

**U.S. Department of Energy**

**Office of Science**

**Fiscal Year 2012**

**Performance Evaluation Report of the**

**Stanford University for**

**Management and Operations of Science and Technology at the**

**SLAC National Accelerator Laboratory**

**For the period October 1, 2011, to September 30, 2012**

## **I. OVERALL SUMMARY RATING/FEE**

### **Performance-Based Score and Adjectival Rating:**

The basis for the evaluation of Stanford University (the Contractor) management and operations of the SLAC National Accelerator Laboratory (the Laboratory) during FY 2012 centered on the Objectives found within the following Performance Goals:

1.0 Provide for Efficient and Effective Mission Accomplishment

2.0 Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities

3.0 Provide Effective and Efficient Science and Technology Program Management

5.0 Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection

6.0 Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)

7.0 Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs

8.0 Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems

4.0 Provide Sound and Competent Leadership and Stewardship of the Laboratory

Each Performance Goal was composed of two or more weighted Objectives and most Objectives had a set of performance measures, which assisted in determining the Contractor's overall performance in meeting that Objective. Each of the performance measures identified significant activities, requirements, and/or milestones important to the success of the corresponding Objective. The following describes the methodology utilized in determining the Contractor performance rating.

### **Calculating Individual Goal Scores and Letter Grades:**

Each Objective is assigned the earned numerical score by the evaluating office as stated above. The Goal rating is then computed by multiplying the numerical score by the weight of each Objective within a Goal. These values are then added together to develop an overall numerical score for each Goal. For the purpose of determining the final Goal grade, the raw numerical score for each Goal will be rounded to the nearest tenth of a point using the standard rounding convention discussed below and then compare to Figure 2. A set of tables is provided at the end of each Performance Goal section of this document to assist in the calculation of Objective numerical scores to the Goal grade. No overall rollup grade shall be provided. The raw numerical score for S&T and M&O will be rounded to the nearest tenth of a point of purposes of determining fee. A standard rounding convention of x.44 and less rounds down to the nearest tenth (here, x.4), while x.45 and greater rounds up to the nearest tenth (here, x.5).

The eight performance Goal grades shall be used to create a report card for the laboratory (see Figure 2, below).

Performance Goal	Grade
1.0 Mission Accomplishment	A-
2.0 Design, Fabrication, Const	A
3.0 S&T Program Management	B+
5.0 ES&H	B+
6.0 Business Systems	B+
7.0 Infrastructure	A-
8.0 Safeguards/Security	B+
4.0 Leadership/Stewardship	A

**Figure 2. Laboratory Report Card**

Determining the Amount of Performance-Based Fee Earned:

SC uses the following process to determine the amount of performance-based fee earned by the contractor. The S&T score from each evaluator shall be used to determine an initial numerical score for S&T (see Table A, below), and the rollup of the scores for each M&O Performance Goal shall be used to determine an initial numerical M&O score (see Table B, below).

Program	Numerical Score	Weight	Total Score
BER	3.5	1.7%	
BES	3.8	67.6%	
FES	3.5	1.9%	
HEP	3.3	28.8%	
HQ	3.8	0.0%	
<b>Initial S&amp;T Score</b>			<b>3.6</b>

**Table A. Fiscal Year Contractor Evaluation Initial S&T Score Calculation**

Weight = Program cost divided by total cost

M&O Performance Goal	Numerical Score	Weight	
5.0 ES&H	3.2	25.0%	
6.0 Business Systems	3.2	40.0%	
7.0 Infrastructure	3.7	25.0%	
8.0 Safeguards/Security	3.2	10.0%	
<b>Initial M&amp;O Score</b>			<b>3.3</b>

**Table B. Fiscal Year Contractor Evaluation Initial M&O Score Calculation**

These initial scores will then be adjusted based on the numerical score for Goal 4.0 (See Table C, below).

	Numerical Score	Weight	
Initial S&T Score	3.6	75%	
Goal 4.0	3.8	25%	
<b>Final S&amp;T Score</b>			<b>3.7</b>
Initial M&O Score	3.3	75%	
Goal 4.0	3.8	25%	
<b>Final M&amp;O Score</b>			<b>3.4</b>

**Table C. Fiscal Year Final S&T and M&O Score Calculation**

## II. PERFORMANCE GOALS, OBJECTIVES, AND MEASURES/TARGETS

### Goal 1.0: Provide for Efficient and Effective Mission Accomplishment

The Contractor produces high-quality, original, and creative results that advance science and technology; demonstrates sustained scientific progress and impact; receives appropriate external recognition of accomplishments; and contributes to overall research and development goals of the Department and its customers.

#### Objectives

##### 1.1: Provide Science and Technology Results with Meaningful Impact on the Field

##### 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals

*SC assessments of the Goal and related Objectives are summarized below. See Appendix 1 for the Program Offices detailed evaluations.*

#### Basic Energy Sciences (BES)

- Overall, the Basic Energy Sciences (BES) Materials Sciences and Engineering (MSE)-funded research at SLAC National Accelerator Laboratory (SLAC) have been highly impactful on the field. The Materials Sciences (SIMES) program continues to demonstrate outstanding scientific excellence in the areas of nanomagnetism, high temperature superconductivity, ultrafast science, materials synthesis and strongly correlated electron systems.
- SLAC management has demonstrated improvement in the development and prioritization of strategic white papers and proposals; several were funded or seed funded in FY 2012.
- Ongoing BES Chemical Sciences, Geosciences, and Biosciences (CSGB) programs were not reviewed in FY 2012, but continue strong performance. The SLAC catalysis science center, SUNCAT, competed successfully for a new award in materials and chemistry by design in the area of predictive simulation of transition metal oxide catalysts.

#### Biological and Environmental Research (BER)

SLAC provides endstations and technical expertise for the structural biology and subsurface biogeochemistry research communities. The resources and expertise provided are best-in-class and contribute substantially to progress in these scientific fields, advancing BER scientific goals.

- End user stations for structural biology and subsurface biogeochemistry are fully subscribed.
- Users and staff publish a large number of high quality papers in high profile journals.
- Staff are active participants in planning for BER and the scientific community.

#### High Energy Physics (HEP)

Over the past 50 years, SLAC has been the premier national laboratory devoted to electron accelerator based particle physics. More recently, the lab has transitioned into a leader of the cosmic frontier: the Fermi/GLAST mission is making new discoveries in gamma-ray astronomy, SLAC is the lead lab in the design and construction of the camera for the Large Synoptic Survey Telescope (LSST) and SLAC is the home of KIPAC, the Kavli Institute in Particle Astrophysics and Cosmology. SLAC has small but growing efforts in the intensity frontier, including EXO-200 which has made world class measurements of double beta decay of xenon-136. It is completing its engagement with the analysis of the BaBar data set

and reassigning personnel to other initiatives. The Accelerator Directorate is aligning its divisions and personnel to the multi-disciplinary organization of the lab and it is developing new initiatives such as the FACET user facility and a Work-For-Others plan.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
<b>Basic Energy Sciences</b>				
1.1 Impact	A-	3.6	50.0%	
1.2 Leadership	A-	3.6	50.0%	
<b>Overall BES Total</b>				3.6
<b>Biological and Environmental Research</b>				
1.1 Impact	A-	3.5	60.0%	
1.2 Leadership	A-	3.5	40.0%	
<b>Overall BER Total</b>				3.5
<b>High Energy Physics</b>				
1.1 Impact	A-	3.5	50.0%	
1.2 Leadership	B+	3.4	50.0%	
<b>Overall HEP Total</b>				3.5

Table 1.1 -- Program Performance Goal 1.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
<b>Basic Energy Sciences</b>	A-	3.6	61.6%	
<b>Biological and Environmental Research</b>	A-	3.5	1.5%	
<b>High Energy Physics</b>	A-	3.5	36.8%	
<b>Performance Goal 1.0 Total</b>				3.6

Table 1.2 -- Overall Performance Goal 1.0 Score Development

<b>Score</b>	<b>0-0.7</b>	<b>0.8-1.0</b>	<b>1.1-1.7</b>	<b>1.8-2.0</b>	<b>2.1-2.4</b>	<b>2.5-2.7</b>	<b>2.8-3.0</b>	<b>3.1-3.4</b>	<b>3.5-3.7</b>	<b>3.8-4.0</b>	<b>4.1-4.3</b>
<b>Grade</b>	<b>F</b>	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A-</b>	<b>A</b>	<b>A+</b>

Table 1.3 -- Goal 1.0 Final Letter Grade

## **Goal 2.0: Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities**

The Contractor provides effective and efficient strategic planning; fabrication, construction and/or operations of Laboratory research facilities; and are responsive to the user community.

### **Objectives**

**2.1: Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activities leading up to CD-2)**

**2.2: Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components (execution phase, post CD-2 to CD-4)**

**2.3: Provide Efficient and Effective Operation of Facilities**

**2.4: Utilization of Facility(ies) to Provide Impactful S&T Results and Benefits to External User Communities**

*SC assessments of the Goal and related Objectives are summarized below. See Appendix 1 for the Program Offices detailed evaluations.*

### **Basic Energy Sciences (BES)**

SLAC and the Linac Coherent Light Source-II (LCLS-II) project team developed a comprehensive project baseline that successfully met the Critical Decision-2 (CD-2) requirements. The project furthered the design of the technical systems; had a successful Office of Engineering and Construction Management Independent Cost Estimate and Independent Cost Review; had a successful CD-2 Independent Project Review; and met the overall objective of the notable outcome goal. SLAC provided effective and efficient strategic planning; fabrication, construction and/or operations of Laboratory research facilities; and was responsive to the user community. SLAC met its notable to successfully execute the construction of the LCLS Ultrafast Science Instruments (LUSI) major item of equipment project.

