



U.S. DEPARTMENT OF
ENERGY

Office of
Science

SLAC Site Office

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DEC 14 2016

TO: CHI-CHANG KAO, SLAC DIRECTOR

FROM: PAUL GOLAN, SSO MANAGER 

SUBJECT: SLAC FY16 PERFORMANCE EVALUATION AND MEASUREMENT
PLAN FEEDBACK

The purpose of this memorandum is to formally transmit FY16 PEMP feedback to SLAC National Accelerator Laboratory; these results were reviewed with the SLAC/Stanford University senior leadership team in Washington DC on December 12, 2016.

FY16 represented another year of SLAC delivering of outstanding science supported by extremely solid management and operations systems, leaders, managers, and staff. SLAC and Stanford embody an empowered and accountable culture that I believe is best-in-class within the Office of Science and was recognized as such in the Department of Energy by selection of SLAC to execute the Revolutionary Working Group contract. Through the actions of our partnership, we continue to be the standard bearer for the Department of Energy in driving innovation across not only our science portfolio, but in how we approach and deliver our work.

We will certainly miss the leadership and sponsorship of Stanford President John Hennessey, Stanford Provost John Etchemendy, and Stanford Vice President for SLAC Bill Madia. Their contributions and faith in SLAC were critical in the absolute transformation of SLAC into a best-in-class 21st century US National Laboratory. We look forward to working with Stanford's new leadership team including Mark Tessier-Lavigne and an old friend of SLAC, Persis Drell.

SLAC's Operations team, led by Norbert, simply deliver. His team brings with it standards, diversity of thought, and innovation that are second to none in Science. It is yours and Norbert's challenge to keep this team together and to continue to challenge them to higher levels of excellence.

To remind us how far we have come, I am attaching a copy of the FY07 PEMP, the first year I was here. Back then, the very future of SLAC was in question. Let us jointly endeavour to continue to raise the performance bar and may SLAC continue to deliver in the spirit of Pief, when ask where would SLAC be in 10 to 15 years, Pief responded I don't know "unless somebody has a good idea... as it turns out, somebody always has had a good idea which was exploited and which has led to a new lease on life for the laboratory."

U.S. Department of Energy

Office of Science

Fiscal Year 2016

**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, 2015, to September 30, 2016



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I. OVERALL SUMMARY RATING/FEE

Performance-Based Score and Adjectival Rating:

The basis for the evaluation of Stanford University (SU or the Contractor) management and operations of the SLAC National Accelerator Laboratory (SLAC or the Laboratory) during FY 2016 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
- 4.0 Provide Sound and Competent Leadership and Stewardship of the Laboratory
- 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

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 compared to Figure 1. 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 for 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).

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+

Figure 1. FY 2016 Contractor Letter Grade Scale

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, Construction and Operations of Research Facilities	A-
3.0 S&T Program Management	A-
4.0 Leadership/Stewardship	A-
5.0 ES&H	A-
6.0 Business Systems	B+
7.0 Infrastructure	A-
8.0 Safeguards/Security	B+

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
Goal 1.0 Mission Accomplishment	3.6	18.00%	
Goal 2.0 Design, Fabrication, Construction and Operations of Research Facilities	3.5	57.00%	
Goal 3.0 S&T Program Management	3.6	25.00%	
Initial S&T Score			3.5

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

For Goals 1.0 and 2.0, the weights are based on fiscal year costs for each program distributed between Goals 1.0 and 2.0. For Goal 3.0, the weight is set as a fixed percentage of 25% for all laboratories.

M&O Performance Goal	Numerical Score	Weight	
5.0 ES&H	3.7	30.0%	
6.0 Business Systems	3.4	30.0%	
7.0 Infrastructure	3.6	30.0%	
8.0 Safeguards/Security	3.3	10.0%	
Initial M&O Score			3.5

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

While tables within the executive summary report show scores rounded at the goal level, in calculating the S&T and M&O scores all decimal places are carried over until the final calculation.

