)
- NEAC Joy Rempe ( Rempe and Associates)

# Committee Process

We discussed how to start to address the committee charge using available information (including lab self-assessment already in place) and the lab visits.

This involved 6 full committee teleconferences from October through to December and about 700 emails

A number of calls to DOE and to labs were also made to help clarify the charge and the visit agendas

The available lab reports were assessed by the following sub groups

LBL: Dawn and Tony,

LLNL: Chris, Jolie and Joy,

ORNL: Karin and Karsten,

NREL: Beverly and Martin

We also looked at all previous public reviews involving LDRD.

# Committee Process

As a result of this we formulated a guidance document with a detailed set of questions for the four labs based on the committee charge regarding:

- (i) **Processes for** determining the **funding levels** for the LDRD programs;
- (ii) **Processes for** determining **Lab-specific goals** and allocating resources among the goals;
- (iii) **Processes for selecting specific projects;** and
- (iv) **Processes for** evaluating the success and **impact** of the LDRD program against Lab-specific goals and the overall objectives of the LDRD program over a ten-year period with **examples of that impact.**

We also asked for optional written input from the labs and have had input from LLNL

# Committee Lab Visits

Committee charge request visits to four labs including one SC lab, one NNSA lab and one applied energy lab. All We have included classified parallel sessions where requested by the labs.

We have scheduled visits in 2017 to

- (i) Lawrence Berkeley Laboratory Wednesday, January 4<sup>th</sup>
- (ii) Lawrence Livermore National Laboratory Thursday + Friday January 5/6<sup>th</sup>
- (iii) Oak Ridge National Laboratory Thursday, January 26<sup>th</sup>
- (iv) National Renewable Energy Laboratory, February 2<sup>nd</sup>

We have draft agendas from LBL and LLNL

# Proposed Timeline and Draft Report

- (i) September to December 2016 - teleconferences to formulate implementation of committee charge and timing and format of lab visits
- (ii) January/February 2017 Lab visits and report drafting
- (iii) March 2017 Comment period on Initial Report
- (iv) April/May Final Report

Given the compressed timetable, the committee (initially Karin and Martin) has prepared a 17 page draft outline report containing background material so that the responses to the charge may be inserted as efficiently as possible after the visits.

Questions?