### **Biological and Environmental Research (BER)**

- SLAC leverages its synchrotron light source to provide research resources for the structural biology and subsurface biogeochemistry research communities. The high quality and number of publications and the uniqueness of the research are a testament to the quality and value of the research resources.

### **Fusion Energy Sciences (FES)**

SLAC has been highly effective in all aspects of the Matter in Extreme Conditions Instrument (MECI) project. MECI is a Major Item of Equipment (MIE) project funded through the American Recovery and Reinvestment Act (ARRA) of 2009. A plan of user assisted commissioning has allowed early access and scientific progress prior to CD-4

### **High Energy Physics (HEP)**

SLAC has good processes and personnel in place to manage projects. Communication from the lab on project status is good. FACET is an operating user facility and it is actively addressing user concerns. SLAC has hired Vitaly Yakimenko, the past Director of the Accelerator Test Facility of BNL, to lead their

effort. SLAC is the lead lab in the camera design and construction for the LSST. This project passed its CD-1 review in 2011 and is considered very promising.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
<b>Basic Energy Sciences</b>				
2.1 Support Laboratory Programs	A	4.0	30.0%	
2.2 Construction of Facilities	A	4.0	10.0%	
2.3 Operation of Facilities	A	4.0	50.0%	
2.4 S&T Results and Benefits to External User Communities	A-	3.7	10.0%	
<b>Overall BES Total</b>				4.0
<b>Biological and Environmental Research</b>				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities			0.0%	
2.4 S&T Results and Benefits to External User Communities	A-	3.5	100.0%	
<b>Overall BER Total</b>				3.5
<b>Fusion Energy Sciences</b>				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities	A-	3.5	60.0%	
2.3 Operation of Facilities	A-	3.7	30.0%	
2.4 S&T Results and Benefits to External User Communities	A-	3.5	10.0%	
<b>Overall FES Total</b>				3.6
<b>High Energy Physics</b>				
2.1 Support Laboratory Programs	A-	3.5	60.0%	
2.2 Construction of Facilities	B+	3.4	10.0%	
2.3 Operation of Facilities	B	3.0	30.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
<b>Overall HEP Total</b>				3.3

Table 2.1 -- Program Performance Goal 2.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
<b>Basic Energy Sciences</b>	A	4.0	73.2%	
<b>Biological and Environmental Research</b>	A-	3.5	1.8%	
<b>Fusion Energy Sciences</b>	A-	3.6	3.1%	
<b>High Energy Physics</b>	B+	3.3	21.9%	
<b>Performance Goal 2.0 Total</b>				3.8

Table 2.2 -- Overall Performance Goal 2.0 Score Development

Score	0-0.7	0.8-1.0	1.1-1.7	1.8-2.0	2.1-2.4	2.5-2.7	2.8-3.0	3.1-3.4	3.5-3.7	3.8-4.0	4.1-4.3
Grade	F	D	C-	C	C+	B-	B	B+	A-	A	A+

Table 2.3 -- Goal 2.0 Final Letter Grade

### **Goal 3.0: Provide Effective and Efficient Science and Technology Program Management**

The Contractor provides effective program vision and leadership; strategic planning and development of initiatives; recruits and retains a quality scientific workforce; and provides outstanding research processes, which improve research productivity.

#### **Objectives**

#### **3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision**

#### **3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management**

#### **3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**

*SC assessments of the Goal and related Objectives are summarized below. See Appendix 1 for the Program Offices detailed evaluations.*

#### **Basic Energy Sciences (BES)**

- Communication between BES and SLAC management was proactive, timely and excellent in FY 2012.
- The untimely departure of the Associate Laboratory Director (ALD) for Photon Sciences is unfortunate and recruiting her replacement is deemed critical. Chi-Chang Kao is doing well in covering the responsibilities of both the ALD and chemical sciences division director in an acting role.
- The MSE coordinator has been proactive in shaping a vision for the program and has demonstrated excellent skills in working with headquarters in the management of the SLAC MSE program.
- SLAC successfully achieved its notable to develop a strategic vision for the laboratory program in catalysis, executed through SUNCAT. Any potential expansion of the SUNCAT program to include experimental efforts needs further definition.
- SLAC met its notable for a strategic vision for LCLS.

#### **Biological and Environmental Research (BER)**

SLAC continues maintain and excellent scientific staff who support excellent, world-leading technology for researchers from the structural biology and subsurface biogeochemistry communities.

- High quality technology development and user support.
- Excellent staffing from senior scientists to post doctoral fellows.
- World leading instrumentation.
- Excellent and timely communication.

#### **Fusion Energy Sciences (FES)**

MECI at the Linac Coherent Light Source (LCLS) provides a unique facility capable of conducting world-class research in the area of HEDLP. Effective MECI management has enabled a smooth transition from

project construction to user-science without a delay for commissioning, with an aggressive user-assisted commissioning plan that has been effectively planned and implemented.

### High Energy Physics (HEP)

SLAC has completed its transition from a lab built around a HEP accelerator complex to a multi-disciplinary lab with most of its HEP activities off-site. The final shape of the program has not yet been settled, but lab management is actively developing a financial model for all of its reorganized divisions. The scientific computing division has been reorganized under new management to service both HEP and BES activities and is funded through the lab's new financial model. It will be reviewed in the spring of 2013.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
<b>Basic Energy Sciences</b>				
3.1 Efficient Strategic Planning and Stewardship	A-	3.5	40.0%	
3.2 Project/Program/Facilities Management	A-	3.5	30.0%	
3.3 Effective Communications and Responsiveness	A-	3.6	30.0%	
<b>Overall BES Total</b>				<b>3.5</b>
<b>Biological and Environmental Research</b>				
3.1 Efficient Strategic Planning and Stewardship	A-	3.5	20.0%	
3.2 Project/Program/Facilities Management	A-	3.5	30.0%	
3.3 Effective Communications and Responsiveness	A-	3.5	50.0%	
<b>Overall BER Total</b>				<b>3.5</b>
<b>Fusion Energy Sciences</b>				
3.1 Efficient Strategic Planning and Stewardship	B	3.0	35.0%	
3.2 Project/Program/Facilities Management	A-	3.6	30.0%	
3.3 Effective Communications and Responsiveness	B+	3.1	35.0%	
<b>Overall FES Total</b>				<b>3.2</b>
<b>High Energy Physics</b>				
3.1 Efficient Strategic Planning and Stewardship	B	3.0	40.0%	
3.2 Project/Program/Facilities Management	B+	3.1	40.0%	
3.3 Effective Communications and Responsiveness	A-	3.5	20.0%	
<b>Overall HEP Total</b>				<b>3.1</b>

Table 3.1 -- Program Performance Goal 3.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
<b>Basic Energy Sciences</b>	A-	3.5	63.9%	
<b>Biological and Environmental Research</b>	A-	3.5	1.6%	
<b>Fusion Energy Sciences</b>	B+	3.2	1.8%	
<b>High Energy Physics</b>	B+	3.1	32.7%	
<b>Performance Goal 3.0 Total</b>				<b>3.4</b>

Table 3.2 -- Overall Performance Goal 3.0 Score Development

<b>Score</b>	<b>0-0.7</b>	<b>0.8-1.0</b>	<b>1.1-1.7</b>	<b>1.8-2.0</b>	<b>2.1-2.4</b>	<b>2.5-2.7</b>	<b>2.8-3.0</b>	<b>3.1-3.4</b>	<b>3.5-3.7</b>	<b>3.8-4.0</b>	<b>4.1-4.3</b>
<b>Grade</b>	<b>F</b>	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A-</b>	<b>A</b>	<b>A+</b>

Table 3.3 -- Goal 3.0 Final Letter Grade

#### **Goal 4.0: Provide Sound and Competent Leadership and Stewardship of the Laboratory**

**This Goal evaluates the Contractor Leadership capabilities in leading the direction of the overall Laboratory, the responsiveness of the Contractor to issues and opportunities for continuous improvement, and corporate office involvement/commitment to the overall success of the Laboratory.**

**The weight of this Goal is 100.0%**

This Goal evaluates the Contractor's capabilities and performance in leading the direction of the overall Laboratory, the responsiveness of the Contractor to issues and opportunities for continuous improvement, and corporate office involvement/commitment to the overall success of the Laboratory.

The overall grade assigned for this Goal is A. SC's assessment of this Goal is provided with respect to each of the three Performance Objectives.

#### **4.1: Leadership and Stewardship of the Laboratory**

In FY 2012, the Contractor exceeded SC's expectations with respect this objective. Highlights of the Contractor's performance in this area include:

- SLAC's vision to be the premier Photon Science Laboratory is well defined and engrained laboratory-wide.
- The Linac Coherent Light Source (LCLS) scientific output and performance has been recognized through the DOE and international scientific communities.
- SLAC has transitioned to a *culture of accountability, one where leadership holds the Laboratory accountable for the laboratory culture. In this regard, there is no safety culture, only a laboratory culture at SLAC.*
- SLAC leadership effectively turned around a negative safety trend in the second half of FY 2012.
- SLAC has implemented a strategy for increasing the laboratory budget through relationships external to DOE. The number and budget of "Work for Others" projects has increased, particularly in accelerator sciences.