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

	Numerical Score	Weight	
Initial S&T Score	3.5	75%	
Goal 4.0 Leadership/Stewardship	3.6	25%	
Final S&T Score			3.5
Initial M&O Score	3.5	75%	
Goal 4.0 Leadership/Stewardship	3.6	25%	
Final M&O Score			3.5

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

The percentage of the available performance-based fee that may be earned by the Contractor shall be determined based on the final score for S&T (See Table C) and then compared to Figure 3, below. The final score for M&O from Table C shall then be utilized to determine the final fee multiplier (see Figure 3) which will determine the final percentage of fee earned (see Table D). The actual amount of performance-based fee earned for FY 2016 is then calculated AS shown in Table E.

Overall Weighted Score from Table A	Percent S&T Fee Earned	M&O Fee Multiplier
4.1 to 4.3	100.00%	100.00%
3.8 to 4.0	97.00%	100.00%
3.5 to 3.7	94.00%	100.00%
3.1 to 3.4	91.00%	100.00%
2.8 to 3.0	88.00%	95.00%
2.5 to 2.7	85.00%	90.00%
2.1 to 2.4	75.00%	85.00%
1.8 to 2.0	50.00%	75.00%
1.1 to 1.7	0.00%	60.00%
0.8 to 1.0	0.00%	0.00%
0.0 to 0.7	0.00%	0.00%

Figure 3. Performance Based Fee Earned Scale

Overall Fee Determination	
Percent S&T Fee Earned From Figure 3.	94.00%
M&O Fee Multiplier From Figure 3.	X 100.00%
Overall Earned Performance-Based Fee	94.00%

Table D. Final Percentage of Performance Based Fee Earned Determination

Earned Fee Calculation	
Available Fee	\$4,850,000.00
Overall Earned Performance - Based Fee (Table D)	X 94.00%
Earned Fee	\$4,559,000.00

Table E. Earned Fee 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.

The Department has assigned an overall grade of A- for the Performance Goal. SC assessments of the Goals and related Objectives are summarized below.

SC Basic Energy Sciences (BES)

Score: 3.5 **Grade:** A-

Goal Evaluation:

- BES-funded research at SLAC continues to produce world-leading and highly significant scientific results in quantum materials and ultrafast chemical sciences that use the core photon science competency of SLAC. Developments in high-throughput characterization, theory, and *in operando* catalyst characterization are unique strengths at SLAC, and provide important tools and mechanistic insights for JCAP. Continued management attention to identify specific science goals and strategies that best capitalize on the breakthrough capabilities of Linac Coherent Light Source (LCLS) and the upcoming LCLS-II should be the highest priority.

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

Weight: 50.00%

Score: 3.4 **Grade:** B+

Objective Evaluation:

- The review of the Ultrafast Chemical Science program found the program to be world-class, demonstrating outstanding scientific quality while also leveraging the unique capabilities of the LCLS. The Director must assure that new subtasks are well-integrated into the program and that new leadership is developed for existing subtasks.
- SLAC is playing an increased role in JCAP and providing important capabilities and tools for the discovery and characterization of catalysts for CO₂ reduction.
- Based on the recent triennial review, MSE-funded research at SLAC continues to produce highly significant scientific results in quantum materials that use the core photon science competency of SLAC. To further enhance the topical impact of ultrafast research, SLAC was encouraged to transition to specific science goals. A project in biomolecular materials research was ended due to mixed reviews and lack of synergy within the project and with the balance of the portfolio.

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:

- The new Division Director in Chemical Science has successfully transitioned to the lab and already made important contributions to formulating the strategic vision for the program. The Ultrafast Chemical Sciences Program at SLAC is pushing the frontiers in ultrafast and high-field science to understand and ultimately control matter at atomic spatial scales and electronic time scales. Researchers in the program also play a critical role in identifying, developing, and advancing break-through imaging capabilities using the LCLS X-ray laser at SLAC.
- SLAC provided leadership for the Roundtable on Sustainable Ammonia Synthesis.
- SLAC scientific staff were leaders of the BRN workshop on quantum materials and of the Exascale requirements review.
- The review identified many SLAC PIs as world-leading in their respective fields. Strong scientific staff are being brought into the program from Stanford University.

SC Biological and Environmental Research (BER)**Score: 3.2 Grade: B+****Goal Evaluation:**

SLAC is performing well in subsurface biogeochemistry and structural molecular biology elements; the lab has yet to present an integrated overarching vision for research aligned with the BER portfolio.

Objective 1.1: Provide Science and Technology Results with Meaningful Impact on the Field**Weight: 60.00%****Score: 3.2 Grade: B+****Objective Evaluation:**

- The Subsurface Biogeochemistry Research (SBR) SFA continues to achieve valuable new scientific insights into uranium behavior in subsurface environments, particularly on the impact of organic matter and microbes on binding of uranium species to minerals in soils, and on systems related to uranium speciation.
- SLAC's Structural Molecular Biology (SMB) provides an integrated suite of techniques that enable significant scientific accomplishments by a geographically diverse scientific community. At least 220 publications, many in high impact journals, are reported for FY 2016.

Objective 1.2: Provide Quality Leadership in Science and Technology that Advances Community Goals and DOE Mission Goals**Weight: 40.00%****Score: 3.2 Grade: B+****Objective Evaluation:**

- The SBR SFA is obtaining new insights into systems that are highly relevant to DOE environmental missions.
- The SMB program is a leader among DOE national user facilities in enabling forefront research in all areas of biology, offering a suite of multiple techniques under one management, thus encouraging integrated approaches to problem solving. Through this approach, SMB makes a

major contribution to the DOE mission goal of providing such facilities for use in all areas of science. We would like to see an evolution of this contribution towards quality research tackling priority scientific questions in the BER portfolio.

- We appreciate the contribution of SLAC scientists towards workshops for the SEAB task force.

SC Fusion Energy Sciences (FES)

Score: 3.8 Grade: A

Goal Evaluation:

SLAC continues to demonstrate scientific excellence in the field of High Energy Density Physics as evidenced by publications in high impact-journals such as Physical Review Letters and Nature. Furthermore, the laboratory is to be commended for leading a transformation in the field of HEDP to a rep-rated scientific endeavor through the development of techniques and technologies capable of more fully exploiting the LCLS.

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

Weight: 50.00%

Score: 3.8 Grade: A

Objective Evaluation:

The Matter in Extreme Conditions (MEC) instrument at SLAC is transforming the field of High Energy Density (HED) plasmas. SLAC continues to implement innovative techniques enabling cutting-edge research with unprecedented spatial and temporal resolution of HED matter. The scientific output has been excellent and of the highest caliber, as evidenced by publications in high impact-journals such as Physical Review Letters and Nature, impacting a variety of fields ranging from revealing details about meteor impacts, giant planets, and cosmic particle accelerators to producing the first evidence for a long-hypothesized "metallic" state of hydrogen.

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

Weight: 50.00%

Score: 3.8 Grade: A

Objective Evaluation:

SLAC HED scientists provided strong community leadership through advancing the globally-unique experimental capabilities of the MEC and the independent organization of workshops with international reach focused around the core capabilities of the MEC instrument. In addition to the annually-held High Power Laser workshop that brings the HED science community around MEC to inspire national and international interest in the future possibilities of the facility, laboratory scientists organized and hosted the 11th bi-annual High Energy Density Laboratory Astrophysics conference. Additionally, SLAC researchers continue to set the international research priorities and directions for HED science using X-FELS.

SC High Energy Physics (HEP)

Score: 3.7 Grade: A-

Goal Evaluation:

HEP conducted a review of the entire HEP program at SLAC, and the committee found many strengths in the SLAC scientific program and staff.

- Contributions to ATLAS physics research, operations, and the HL-LHC upgrade have been impactful.
- Intensity Frontier effort has made a meaningful impact on HEP neutrino science in a short time.
- At the Cosmic Frontier, the FGST/DES work on indirect detection of dark matter signals and the FGST searches for LIGO-coincident signals are great examples of project synergies.
- The PWFA program based at FACET published many high impact publications in Nature Physics and Physical Review Letters on both electron and positron acceleration.
- The theory program has been revitalized with new hires, and those new hires are making important contributions to the program, including interesting new ideas for experiments, and a strong and continuing impact on dark energy and dark matter science programs.