#### **Basic Energy Sciences**

With regard to BES, SLAC continues to develop an exciting scientific vision for the Laboratory. The LCLS and Stanford Synchrotron Radiation Lightsource (SSRL) leadership worked closely to establish SLAC as a world leader in light sources. The recent change in senior laboratory management in photon science left a leadership gap that needs to be addressed.

#### **4.2: Management and Operation of the Laboratory**

In FY 2012, the Contractor exceeded SC's expectations with respect this objective. Highlights of the Contractor's performance in this area include:

- Accountability and responsibility have become more prevalent in the lower levels of the SLAC organization.

- There is a strong partnership with good communication; the SLAC Site Office (SSO) has been made aware of issues and incidents in a timely manner; working relationships between SLAC and SSO are stronger; partnering is more seamless; as a result, SSO transactional oversight has been reduced, shifting our focus to processes and less on day-to-day compliance issues.
- SLAC mitigate/retired its highest operational risk in repairing and replacing old and damaged portions of its electrical distribution network, including flawlessly replacing all end-of-life 230KV switches.
- The Contractor Assurance System (CAS) Peer Review in January found CAS to be mature and the tri-party partnership working extremely well. Areas still needing improvement include business, facilities, and some project management systems.
- SLAC substantially reduced the cost and increased the functionality of fire protection services by shifting coverage from Palo Alto to Menlo Park in May 2012.

### **Basic Energy Sciences**

With respect to BES, SLAC management is to be commended for the concerted effort to effect changes in the laboratory strategic planning process, infrastructure, and management practices to ensure efficient operations of the Laboratory. SLAC senior management communicated well with BES and was cognizant of BES programmatic priorities and goals. SLAC management continues to exercise prudent oversight and leadership in program and project management, especially in managing the LCLS-II project.

#### **4.3: Contractor Value-added**

In FY 2012, the Contractor exceeded SC's expectations with respect this objective. Highlights of the Contractor's performance in this area include:

- Stanford University (SU) continues to be a strong partner and supporter of SLAC. SU has been critical as a partner in resolving laboratory-wide issues such as the electrical power delivery for the datacenter and historical preservation issues with the State Historic Preservation Officer (SHPO).
- The Arrillaga Athletic Facility was completed and is now fully operational (\$9M) and the Stanford Research Computing Facility (SRCF) broke ground (\$60M). Both projects are privately funded.
- SU continues to attract top talent to SLAC in both scientific and operational disciplines.

### **Basic Energy Sciences**

With respect to BES, the Laboratory has successfully partnered with SU in strategic hires for the BES programs.

#### **The Contractor met the notable outcomes identified for this objective in its FY 2012 PEMP.**

*Improve the Stanford University Contractor Assurance System by developing an improvement plan incorporating feedback from the SC CAS peer review. (Objective 4.3)*

Completed March 2012.

Effectively manage contract change (e.g., home office expenses, improved contract terms and conditions). (Objective 4.3)

Completed, with a new contract in place on October 1, 2012; home office expenses have been eliminated and substantially improved contract terms have been agreed to.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 4.0: Provide Sound and Competent Leadership and Stewardship of the Laboratory				
4.1: Leadership and Stewardship of the Laboratory	A	3.9	33.0%	
4.2: Management and Operation of the Laboratory	A-	3.6	33.0%	
4.3: Contractor Value-added	A	4.0	34.0%	
			<b>Total</b>	3.8

**Table 4.1 - 4.0 SC Program Office Performance Goal Score Development**

<b>Score</b>	<b>0-0.7</b>	<b>0.8-1.0</b>	<b>1.1-1.7</b>	<b>1.8-2.0</b>	<b>2.1-2.4</b>	<b>2.5-2.7</b>	<b>2.8-3.0</b>	<b>3.1-3.4</b>	<b>3.5-3.7</b>	<b>3.8-4.0</b>	<b>4.1-4.3</b>
<b>Grade</b>	<b>F</b>	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A-</b>	<b>A</b>	<b>A+</b>

**Table 4.3 -- Goal 4.0 Final Letter Grade**

## **Goal 5.0: Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection**

**This Goal evaluates the Contractor overall success in deploying, implementing, and improving integrated ES&H systems that efficiently and effectively support the mission(s) of the Laboratory.**

**The weight of this Goal is 25.0%**

### **5.1: Provide an Efficient and Effective Health and Safety Program**

**Notable:** Continue efforts to reduce the frequency and severity of occupational injuries with a focus on ergonomics recognizing that a significant potential for injuries may occur while it relocates a majority of its staff over the next few years. - Achieved

**Notable Comments:** See general comments.

#### **General Comments:**

- The frequency of TRC and DARTs has gone up and rates have far exceeded performance goals. FY12 Rates are 2.29 and 1.30 respectively.
- The majority of recordable incidents are due to industrial and workstation ergonomic issues as well as slips, trips, and falls.
- Incident and Injury investigation for many events were of poor quality.
- The Lessons Learned Program has not been effective and needs to be significantly improved.
- Hot Work Control program revisions and improvements are not always enforced and implemented consistently.
- While the number of recordable cases has increased, the severity of incidents (as measured by actual days away) has gone down by 36% compared to last year.
- Subcontractor safety performance has improved significantly, with only 1 TRC/DART recorded in the last year.
- While the year started poorly in terms of injuries, SLAC took aggressive actions to turn the unacceptable trend, the last 4 months of FY12 showed improved performance. SLAC has improved its student, visitor, and user protocols in laboratory safety in FY12 as evidenced by the substantial decrease in incidents and accidents in this area.

### **5.2: Provide an Efficient and Effective Environmental Management System**

**Notable:** Complete protocols, procedures and basis documents and start recycling scrap metal from Babar and PEP II dismantling activities that are currently subject to DOE metals recycling suspension.

**Notable Comments:** See general comments.

#### **General Comments:**

- SLAC recycled over 125 tons of scrap metal from Babar and PEP-II dismantling activities in FY12, with a projected return to SLAC of approximately over \$200K. This outcome also represents an avoidance cost of over \$500K for that would have been required for packaging, transportation and disposal if the material were shipped off-site as radioactive waste.
- SLAC successfully collaborated with SSO to complete the National Environmental Policy Act (NEPA) Environmental Assessment (EA) for the Linac Coherent Light Source-II (LCLS-II) project, a key milestone for DOE approval of CD-2 for the project.

- SLAC successfully collaborated with the SSO on completing the National Historic Preservation Act (NHPA) Section 106 consultation process with the State Historic Preservation Office (SHPO) for the Sector 10 LCLS-II X-ray laser injector support alcove, demolition of Buildings 42 and 43 for construction of the Science and User Support Building (SUSB), and renovation of Building 41.
- SLAC has made significant progress in the cleanup of legacy contamination of groundwater, by reducing the area of concern by over 80% in four areas and VOC concentrations by over 99% in two areas. SLAC has made notable improvements in the management of hazardous waste and materials as documented in the July 2012 CUPA inspection by San Mateo County.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 5.0: Sustain Excellence and Enhance Effectiveness of Integrated Safety, Health, and Environmental Protection				
5.1: Provide an Efficient and Effective Health and Safety Program	B	2.8	60.0%	
5.2: Provide an Efficient and Effective Environmental Management System	A	3.8	40.0%	
			<b>Total</b>	3.2

**Table 5.1 - 5.0 SC Program Office Performance Goal Score Development**

<b>Score</b>	<b>0-0.7</b>	<b>0.8-1.0</b>	<b>1.1-1.7</b>	<b>1.8-2.0</b>	<b>2.1-2.4</b>	<b>2.5-2.7</b>	<b>2.8-3.0</b>	<b>3.1-3.4</b>	<b>3.5-3.7</b>	<b>3.8-4.0</b>	<b>4.1-4.3</b>
<b>Grade</b>	<b>F</b>	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A-</b>	<b>A</b>	<b>A+</b>

**Table 5.3 -- Goal 5.0 Final Letter Grade**

**Goal 6.0: Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)**

**This Goal evaluates the Contractor overall success in deploying, implementing, and improving integrated business systems that efficiently and effectively support the mission(s) of the Laboratory.**

**The weight of this Goal is 40.0%**

**6.1: Provide an Efficient, Effective, and Responsive Financial Management System(s)**

**Notable:** Implement Enterprise Resource Planning (ERP) system; establish a multi-year roadmap and identify and implement early phase for a new Lab-wide business system, thereby improving internal controls. - Achieved

**Notable Comments:**

- SLAC is on schedule and on budget to implement the new ERP system. Major milestone accomplishments in FY12 were the implementation of the ERP roadmap established for FY13 and FY14 and the purchase of PeopleSoft applications at a significant discount.
- SLAC completed the following actions in preparation for the implementation of a new ERP System: Documented current state business processes, Reviewed and prioritized processes for Business Process Reengineering, Completed business requirement definition documents, Cleaned up the asset management, vendor master file, and HR non-employee files data bases.