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

Weight: 60.00%

Score: 3.6 Grade: A-

Objective Evaluation:

- Contributions by SLAC to ATLAS physics research, particularly through the group's expertise in jet substructure, have been innovative and successfully adopted across a range of ATLAS results. As the ATLAS Run 2 program continues, the analysis publication rate by SLAC is expected to increase to compete effectively with other labs at the next review cycle. The group also has played very important roles in ATLAS IBL and TDAQ operations. The ATLAS group has developed coherent initial plans for the HL-LHC upgrade, which should continue to be coordinated with U.S. ATLAS project management. The Energy Frontier group could have higher visibility in science results.
- Intensity Frontier effort has made a meaningful impact on HEP neutrino science in a short time. SLAC is making an impact in the short- and long-baseline neutrino physics programs.
- At the Cosmic Frontier, the FGST/DES work on indirect detection of dark matter signals in Milky Way dwarf galaxies and the FGST results in searching for a signal in conjunction with LIGO observations of black hole mergers are great example of project synergies. The results from FGST on dark matter searches continue to improve.
- The Detector R&D program is having high scientific impact based on 2016 comparative lab reviews.
- The theoretical high-energy physics group performs research with a broad view across sub-disciplines, addressing important questions ranging from the development of fundamental theories to detailed calculations that are essential input for high energy physics experiments. The research topics span the construction of event generators (ECA recipient), precision QCD, light-front holography, Beyond the Standard Model phenomenology and model building, dark matter and dark sector phenomenology, supernova and neutrino physics, as well as formal theory. The group provides strong theoretical support to the experimental high energy physics programs at SLAC across all three frontiers, and also engages with a broad array of experiments being carried out both nationally and internationally. The PWFA program based at FACET has published many high impact publications in Nature Physics and Physical Review Letters on both electron and positron acceleration.

- Some technologies developed in GARD RF Acceleration Thrust are being commercialized through industries, some with help from Accelerator Stewardship and BES.

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

Weight: 40.00%

Score: 3.9 **Grade:** A

Objective Evaluation:

- The 2016 SLAC Institutional Review pointed out many strengths of the SLAC scientific program and staff. Several recent hires were praised by the review committee. The focus of the labs program on P5 has improved markedly over the last several years. The Dark Matter and Theory efforts are notable in this respect.
- The alignment of the science program with the directives of P5 have improved markedly in the past several years. Several recent scientific hires have reinforced that alignment and have been accomplished within a challenging fiscal environment.
- The Cosmic Frontier comparative review conducted in July 2016 reported that SLAC has expanded their program into new areas by adding excellent senior faculty. The CMB program has great synergy with the lab's BES program. Members of the program have been recognized with 2016 Crafoord Prize in Mathematics and Astronomy, among other awards.
- Theory program has been revitalized with new hires and they are making important contributions to the program, including interesting new ideas for experiments. There is a strong continuing impact on dark energy and dark matter science programs.
- The PWFA and RF sources/structures programs are world-leading. FACET is a unique facility, the only one that can carry out PWFA experiments for both electron and positron. SLAC is the key contributor in the development of the Advanced Accelerator Concepts research strategy and roadmap for the PWFA concept.
- The National Science Foundation Statistics for 2014 show that women were awarded 46.3% of all science and engineering PhDs and 20.4% of physics & astronomy PhDs. Similar statistics for minorities are 27% of all S&E PhDs, and 24.4% of all P&A PhDs. SLAC continues to trail very significantly in diversifying its workforce, with 15% [14%] women in the general science & technical staff [in lab leadership], and 19% [8%] minorities. In the HEP program, SLAC has the second worst performance on diversity & inclusion.

SC Workforce Development for Teachers and Scientists (WDTS)
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Score: 3.2 **Grade:** B+

Goal Evaluation:

SLAC soundly executes WDTS sponsored programs and is commended for their timely responses to requested/required programmatic actions, helping assure that WDTS programmatic baselines are fully achieved.

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

Weight: 80.00%

Score: 3.2 Grade: B+

Objective Evaluation:

SLAC soundly executes WDTS sponsored programs and is commended for their timely responses to requested/required programmatic actions, helping assure that WDTS programmatic baselines are fully achieved.

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

Weight: 20.00%

Score: 3.2 Grade: B+

Objective Evaluation:

SLAC soundly executes WDTS sponsored programs and is commended for their timely responses to requested/required programmatic actions, helping assure that WDTS programmatic baselines are fully achieved.

Notable Outcome(s):

SC Basic Energy Sciences:

(Objective 1.1)

Notable 1: Deliver impactful science and engineering to advance the mission of the Fuels from Sunlight Energy Innovation Hub—the Joint Center for Artificial Photosynthesis (JCAP)—as measured by the FY 2016 Progress Reports and Review.

Outcome: JCAP is making excellent progress towards the research objectives of the renewal project, the creation of the scientific foundation for solar driven conversion of CO₂ into fuels. The renewal project has already demonstrated progress in several key areas. Particularly impactful science has resulted from the enhanced theory effort to understand CO₂ reduction mechanisms, the development and application of synchrotron-based characterization techniques, and the combination of unique experimental and theoretical high-throughput methods for materials discovery. Specific scientific accomplishments include discovery of metal oxide photoelectrode corrosion mechanisms, introduction of selective defect states to enhance the efficiency and stability of photovoltaics, and development of ambient pressure X-ray techniques to probe solid-liquid electrochemical interfaces. - **Achieved**

Below are tables that show which Program Offices provided performance evaluation input for this Goal and the overall performance score for the Goal.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
SC Basic Energy Sciences				
1.1 Impact	B+	3.4	50.0%	
1.2 Leadership	A-	3.6	50.0%	
Overall BES Total				3.5
SC Biological and Environmental Research				
1.1 Impact	B+	3.2	60.0%	
1.2 Leadership	B+	3.2	40.0%	
Overall BER Total				3.2
SC Fusion Energy Sciences				
1.1 Impact	A	3.8	50.0%	
1.2 Leadership	A	3.8	50.0%	
Overall FES Total				3.8
SC High Energy Physics				
1.1 Impact	A-	3.6	60.0%	
1.2 Leadership	A	3.9	40.0%	
Overall HEP Total				3.7
SC Workforce Development for Teachers and Scientists				
1.1 Impact	B+	3.2	80.0%	
1.2 Leadership	B+	3.2	20.0%	
Overall WDTS Total				3.2

Table 1.1. Program Performance Goal 1.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
SC Basic Energy Sciences	A-	3.5	41.2%	
SC Biological and Environmental Research	B+	3.2	1.4%	
SC Fusion Energy Sciences	A	3.8	4.1%	
SC High Energy Physics	A-	3.7	52.9%	
SC Workforce Development for Teachers and Scientists	B+	3.2	0.4%	
Performance Goal 1.0 Total				3.6

Table 1.2. Overall Performance Goal 1.0 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 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.

The Department has assigned an overall grade of A- for the Performance Goal. SC assessments of the Goals and related Objectives are summarized below.

SC Basic Energy Sciences (BES)

Score: 3.5 Grade: A-

Goal Evaluation:

- The LCLS-II project received CD-2/3 in FY 2016. SLAC achieved good performance metrics during this period, but continued vigilance in controlling cost growth and managing contingency is needed. While overall the project is being managed well, there are challenges at times in managing across the partner laboratories. Improved management oversight of and communications with the partner labs are needed to ensure proper interface and integration are maintained.
- LCLS operates with high reliability, despite some unexpected failures, and delivered record hours of beamtime with increased experimental efficiency in FY 2016, while also developing new capabilities. SSRL faced greater challenges in terms of unexpected failures, from which it recovered well, and in terms of exploring opportunities to improve its capabilities to remain competitive in its class.
- The Stanford Synchrotron Radiation Lightsource (SSRL) worked well with NSLS-II to accommodate former NSLS users during the dark period of the transition to NSLS-II.