**6.2: Provide an Efficient, Effective, and Responsive Acquisition Management System(s)**

**Notable:**

- Implement Enterprise Resource Planning (ERP) system; establish a multi-year roadmap and identify and implement early phase for a new Lab-wide business system, thereby improving internal controls. - Achieved
- Improve procurement deliverables and performance metrics in targeted areas that support the SLAC scientific objectives. These deliverables and objectives will be determined by SLAC CFO/Procurement and DOE/SSO by October 30, 2011.

**Notable Comments:**

- SLAC's Procurement Balanced Scorecard (BSC) met all the target goals except for the small business socio-economic goals.
- Projected cost savings were \$5,811,156.00, exceeding the FY12 goal.
- SLAC has not submitted the FY11 procurement desk guide.

**6.3: Provide an Efficient, Effective, and Responsive Property Management System(s)**

**Notable:** Implement Enterprise Resource Planning (ERP) system; establish a multi-year roadmap and identify and implement early phase for a new Lab-wide business system, thereby improving internal controls. - Achieved

**Notable Comments:**

- SLAC Property Balanced Score Card objectives met all of the target goals.
- SLAC Fleet Management implemented corrective actions to reduce the number of accidents and the related costs. Accidents and the related costs were significantly below the target goals.
- Although SLAC has vehicle management system procedures documented, these procedures are not adequately followed by the fleet custodians which contributed to a vehicle being stolen.

**6.4: Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program**

*Notable Outcome: Implement Enterprise Resource Planning (ERP) system; establish a multi-year roadmap and identify and implement early phase for a new Lab-wide business system, thereby improving internal controls.*

- SLAC's Variable Pay Plan that includes the revision to the Variable Pay Plan, and the SLAC Senior Management Incentive Plan was approved by SSO.
- An independent third party produced a compensation competitiveness report, and the evaluation found SLAC is maintaining a compensation system that will attract and retain competent employees.
- SLAC's compensation system review was approved by SSO.
- SLAC implemented merit increases for staff scientists without adequately communicating with the SLAC Site Office. Prior communication with the SLAC Site Office is necessary to avoid misunderstanding and actions that are outside the normal operating procedures.

**6.5: Provide Efficient, Effective, and Responsive Management Systems for Internal Audit and Oversight; Quality; Information Management; Assurance System and Other Administrative Support Services as Appropriate**

**Notable:** Implement Enterprise Resource Planning (ERP) system; establish a multi-year roadmap and identify and implement early phase for a new Lab-wide business system, thereby improving internal controls. - Achieved

**Notable Comments:**

- SLAC completed all open Finance Internal Audit and Inspector General findings according to schedule.
- Reportable conditions identified in the OMB Circular A123, ARRA, and FMFIA are being aggressively addressed and the Laboratory provided reasonable assurance that internal controls over financial reporting were working effectively.
- Business Processing Reengineering efforts for ERP are underway and the necessary personnel have been brought on board to assist with the effort and to ensure that ongoing activities are not compromised.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 6.0: Deliver Efficient, Effective, and Responsive Business Systems and Resources that Enable the Successful Achievement of the Laboratory Mission(s)				
6.1: Provide an Efficient, Effective, and Responsive Financial Management System(s)	B+	3.2	40.0%	
6.2: Provide an Efficient, Effective, and Responsive Acquisition Management System(s)	B+	3.3	20.0%	
6.3: Provide an Efficient, Effective, and Responsive Property Management System(s)	B	3.0	10.0%	
6.4: Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program	B+	3.2	20.0%	
6.5: Provide Efficient, Effective, and Responsive Management Systems for Internal Audit and Oversight; Quality; Information Management; Assurance System and Other Administrative Support Services as Appropriate	B+	3.2	10.0%	
			<b>Total</b>	3.2

**Table 6.1 - 6.0 SC Program Office Performance Goal Score Development**

<b>Score</b>	<b>0-0.7</b>	<b>0.8-1.0</b>	<b>1.1-1.7</b>	<b>1.8-2.0</b>	<b>2.1-2.4</b>	<b>2.5-2.7</b>	<b>2.8-3.0</b>	<b>3.1-3.4</b>	<b>3.5-3.7</b>	<b>3.8-4.0</b>	<b>4.1-4.3</b>
<b>Grade</b>	<b>F</b>	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A-</b>	<b>A</b>	<b>A+</b>

**Table 6.3 -- Goal 6.0 Final Letter Grade**

## **Goal 7.0: Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs**

**This Goal evaluates the overall effectiveness and performance of the Contractor in planning for, delivering, and operations of Laboratory facilities and equipment needed to ensure required capabilities are present to meet today and tomorrow mission(s) and complex challenges.**

**The weight of this Goal is 25.0%**

### **7.1: Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage, Minimizes Life Cycle Costs, and Ensures Site Capability to Meet Mission Needs**

**Notable:** Develop 5-year roadmap for renewal of aging conventional facilities, including legacy materials.

#### **Notable Comments:**

- Facilities Operations has revised the 5-year roadmap.
- SLAC has conducted condition assessments and developed a mitigation/ replacement plan for Variable Voltage Substations (VVS).
- The 230kV switch reppair/replacement was a complicated project that was successfully completed and has retired a major vulnerability for the lab.
- The first phase of the re-building of CT-1701 was accomplished within scope, under budget and ahead of schedule.
- SLAC established Facilities Command Center for the monitoring and controlling of laboratory critical systems.
- Mission Readiness Review continues to prove successful implementation of facilities management tools that are effective and had been lacking in past years.

### **7.2: Provide Planning for and Acquire the Facilities and Infrastructure Required to Support the Continuation and Growth of Laboratory Missions and Programs**

#### **Notables:**

- Improve project delivery systems and processes for all projects with a focus to improve performance on smaller projects.
- Achieve CD1 for SUSB.**Notable Comments:**
- All projects were performed successfully and met all DOE deliverables. To date, LCLS-II, LSST, RSB, SUSB, LUSI and MECI have successfully secured readiness for successive phases of development and deliveries. All projects have been delivered on-time and on-budget.
- Repair and upgrade of the 230kV system was completed successfully.
- Secondary 60 kV protective relays were completed on-time.
- The CT-1701 Phase I successfully completed.
- The limited analysis capability of the SLAC Project Management Control System (PMCS) inhibits project managers' ability to expeditiously determine/assess the causes of variances and take necessary corrective actions.
- PMCS data still requires improvements in Quality Control to minimize errors, for example errors in projects financial data are being caught by the DOE Federal Project Director not the SLAC Project Manager.
- SUSB secured CD-1 approval on May 11, 2012, on schedule.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 7.0: Sustain Excellence in Operating, Maintaining, and Renewing the Facility and Infrastructure Portfolio to Meet Laboratory Needs				
7.1: Manage Facilities and Infrastructure in an Efficient and Effective Manner that Optimizes Usage, Minimizes Life Cycle Costs, and Ensures Site Capability to Meet Mission Needs	A	3.8	50.0%	
7.2: Provide Planning for and Acquire the Facilities and Infrastructure Required to Support the Continuation and Growth of Laboratory Missions and Programs	A-	3.6	50.0%	
			<b>Total</b>	3.7

**Table 7.1 - 7.0 SC Program Office Performance Goal Score Development**

<b>Score</b>	<b>0-0.7</b>	<b>0.8-1.0</b>	<b>1.1-1.7</b>	<b>1.8-2.0</b>	<b>2.1-2.4</b>	<b>2.5-2.7</b>	<b>2.8-3.0</b>	<b>3.1-3.4</b>	<b>3.5-3.7</b>	<b>3.8-4.0</b>	<b>4.1-4.3</b>
<b>Grade</b>	<b>F</b>	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A-</b>	<b>A</b>	<b>A+</b>

**Table 7.3 -- Goal 7.0 Final Letter Grade**

## **Goal 8.0: Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems**

**This Goal evaluates the Contractor's overall success in safeguarding and securing Laboratory assets that supports the mission(s) of the Laboratory in an efficient and effective manner and provides an effective emergency management program.**

**The weight of this Goal is 10.0%**

### **8.1: Provide an Efficient and Effective Emergency Management System**

- MOA between SLAC and the Menlo Park Fire Protection District (MPFPD) for the new service model was signed and implemented. This is a major positive change in the Laboratories approach to emergency management resulting in a ~\$2M savings per year without diminishing emergency response capabilities.
- Emergency response at SLAC has been outstanding; all actual incidents have been responded to in a professional and efficient manner. SLAC Emergency Response Team now has several trained Emergency Medical Technicians (EMT). SLAC security has at least one EMT on shift at all times. The response from MPFPD has been as fast or faster than the previous on-site fire station.
- The BNA as well as Hazards Surveys (HSs) and resulting Emergency Planning Hazards Assessments (EPHAs), required by DOE Emergency Management Directive are overdue.

### **8.2: Provide an Efficient and Effective System for Cyber-Security and National Security Systems (NSS)**

- SLAC had eight Plan of Action and Milestones (POAMS) to complete and closeout in FY12. As a result of the audit follow up by KPMG on behalf of the IG, only five of the eight outstanding POAMs were closed-out. Two of outstanding findings remain open for the third time and one remains open for the second time.
- SLAC has brought on a dynamic and innovative Chief Information Officer (CIO) to the laboratory who is providing necessary and long overdue leadership for this function to move all aspects of computing forward and meet its obligations.

### **8.3: Provide an Efficient and Effective System for the Physical Security and Protection of Special Nuclear Materials, Classified Matter, and Property**

**Notable:** Complete implementation of security systems to improve physical security and efficiency of security programs, to include security upgrades to SLAC's external gates and improved security at the SLAC Computer Building.

#### **Notable Comments:**

- SLAC completed all of the scheduled FY12 security upgrades. The access control system to control all automated systems (e.g. doors, gates, and cameras) was successfully installed and programmed. Alpine Gate was updated with an automated system that is operated by a proximity badge. Sand Hill gate improvements were installed (night owl, LPR, and access control system). However, the License Plate Reader did not work for SLAC purposes as designed. Security upgrades to the Computing Building were successfully installed.
- SLAC has developed a Strategic Plan to integrate security upgrades into the overall SLAC plan.

- SLAC successfully completed its physical security review by DOE/HQ in July 2012.
- SLAC lost an accountable Polonium 210 source through a series of errors and gaps in the sealed source program. The source was never recovered. The decay of the source rendered it non-accountable within two months of realizing it was missing. The program gaps have been addressed.
- A GSA vehicle was stolen from the SLAC fleet and was recovered with the help of local law enforcement.

**8.4: Provide an Efficient and Effective System for the Protection of Classified and Sensitive Information**

SLAC met expectations with regard to protection of classified and sensitive information. SLAC's policies and procedures are clearly evident.

Element	Letter Grade	Numerical Score	Weight	Overall Score
Goal 8.0: Sustain and Enhance the Effectiveness of Integrated Safeguards and Security Management (ISSM) and Emergency Management Systems				
8.1: Provide an Efficient and Effective Emergency Management System	B+	3.4	25.0%	
8.2: Provide an Efficient and Effective System for Cyber-Security and National Security Systems (NSS)	B	2.9	25.0%	
8.3: Provide an Efficient and Effective System for the Physical Security and Protection of Special Nuclear Materials, Classified Matter, and Property	B	2.9	25.0%	
8.4: Provide an Efficient and Effective System for the Protection of Classified and Sensitive Information	B+	3.4	25.0%	
			<b>Total</b>	3.2

**Table 8.1 - 8.0 SC Program Office Performance Goal Score Development**

<b>Score</b>	<b>0-0.7</b>	<b>0.8-1.0</b>	<b>1.1-1.7</b>	<b>1.8-2.0</b>	<b>2.1-2.4</b>	<b>2.5-2.7</b>	<b>2.8-3.0</b>	<b>3.1-3.4</b>	<b>3.5-3.7</b>	<b>3.8-4.0</b>	<b>4.1-4.3</b>
<b>Grade</b>	<b>F</b>	<b>D</b>	<b>C-</b>	<b>C</b>	<b>C+</b>	<b>B-</b>	<b>B</b>	<b>B+</b>	<b>A-</b>	<b>A</b>	<b>A+</b>

**Table 8.3 -- Goal 8.0 Final Letter Grade**

## **APPENDIX**

### **List of programs:**

High Energy Physics (HEP)  
Basic Energy Sciences (BES)  
Biological and Environmental Research (BER)  
Fusion Energy Sciences (FES)  
Headquarters (HQ)

**High Energy Physics  
SLAC National Accelerator Laboratory  
FY 2012 Performance Evaluation  
Office of Science**

**Goal 1.0: Provide for Efficient and Effective Mission Accomplishment**

**Weight:** 35.00%

**Score:** 3.5                    **Grade:** A-

**Goal Evaluation:**

Over the past 50 years, SLAC has been the premier national laboratory devoted to electron accelerator based particle physics. More recently, the lab has transitioned into a leader of the cosmic frontier: the Fermi/GLAST mission is making new discoveries in gamma-ray astronomy, SLAC is the lead lab in the design and construction of the camera for the Large Synoptic Survey Telescope (LSST) and SLAC is the home of KIPAC, the Kavli Institute in Particle Astrophysics and Cosmology. SLAC has small but growing efforts in the intensity frontier, including EXO-200 which has made world class measurements of double beta decay of xenon-136. It is completing its engagement with the analysis of the BaBar data set and reassigning personnel to other initiatives. The Accelerator Directorate is aligning its divisions and personnel to the multi-disciplinary organization of the lab and it is developing new initiatives such as the FACET user facility and a Work-For-Others plan.

**Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field**

**Weight:** 50.00%

**Score:** 3.5                    **Grade:** A-

**Objective Evaluation:**

SLAC is heavily involved in several major areas of high energy physics research. For many years, the SLAC linear accelerator and PEP-II led the world in electron accelerator based research . SLAC is now completing the final stages in the analysis of the  $557 \text{ fb}^{-1}$  Babar data set which resulted from the nine year operations of PEP II and the lab has plans for archiving the data and making it available to the BaBar collaboration through a newly developed analysis interface, the Long Tern Data Archival (LTDA) system.

On the cosmic frontier, the Fermi Gamma-ray Large Area Space Telescope is now delivering unique results and SLAC is running the Instrument Science Operations Center (ISOC) to support the science and data taking.

On the energy frontier, SLAC is a member of the ATLAS collaboration and is involved in jet reconstruction and search analyses for physics beyond the standard model. The Atlas group announced the discovery of a Higgs-like particle at  $125 \text{ GeV}/c^2$ . This is a major event in the field.

On the accelerator science research front, SLAC has completed the construction of the FACET facility to study beam-induced wakefield acceleration. This is a HEP user facility, and the lab has hosted the first series of runs by an external user community in 2012. Work on direct laser acceleration, high gradient accelerating structures, beam physics, and the ILC all continue. The operations of the user facility were the subject of some criticisms at the 2012 Institutional SLAC Review and the lab has hired Vitaly Yakimenko, who was the director of the BNL Accelerator Test Facility, to address these challenges.

**Objective 1.2: Provide Quality Leadership in Science and Technology that Advances**

## **Community Goals and DOE Mission Goals**

**Weight:** 50.00%

**Score:** 3.4                      **Grade:** B+

### **Objective Evaluation:**

SLAC has played important leadership roles on the cosmic frontier and in accelerator R&D. The first major cosmic frontier effort is the Fermi Gamma-ray Space Telescope (FGST), which has discovered many new gamma ray sources in the universe. SLAC is running the Instrument Science Operations Center (ISOC) to support the science and data taking. FGST also includes searches for dark matter particles, which are very important to the HEP program. The next large cosmic frontier effort is the Large Synoptic Survey Telescope (LSST). SLAC is leading the development of the camera. HEP will utilize LSST to study dark energy through the study of evolution of the acceleration of the expansion of the universe.

The largest effort in accelerator R&D is FACET, which is a new national user facility optimized to study beam-driven plasma-wakefield acceleration. The beams are very precise and have ~20 GeV of energy; these parameters can be exploited for other topics in accelerator R&D as well other science topics like THz radiation.

The lab has not engaged effectively on the intensity frontier since the end of B-factory operations.

## **Goal 2.0: Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities**

**Weight:** 35.00%

**Score:** 3.3                      **Grade:** B+

### **Goal Evaluation:**

SLAC has good processes and personnel in place to manage projects. Communication from the lab on project status is good. FACET is an operating user facility and it is actively addressing user concerns. SLAC has hired Vitaly Yakimenko, the past Director of the Accelerator Test Facility of BNL, to lead their effort. SLAC is the lead lab in the camera design and construction for the LSST. This project passed its CD-1 review in 2011 and is considered very promising.

### **Objective 2.1: Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activities leading up to CD-2)**

**Weight:** 60.00%

**Score:** 3.5                      **Grade:** A-

### **Objective Evaluation:**

The laboratory is leading the camera design and construction for the LSST. The project passed its CD-1 review in October, 2011. DOE and NSF held a Joint Interface Management Review in June, which went well. SLAC members of the project team showed deep integration in the larger project and strong technical skills.

### **Objective 2.2: Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components (execution phase, post CD-2 to CD-4)**

**Weight:** 10.00%

**Score:** 3.4                    **Grade:** B+

**Objective Evaluation:**

FACET had its CD-4 review on December 13, 2011 and successfully passed it.

**Objective 2.3: Provide Efficient and Effective Operation of Facilities**

**Weight:** 30.00%

**Score:** 3.0                    **Grade:** B

**Objective Evaluation:**

**Notable:** Provide HEP with a plan to run the FACET user facility in FY 2012 and deliver a successful user run of the facility consistent with the funding provided by HEP and guidance supplied in the approved financial plan. - Achieved

**Notable Comments:** The first run of the FACET User Facility was generally acceptable, but there were issues with beam parameters and stability. SLAC has developed a plan to address the user concerns and has hired an experienced director of a successful user facility, Vitaly Yakimenko recently the director of the BNL Accelerator Test Facility (ATF).

**General Comments:** FACET eventually reached its goals for beam quality during the run, but user feedback on the time needed to achieve the beam quality and the ability to reproduce it quickly after shutdowns were issues. The HEP Institutional review of SLAC found these criticisms to be valid. Lab management has been quick to address the issues. The lab has hired a new permanent director for FACET and has developed an action plan to correct the issues.