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

Weight: 15.00%

Score: 3.4 Grade: B+

Objective Evaluation:

- SLAC, with support of the partner laboratories, successfully obtained approval for CD-2/3 in FY 2016.

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: 35.00%

Score: 3.4 Grade: B+

Objective Evaluation:

- SLAC has acceptably executed its assigned project scope with good performance metrics averaged over FY 2016. However, the budget at completion continues to increase along with

variances captured in the estimate to complete for the overall project. Despite very good performance on procurements, the project contingency continues to decrease.

Objective 2.3: Provide Efficient and Effective Operation of Facilities

Weight: 30.00%

Score: 3.6 **Grade:** A-

Objective Evaluation:

- The LCLS staff have developed and installed standard experimental setups to improve operational efficiency and optical devices to split the x-ray beam, which enabled two or more experiments to be conducted simultaneously. Even with a few unexpected equipment failures, LCLS continues to operate with high reliability and achieve the operation goal of the facility.
- The SSRL continues to operate with high efficiency and provide advanced capabilities serving large user communities. Even with a few unexpected equipment failures earlier during FY2016, SSRL has recovered nicely and achieved over 97% reliability for the machine operation.

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

Weight: 20.00%

Score: 3.7 **Grade:** A-

Objective Evaluation:

In FY2016, LCLS delivered record hours of beamtime, and increased the usage of standard experimental setup. In addition, more simultaneous experiments have been scheduled. These efforts have accommodated 50% more general user experiments compared to FY 2015. The facility staff continuously develop new capabilities and instruments such as the completion of the Macromolecular Femtosecond Crystallography (MFX) instrument earlier this year. The SSRL continues to explore the opportunities to develop new beamlines and upgrade current instruments such as new micro-beam Macromolecular Crystallography beamline (BL 12-1) to enhance its capabilities and capacities to remain competitive among the worldwide synchrotron sources of its class. The SSRL staff also work closely with LCLS staff helping to develop ultra-fast capabilities such as developing sample manipulation systems for MFX. The SSRL continues working with NSLS-II in FY 2016 to enable the former NSLS users to conduct their research at SSRL, especially in areas employing X-ray spectroscopy and protein crystallography, during the dark period of the NSLS to NSLS-II transition.

SC Biological and Environmental Research (BER)

Score: 3.5 **Grade:** A-

Goal Evaluation:

Operations planning has enhanced access to structural biology stations and increased the user community.

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 has continued in FY 2016 toward increasing and enhancing access to the SSRL and LCLS structural biology stations by a large user community. The SSRL remote access program is responsible for majority of macromolecular crystallography users. The SMB program continues to provide substantial assistance to former users of the NSLS while construction of the NSLS-II biology beamlines have begun commissioning. A dedicated station for MFX was completed and commissioned on LCLS, and is now available for use. This station not only increases the MFX user time available at LCLS, but also provides a permanent experimental environment that is more familiar to scientists who have experience collecting data at synchrotron beamlines.

SC Fusion Energy Sciences (FES)
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Score: 3.6 **Grade:** A-

Goal Evaluation:

The laboratory significantly exceeded the threshold necessary to meet a Notable Outcome for the MEC instrument. The successful implementation of modular experimental configurations improved the operational efficiency, yielding a 50% increase in experimental campaigns on MEC in FY 2016.

Objective 2.3: Provide Efficient and Effective Operation of Facilities

Weight: 20.00%

Score: 3.8 **Grade:** A

Objective Evaluation:

SLAC significantly exceeded the threshold necessary to meet a Notable Outcome. "Standard" experimental configurations were delivered at the MEC in May 2016. Four experiments were successfully completed over an 11-day period. Three of these experiments utilized the new X-ray diffraction standard configuration, while the fourth used a combined X-ray diffraction and X-ray Thomson scattering standard configuration. Fielding these experiments resulted in a 30% increase in the number of user experiments completed. Overall in FY 2016, the MEC fielded seventeen experiments (compared to eleven in FY 2015), representing a >50% increase. The modular experimental configuration improved the operational efficiency, by minimizing set-up time and reducing time-consuming changes between experiments, ensuring a rapid turnaround between four user groups over the 11-day period. Excellent data quality was reported for all four experiments. All groups are working on high quality publications from these data-rich experiments.