**Goal 3.0: Provide Effective and Efficient Science and Technology Program Management**

**Weight:** 30.00%

**Score:** 3.1                    **Grade:** B+

**Goal Evaluation:**

SLAC has completed its transition from a lab built around a HEP accelerator complex to a multi-disciplinary lab with most of its HEP activities off-site. The final shape of the program has not yet been settled, but lab management is actively developing a financial model for all of its reorganized divisions. The scientific computing division has been reorganized under new management to service both HEP and BES activities and is funded through the lab's new financial model. It will be reviewed in the spring of 2013.

**Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision**

**Weight:** 40.00%

**Score:** 3.0                    **Grade:** B

**Objective Evaluation:**

Management has recognized that the SLAC vision has not always been well aligned with the national HEP program. Lab management has actively addressed these concerns, but it is not yet clear that a truly coherent plan has emerged from the initiatives that have been put into place. The lab does not yet have a strong presence in the intensity frontier and some personnel have been

slow to react to the new opportunities in the field. SLAC's accelerator technical infrastructure must still adapt to the new national opportunities in the intensity frontier.

**Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management**

**Weight:** 40.00%

**Score:** 3.1                      **Grade:** B+

**Objective Evaluation:**

**Notable:** Refine and continue to execute a plan to align the size and scope of the HEP accelerator research program with the planned resource constraints for FY2012. - Achieved

**Notable Comments:** Lab management is executing a developing plan to achieve goals in accelerator research while working within a constrained budget. A new Work For Others program is evolving.

**General Comments:** The lab is carrying out its HEP program efficiently and effectively. They are directly addressing declining budgets in a responsible way. User reservations in the operations of the FACET user Facility are being addressed by management.

**Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**

**Weight:** 20.00%

**Score:** 3.5                      **Grade:** A-

**Objective Evaluation:**

Communications are excellent. From the lab director down through the Associate Lab Directors, HEP is regularly informed of the lab's successes and problems in frank and open discussions.

**Basic Energy Sciences  
SLAC National Accelerator Laboratory  
FY 2012 Performance Evaluation  
Office of Science**

**Goal 1.0: Provide for Efficient and Effective Mission Accomplishment**

**Weight:** 25.00%

**Score:** 3.6                    **Grade:** A-

**Goal Evaluation:**

- Overall, the Basic Energy Sciences (BES) Materials Sciences and Engineering (MSE)-funded research at SLAC National Accelerator Laboratory (SLAC) have been highly impactful on the field. The Materials Sciences (SIMES) program continues to demonstrate outstanding scientific excellence in the areas of nanomagnetism, high temperature superconductivity, ultrafast science, materials synthesis and strongly correlated electron systems.
- SLAC management has demonstrated improvement in the development and prioritization of strategic white papers and proposals; several were funded or seed funded in FY 2012.
- Ongoing BES Chemical Sciences, Geosciences, and Biosciences (CSGB) programs were not reviewed in FY 2012, but continue strong performance. The SLAC catalysis science center, SUNCAT, competed successfully for a new award in materials and chemistry by design in the area of predictive simulation of transition metal oxide catalysts.

**Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field**

**Weight:** 50.00%

**Score:** 3.6                    **Grade:** A-

**Objective Evaluation:**

The ongoing BES CSGB programs in ultrafast chemical science (PULSE) and catalysis science (SUNCAT) were not reviewed in FY 2012; they continue to be successfully executed, of high scientific merit and quality, and are advancing the DOE mission. PULSE researchers continue to be prominent in conceiving, orchestrating, and conducting many high-profile experiments at the LCLS in FY 2012. SLAC is making important contributions to the Fuels from Sunlight Energy Innovation Hub, the Joint Center for Artificial Photosynthesis (JCAP), in the area of characterizing of electro-catalysts using X-ray photoelectron spectroscopy at Stanford Synchrotron Radiation Lightsource.

The SLAC MSE program was not peer reviewed in FY 2012. Overall, the MSE-funded research at SLAC has been highly impactful on the field. The programs continue to possess outstanding scientific excellence in the areas of nanomagnetism, high temperature superconductivity, materials synthesis and strongly correlated electron systems. The unified and interconnected ultrafast (PULSE) and materials sciences (SIMES) programs have resulted in a distinct MSE program with clear science goals that serve the overarching SLAC mission. These world-leading programs continue to thrive in the newly formed Division of Materials Sciences at SLAC. The planned, targeted hires in scattering science and synthesis are well-aligned with the overall strategic goals of the laboratory.

**Objective 1.2: Provide Quality Leadership in Science and Technology that Advances**

## **Community Goals and DOE Mission Goals**

**Weight:** 50.00%

**Score:** 3.6

**Grade:** A-

### **Objective Evaluation:**

SUNCAT continues to develop a leadership position in computational catalysis science that will strongly enhance the BES catalysis science portfolio. The SUNCAT director is recognized as a world leader in the application of computational chemistry to catalysis. An application to create a complementary experimental program within SUNCAT received mixed reviews. This application was not funded due to the mixed reviews and the departure of one of the lead principal investigators. However, a focused computational and experimental effort on predictive and validated theory for transition metal oxides was initiated as a new center-scale activity following successful competition in the BES expression of interest for materials and chemistry by design. BES guidance to the Joint Center for Artificial Photosynthesis (JCAP) following its annual review in FY 2012 requested clarification of the role of theory, modeling, and simulation in JCAP. BES anticipates that the response to its guidance will include clarification of the role that SLAC investigators play in JCAP theory and modeling.

The research projects supported at SLAC by the MSE division that are deemed world leading are those in correlated electron systems, nanomagnetism, ultrafast science and materials discovery as evidenced by the latest reviews and results published in the scientific literature. In 2012, prestigious prizes and medals in physics were awarded to SLAC MSE principal investigators including the Paul Dirac Medal, and the James Bardeen and Oliver E. Buckley Prizes. Several highly anticipated papers published in FY 2012 that demonstrated the usefulness of the X-ray free electron laser on material sciences research were authored by SLAC MSE participants.

## **Goal 2.0: Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities**

**Weight:** 50.00%

**Score:** 4.0

**Grade:** A

### **Goal Evaluation:**

SLAC and the Linac Coherent Light Source-II (LCLS-II) project team developed a comprehensive project baseline that successfully met the Critical Decision-2 (CD-2) requirements. The project furthered the design of the technical systems; had a successful Office of Engineering and Construction Management Independent Cost Estimate and Independent Cost Review; had a successful CD-2 Independent Project Review; and met the overall objective of the notable outcome goal. SLAC provided effective and efficient strategic planning; fabrication, construction and/or operations of Laboratory research facilities; and was responsive to the user community. SLAC met its notable to successfully execute the construction of the LCLS Ultrafast Science Instruments (LUSI) major item of equipment project.

### **Objective 2.1: Provide Effective Facility Design(s) as Required to Support Laboratory Programs (i.e., activities leading up to CD-2)**

**Weight:** 30.00%

**Score:** 4.0

**Grade:** A

### **Objective Evaluation:**

**Notable:** Develop the project baseline for the LCLS-II and achieve CD-2. - Achieved

**Notable Comments:** See general comments.

**General Comments:** SLAC advanced the design for the LCLS-II project's technical systems, which includes Sector 10 Annex; Injector; Linac; Undulators; X-ray Transport Optics and Diagnostics; X-ray Experimental Systems; Global Interface Systems; and Heavy Civil. The Office of Engineering and Construction Management (OECM) conducted a comprehensive Independent Cost Estimate (ICE) review of the Heavy Construction and an Independent Cost Review (ICR) on selected portions of the other technical systems. Overall the OECM ICE/ICR identified no significant issues that required adjustment of the project performance baseline. An Office of Science Critical Decision 2 (CD-2), "Approve Performance Baseline" Independent Project Review was conducted by the Office of Science's Office of Project Assessment to determine if the project had fulfilled the CD-2 requirements. The review committee found that the LCLS-II project met the requirements for CD-2 and recommended that CD-2 be approved.

**Objective 2.2: Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components (execution phase, post CD-2 to CD-4)**

**Weight:** 10.00%

**Score:** 4.0                      **Grade:** A

**Objective Evaluation:**

The LUSI project received CD-4, "Project Completion" approval on February 2, 2012, several months ahead of the baseline date of September, 2012. The project was successfully closed out.

**Objective 2.3: Provide Efficient and Effective Operation of Facilities**

**Weight:** 50.00%

**Score:** 4.0                      **Grade:** A

**Objective Evaluation:**

The Linac Coherent Light Source (LCLS) continues operating reliably and improving the performance with all six instruments now available to users. Recently, LCLS has successfully achieved self-seeding and will make this new capability available to users in spring of 2013.

The Stanford Synchrotron Radiation Lightsource (SSRL) continues operating reliably and effectively. SSRL is operating at 450 mA of top-off mode and obtaining the approval for 500 mA operation.

**Objective 2.4: Utilization of Facility(ies) to Provide Impactful S&T Results and Benefits to External User Communities**

**Weight:** 10.00%

**Score:** 3.7                      **Grade:** A-

**Objective Evaluation:**

The demand for using the LCLS continues to grow. Only ~25% of the proposals receive beam time. The experiments conducted at LCLS have produced many exiting results that have been published in high impact journals.

The SSRL continues improving its capabilities and increasing its capacity, and remains a steady and reliable synchrotron facility for a wide range of scientific communities.