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

Weight: 80.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:

The MEC instrument exceeded expectations as a scientific platform. The MEC performed transformational science and supported a broader scientific community in High Energy Density Science, including U.S. national labs, academia, and international institutions. In FY 2016, the LCLS PRP selected seventeen proposals, based on scientific/technical merit, for beam time on the MEC. The laboratory MEC team provided effective and efficient support to the selected users to increase the experimental success and provide impactful S&T results. Experimental design reviews were conducted with users at three, two, and one month intervals before experiments to ensure readiness.

SC High Energy Physics (HEP)

Score: 3.4 Grade: B+

Goal Evaluation:

- SLAC has put in place a strong project management culture, but sometimes is required to work with scientists without strong project management backgrounds. There is still work to do with bringing such individuals up to speed.
- FACET completed its planned run in FY 2016 and has been a very successful effort with breakthrough science especially in the area of plasma wakefield acceleration of electrons and positrons.
- FACET II received CD-1 in December 2015 and an Independent Project Review for CD-2 was held in August. The project could be adversely affected by a full year continuing resolution, but the lab has proposed what appears to be a very effective mitigation strategy. The strategy is both proactive and creative.
- The LSST Project received CD-3 in FY 2015 and was in full fabrication for all of this year. The project has maintained good cost and schedule performance during the entire year. The project has been dealing with some issues of vendors failing to meet specifications on critical items.

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

Weight: 35.00%

Score: 3.4 Grade: B+

Objective Evaluation:

Two projects fall under the objective. The FACET II project and the SuperCMDS project. FACET II received CD-1 in December 2015 and an Independent Project Review for CD-2 was held in August. The review found the project ready to proceed. The project could be adversely affected by a full year continuing resolution, but the lab has proposed what appears to be a very effective mitigation strategy. The strategy is both proactive and creative. SuperCMDS also received CD-1 in December 2015 but will not seek CD-2 until FY 2017. An independent project review found progress towards CD-2 was slower than planned.

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: 50.00%

Score: 3.3 Grade: B+

Objective Evaluation:

The LSST Project is the only HEP project at SLAC that is covered by this objective. The project received CD-3 in FY 2015 and was in full fabrication for all of this year. The project has maintained good cost and schedule performance during the entire year. There have been issues with vendors, but the lab has been taking corrective actions to manage these issues. A joint DOE-NSF review of the DOE camera project and the NSF telescope project was held in August and the results were generally good.

Objective 2.3: Provide Efficient and Effective Operation of Facilities

Weight: 15.00%

Score: 3.6 **Grade:** A-

Objective Evaluation:

FACET completed its planned run in FY 2016 and has been a very successful effort with breakthrough science especially in the area of plasma wakefield acceleration of electrons and positrons. In FY 2016 FACET hosted its most complex experiment yet in the Trojan Horse Injection Experiment. Due to the location of FACET inside the SLAC linac tunnel, the FACET team has to work very closely with the users and this experiment is an example of the strong facility user coordination that FACET has developed. This year also featured the demonstration of positron beam accelerated by the wakefield of a positron beam.

Notable Outcome(s):**SC Basic Energy Sciences:**

(Objective 2.2)

Notable 1:

Effectively manage and execute LCLS-II work scope in accordance with the Project Execution Plan and achieve Critical Decision CD-2, Approve Performance Baseline, and Critical Decision CD-3, Approve Start of Construction, in FY 2016.

Outcome: SLAC obtained CD-2/3 in FY 2016. - **Achieved**

SC Fusion Energy Sciences:

(Objective 2.3)

Notable 1:

Deliver standardized experimental configurations for X-ray diffraction (XRD) and X-ray Thomson scattering (XRTS) to increase the number of experiments and improve operational efficiency on the MEC instrument.