SLAC has successfully demonstrated advanced seeding techniques crucial for a next generation

light source. SLAC achieved the first direct seeding in a hard X-ray free electron laser, demonstrating self-seeding at angstrom wavelengths. BES funds the Echo-75 Experiment whose goal is to demonstrate efficient generation of high harmonics and prove a seminal concept to produce very short-pulse electron beams. Recent tests demonstrated successful generation of up to the 7th harmonic of the exciting laser beam.

### **Goal 3.0: Provide Effective and Efficient Science and Technology Program Management**

**Weight:** 25.00%

**Score:** 3.5                      **Grade:** A-

#### **Goal Evaluation:**

- Communication between BES and SLAC management was proactive, timely and excellent in FY 2012.
- The untimely departure of the Associate Laboratory Director (ALD) for Photon Sciences is unfortunate and recruiting her replacement is deemed critical. Chi-Chang Kao is doing well in covering the responsibilities of both the ALD and chemical sciences division director in an acting role.
- The MSE coordinator has been proactive in shaping a vision for the program and has demonstrated excellent skills in working with headquarters in the management of the SLAC MSE program.
- SLAC successfully achieved its notable to develop a strategic vision for the laboratory program in catalysis, executed through SUNCAT. Any potential expansion of the SUNCAT program to include experimental efforts needs further definition.
- SLAC met its notable for a strategic vision for LCLS.

#### **Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision**

**Weight:** 40.00%

**Score:** 3.5                      **Grade:** A-

#### **Objective Evaluation:**

**Notable:** Develop a strategic vision for SUNCAT that identifies the areas in catalysis science where SLAC intends to be world leading and that distinguishes SUNCAT research from current BES efforts in catalysis and solar photochemistry conducted in JCAP, EFRCs, and core programs in DOE laboratories. - Achieved

**Notable Comments:** SUNCAT and its world-class scientific leadership have had a demonstrative impact on advancing SLAC's strategic planning in use-inspired basic research with energy relevance in the chemical sciences. In addition to leading energy-relevant chemical sciences at SLAC, SUNCAT must also find its appropriate niche in the BES chemical sciences portfolio. In particular, an expansion of the experimental portion of SUNCAT must be strategic in the context of the overall BES catalysis portfolio. PULSE, originally organized about the central theme of ultrafast science, must continue to define a clear and coherent scientific vision as SLAC evolves its strategic vision for grand challenge and use-inspired basic research. The former ALD for Photon Sciences, who also acted as director of the Chemical Sciences Division, was making significant

advances in strategic planning for both SUNCAT and PULSE. It is imperative that the laboratory maintain momentum in this area and the acting ALD has stepped in nicely to do so.

**General Comments:** The MSE-supported program at SLAC continues to have a strong scientific vision for the future. SLAC has strong leadership for the MSE-funded program, which continues to pursue grand challenge science in energy-related materials. SLAC is actively recruiting scientific talent in key areas which will further aid in building premier multi-disciplinary scientific programs which serve the overall BES mission areas in the laboratory. The participation of MSE-supported principal investigators in the construction of and first experiments with the LCLS soft X-ray instrument is duly noted. The development of in situ synthesis and spectroscopy capabilities at the SSRL through the synthesis capability completion is also noteworthy. The vision for a theory institute in spectroscopy is interesting but requires further discussion on its overall framework and management plan.

LCLS continues to enhance capabilities and to improve performance at a level that exceeds expectations. The LCLS management team has provided leadership contributing to the success of the facility. The SSRL management team provides vision and leadership to enhance capabilities and increase capacities to support a wide range of user communities.

**Objective 3.2: Provide Effective and Efficient Science and Technology  
Project/Program/Facilities Management**

**Weight:** 30.00%

**Score:** 3.5

**Grade:** A-

**Objective Evaluation:**

**Notable:** Refine the strategic vision to fully utilize LCLS and to expand the Laboratory's photon science program. - Achieved

**Notable Comments:** SLAC met its notable for a strategic vision for LCLS.

**General Comments:** SLAC senior management continues to work diligently to make a complete transition to a multi-program laboratory with an appropriate organizational and financial structure. Such transitions always cause tension and it continues to be important that SLAC management communicate clearly to both their staff and BES the impacts and rationale for changes that will occur.

The SLAC MSE program continued to evolve into coordinated thematic areas in FY 2012. The SLAC program has demonstrated world-class leadership in some of these areas and is launching a major initiative to grow and recruit in the remaining areas. The proposed research in surface science and spectroscopy theory should be focused on MSE priority areas. SLAC management is advised to be diligent in the development of strategic white papers and prioritization of proposals in FY 2013. Continued attention is encouraged to ensure that early career applications submitted by SLAC are from SLAC staff.

Materials sciences participation in LCLS has been exemplary and has resulted in the first papers from the LCLS related to condensed matter physics. The integration of the ultrafast portfolio (previously solely with PULSE) with the balance of the materials sciences research has been successful. Continued attention to the evolution of the ultrafast science vision is critical with recent leadership changes at SLAC.

Both LCLS and SSRL operate efficiently and are effectively managed. Both LCLS-II and LUSI have excellent project teams which have effectively managed each project. Strong support by senior SLAC management was clearly evident.

**Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**

**Weight:** 30.00%

**Score:** 3.6

**Grade:** A-

**Objective Evaluation:**

Communication between CSGB and SLAC management was again strong in FY 2012. Through a series of regular phone conferences and in-person briefings, SLAC management kept CSGB fully informed on issues relating to PULSE and SUNCAT.

Communication between MSE and SLAC management was proactive and timely. Program highlight submissions have been copious and of the utmost scientific quality and impact. Press releases on MSE topics have been uniformly excellent. Continued attention is needed to delineation of research activities supported by MSE and other sponsors, especially in proposals for new research.

Communications between BES Scientific User Facilities division and the management of both the LCLS and SSRL remained excellent during FY 2012.

**Biological and Environmental Research  
SLAC National Accelerator Laboratory  
FY 2012 Performance Evaluation  
Office of Science**

**Goal 1.0: Provide for Efficient and Effective Mission Accomplishment**

**Weight:** 25.00%

**Score:** 3.5                    **Grade:** A-

**Goal Evaluation:**

SLAC provides endstations and technical expertise for the structural biology and subsurface biogeochemistry research communities. The resources and expertise provided are best-in-class and contribute substantially to progress in these scientific fields, advancing BER scientific goals.

- End user stations for structural biology and subsurface biogeochemistry are fully subscribed.
- Users and staff publish a large number of high quality papers in high profile journals.
- Staff are active participants in planning for BER and the scientific community.

**Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field**

**Weight:** 60.00%

**Score:** 3.5                    **Grade:** A-

**Objective Evaluation:**

- The Structural Molecular Biology (SMB) program at SLAC/SSRL continues to enable many high profile research papers based on data obtained at their experimental stations.
- SLAC manages a Science Focus Area (SFA) program for Subsurface Biogeochemical Research (SBR). The scientific contributions of the SFA continue to have a highly significant impact on the field of subsurface biogeochemistry.

**Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals**

**Weight:** 40.00%

**Score:** 3.5                    **Grade:** A-

**Objective Evaluation:**

- The SMB program provides excellent experimental stations for macromolecular crystallography, x-ray spectroscopy and small angle x-ray scattering, and continues to develop new technologies in these areas.
- SLAC SBR SFA researchers lead an excellent group of scientists from several prominent universities in a collaborative effort to obtain understanding of subsurface uranium-mineral interactions.

**Goal 2.0: Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities**

**Weight:** 50.00%

**Score:** 3.5                      **Grade:** A-

**Goal Evaluation:**

- SLAC leverages its synchrotron light source to provide research resources for the structural biology and subsurface biogeochemistry research communities. The high quality and number of publications and the uniqueness of the research are a testament to the quality and value of the research resources.

**Objective 2.4: Utilization of Facility(ies) to Provide Impactful S&T Results and Benefits to External User Communities**

**Weight:** 100.00%

**Score:** 3.5                      **Grade:** A-

**Objective Evaluation:**

- The SMB program serves a large external user community. IN FY 2012 more than 300 structures based upon data obtained at the SMB stations at SSRL were deposited in the Protein Databank.
- The SLAC SBR SFA makes effective use of the experimental stations at SSRL for its research program, and involves researchers from several outside institutions, contributing to the growth of interest in SSRL in the geochemical external user community.

**Goal 3.0: Provide Effective and Efficient Science and Technology Program Management**

**Weight:** 25.00%

**Score:** 3.5                      **Grade:** A-

**Goal Evaluation:**

SLAC continues maintain and excellent scientific staff who support excellent, world-leading technology for researchers from the structural biology and subsurface biogeochemistry communities.

- High quality technology development and user support.
- Excellent staffing from senior scientists to post doctoral fellows.
- World leading instrumentation.
- Excellent and timely communication.

**Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision**

**Weight:** 20.00%

**Score:** 3.5                      **Grade:** A-

**Objective Evaluation:**

- The SMB program leadership works closely with the leaders of both SSRL and LCLS in identifying and planning for long-term opportunities at these facilities. A recent senior level hire involved planning over the entire FY 2012 within SLAC and with program staff at BER

and NIH and represents a very important senior-level addition to the SMB program and to SLAC in general.

- SLAC SBR SFA researchers have developed a well-focused strategic plan for addressing major gaps in understanding of the subsurface biogeochemistry of uranium. The SFA leadership has in addition demonstrated a strong interest in addressing the major themes of the overall Terrestrial Ecosystem Science program.

**Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management**

**Weight:** 30.00%

**Score:** 3.5                      **Grade:** A-

**Objective Evaluation:**

- The SLAC program continues to strengthen its subsurface science focus by engaging researchers within the SBR program in new and/or innovative ways.

**Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**

**Weight:** 50.00%

**Score:** 3.5                      **Grade:** A-

**Objective Evaluation:**

- The SLAC leadership for the SMB program communicates regularly with the BER program staff and provides valuable information about new developments in the program in a timely way.
- SLAC maintains excellent communication with SBR program managers on a regular basis.

**Fusion Energy Sciences  
SLAC National Accelerator Laboratory  
FY 2012 Performance Evaluation  
Office of Science**

**Goal 2.0: Provide for Efficient and Effective Design, Fabrication, Construction and Operations of Research Facilities**

**Weight:** 75.00%

**Score:** 3.6                      **Grade:** A-

**Goal Evaluation:**

SLAC has been highly effective in all aspects of the Matter in Extreme Conditions Instrument (MECI) project. MECI is a Major Item of Equipment (MIE) project funded through the American Recovery and Reinvestment Act (ARRA) of 2009. A plan of user assisted commissioning has allowed early access and scientific progress prior to CD-4

**Objective 2.2: Provide for the Effective and Efficient Construction of Facilities and/or Fabrication of Components (execution phase, post CD-2 to CD-4)**

**Weight:** 60.00%

**Score:** 3.5                      **Grade:** A-

**Objective Evaluation:**

SLAC/MECI has excelled in executing the project per the Project Execution Plan (PEP). Proper planning has enabled the team to effectively leverage other SC projects at SLAC, thereby minimizing design and procurement risk, and preserving contingency reserve funds.

**Objective 2.3: Provide Efficient and Effective Operation of Facilities**

**Weight:** 30.00%

**Score:** 3.7                      **Grade:** A-

**Objective Evaluation:**

Early user-assisted commissioning as the project is nearing completion has been very effective in providing the capabilities of the MECI to the user community prior to CD-4 project completion, which eliminated the 6 to 12 months of commissioning down-time. This re-planning effort was additional scope to the original PEP.

**Objective 2.4: Utilization of Facility(ies) to Provide Impactful S&T Results and Benefits to External User Communities**

**Weight:** 10.00%

**Score:** 3.5                      **Grade:** A-

**Objective Evaluation:**

User science began on the MECI in March 2012 through user-assisted commissioning with expectations of impactful science. Initial results exceeded expectations, producing detailed measurements of the properties of hot dense plasmas, exploring a new class of plasma physics for the first time.

### **Goal 3.0: Provide Effective and Efficient Science and Technology Program Management**

**Weight:** 25.00%

**Score:** 3.2                      **Grade:** B+

#### **Goal Evaluation:**

MECI at the Linac Coherent Light Source (LCLS) provides a unique facility capable of conducting world-class research in the area of HEDLP. Effective MECI management has enabled a smooth transition from project construction to user-science without a delay for commissioning, with an aggressive user-assisted commissioning plan that has been effectively planned and implemented.

#### **Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision**

**Weight:** 35.00%

**Score:** 3.0                      **Grade:** B

##### **Objective Evaluation:**

SLAC has not met expectations in the effectiveness of their strategic planning and stewardship of the field. SLAC has incorporated the unique capabilities of MECI into their existing LCLS science user program and have visions of forming a local SLAC High Energy Density Science group to establish an institutional leadership in this area. The vision is SLAC-centric however and would be more effective and provide better stewardship of the field if they reached broader to link with other west-coast labs and leverage complementary capabilities.

#### **Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management**

**Weight:** 30.00%

**Score:** 3.6                      **Grade:** A-

##### **Objective Evaluation:**

Strong MECI management has enabled a smooth transition from project construction to user-science. The proposal response and success for FY 2012 time on LCLS during the user-assisted commissioning phase demonstrates SLAC has been committed to early science discovery and maximum utilization.

#### **Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**

**Weight:** 35.00%

**Score:** 3.1                      **Grade:** B+

##### **Objective Evaluation:**

The communication between SLAC and FES has been frequent and generally responsive; however, there have been several communication and implementation mismatches that have consumed resources to resolve. Both parties recognize that communication has to evolve during the completion of the project and changeover to science use and the launching of a world-class program.

**Headquarters  
SLAC National Accelerator Laboratory  
FY 2012 Performance Evaluation  
Office of Science**

**Goal 4.0: Provide Sound and Competent Leadership and Stewardship of the Laboratory**

**Weight:** 100.00%

**Score:** 3.8                      **Grade:** A

**Goal Evaluation:**

This Goal evaluates the Contractor's capabilities and performance in leading the direction of the overall Laboratory, the responsiveness of the Contractor to issues and opportunities for continuous improvement, and corporate office involvement/commitment to the overall success of the Laboratory.

The overall grade assigned for this Goal is A. SC's assessment of this Goal is provided with respect to each of the three Performance Objectives.

**Objective 4.1: Leadership and Stewardship of the Laboratory**

**Weight:** 33.00%

**Score:** 3.9                      **Grade:** A

**Objective Evaluation:**

In FY 2012, the Contractor exceeded SC's expectations with respect this objective. Highlights of the Contractor's performance in this area include:

- SLAC's vision to be the premier Photon Science Laboratory is well defined and engrained laboratory-wide.
- The Linac Coherent Light Source (LCLS) scientific output and performance has been recognized through the DOE and international scientific communities.
- SLAC has transitioned to a *culture of accountability, one where leadership holds the Laboratory accountable for the laboratory culture. In this regard, there is no safety culture, only a laboratory culture at SLAC.*
- SLAC leadership effectively turned around a negative safety trend in the second half of FY 2012.
- SLAC has implemented a strategy for increasing the laboratory budget through relationships external to DOE. The number and budget of "Work for Others" projects has increased, particularly in accelerator sciences.

**Basic Energy Sciences**

With regard to BES, SLAC continues to develop an exciting scientific vision for the Laboratory. The LCLS and Stanford Synchrotron Radiation Lightsource (SSRL) leadership worked closely to establish SLAC as a world leader in light sources. The recent change in senior laboratory management in photon science left a leadership gap that needs to be addressed.

**Objective 4.2: Management and Operation of the Laboratory**

**Weight:** 33.00%

**Score:** 3.6

**Grade:** A-

**Objective Evaluation:**

In FY 2012, the Contractor exceeded SC's expectations with respect this objective. Highlights of the Contractor's performance in this area include:

- Accountability and responsibility have become more prevalent in the lower levels of the SLAC organization.
- There is a strong partnership with good communication; the SLAC Site Office (SSO) has been made aware of issues and incidents in a timely manner; working relationships between SLAC and SSO are stronger; partnering is more seamless; as a result, SSO transactional oversight has been reduced, shifting our focus to processes and less on day-to-day compliance issues.
- SLAC mitigate/retired its highest operational risk in repairing and replacing old and damaged portions of its electrical distribution network, including flawlessly replacing all end-of-life 230KV switches.
- The Contractor Assurance System (CAS) Peer Review in January found CAS to be mature and the tri-party partnership working extremely well. Areas still needing improvement include business, facilities, and some project management systems.
- SLAC substantially reduced the cost and increased the functionality of fire protection services by shifting coverage from Palo Alto to Menlo Park in May 2012.

**Basic Energy Sciences**

With respect to BES, SLAC management is to be commended for the concerted effort to effect changes in the laboratory strategic planning process, infrastructure, and management practices to ensure efficient operations of the Laboratory. SLAC senior management communicated well with BES and was cognizant of BES programmatic priorities and goals. SLAC management continues to exercise prudent oversight and leadership in program and project management, especially in managing the LCLS-II project.

**Objective 4.3: Contractor Value-added**

**Weight:** 34.00%

**Score:** 4.0

**Grade:** A

**Objective Evaluation:**

In FY 2012, the Contractor exceeded SC's expectations with respect this objective. Highlights of the Contractor's performance in this area include:

- Stanford University (SU) continues to be a strong partner and supporter of SLAC. SU has been critical as a partner in resolving laboratory-wide issues such as the electrical power delivery for the datacenter and historical preservation issues with the State Historic Preservation Officer (SHPO).
- The Arrillaga Athletic Facility was completed and is now fully operational (\$9M) and the Stanford Research Computing Facility (SRCF) broke ground (\$60M). Both projects are privately funded.

- SU continues to attract top talent to SLAC in both scientific and operational disciplines.

**Basic Energy Sciences**

With respect to BES, the Laboratory has successfully partnered with SU in strategic hires for the BES programs.

**The Contractor met the notable outcomes identified for this objective in its FY 2012 PEMP.**

*Improve the Stanford University Contractor Assurance System by developing an improvement plan incorporating feedback from the SC CAS peer review. (Objective 4.3)*

Completed March 2012.

*Effectively manage contract change (e.g., home office expenses, improved contract terms and conditions). (Objective 4.3)*

Completed, with a new contract in place on October 1, 2012; home office expenses have been eliminated and substantially improved contract terms have been agreed to.