Outcome: SLAC significantly exceeded the threshold necessary to meet the Notable Outcome. The delivered standardized experimental configurations for X-ray diffraction and X-ray Thomson scattering to increase the number of experiments and improve the operational efficiency on the MEC instrument. SLAC completed 30% more experiments than in FY 2015. The modular experimental configuration used improved the operational efficiency. - **Achieved**

Below are tables that show which Program Offices provided performance evaluation input for this Goal and the overall performance score for the Goal.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
SC Basic Energy Sciences				
2.1 Support Laboratory Programs	B+	3.4	15.0%	
2.2 Construction of Facilities	B+	3.4	35.0%	
2.3 Operation of Facilities	A-	3.6	30.0%	
2.4 S&T Results and Benefits to External User Communities	A-	3.7	20.0%	
Overall BES Total				3.5
SC Biological and Environmental Research				
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%	
Overall BER Total				3.5
SC Fusion Energy Sciences				
2.1 Support Laboratory Programs			0.0%	
2.2 Construction of Facilities			0.0%	
2.3 Operation of Facilities	A	3.8	20.0%	
2.4 S&T Results and Benefits to External User Communities	A-	3.5	80.0%	
Overall FES Total				3.6
SC High Energy Physics				
2.1 Support Laboratory Programs	B+	3.4	35.0%	
2.2 Construction of Facilities	B+	3.3	50.0%	
2.3 Operation of Facilities	A-	3.6	15.0%	
2.4 S&T Results and Benefits to External User Communities			0.0%	
Overall HEP Total				3.4

Table 2.1. Program Performance Goal 2.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
SC Basic Energy Sciences	A-	3.5	85.8%	
SC Biological and Environmental Research	A-	3.5	1.3%	
SC Fusion Energy Sciences	A-	3.6	0.7%	
SC High Energy Physics	B+	3.4	12.2%	
Performance Goal 2.0 Total				3.5

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.

The Department has assigned an overall grade of A- for the Performance Goal. SC assessments of the Goals and related Objectives are summarized below.

SC Basic Energy Sciences (BES)

Score: 3.6 **Grade:** A-

Goal Evaluation:

- SLAC has the potential to be the world leader in ultrafast science, building on the transformational capabilities of LCLS and LCLS-II. Beyond the technical side of facility development, a broad lab-wide strategic plan and scientific vision for ultrafast science should be a high priority. Strategic planning at the program level is progressing well, particularly in ultrafast chemical science.
- Scientific integration and coordination at the program level has been strong. For instance, the submission of pertinent white paper topics and subsequent proposals to MSE, including high pressure science and a coordinated effort in theory and computation as it pertains to scattering sciences, resulted in the newly funded Theory Institute for Materials and Energy Spectroscopies (TIMES) project.
- For both light sources, SLAC has continued to provide vision and leadership toward development of new instruments and capabilities for users, working with the scientific communities. LCLS management continues to lay the necessary groundwork to realize the science opportunities offered by the LCLS-II project. SSRL has worked closely with LCLS to develop common scientific programs that will benefit both facilities.
- SLAC provided high-quality highlights that demonstrate the strong impact of BES-funded research projects. Comprehensive monthly teleconferences with BES provide programmatic updates indicative of effective leadership and management of the portfolios. The light source management teams have been communicating and responding very well with BES.
- Personnel management has been uneven. In one case, a strong early career Principle Investigator (PI) was successfully integrated into the ultrafast program to strengthen its emphasis in synthesis and material stability in functional environments. On the other hand, in a different case of an early career staff member, BES intervention was needed to reach a satisfactory outcome. Also, while the LCLS-II project is being managed well overall, difficult challenges in management of the multi-laboratory project require improved oversight of the partner labs.

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

Weight: 30.00%

Score: 3.6 **Grade:** A-

Objective Evaluation:

- The Director of the Chemical Science Division at SLAC continues to develop a strategic plan for ultrafast chemical science that would better integrate BES CSGB-supported programs, thus enhancing the scientific impact of these efforts.

- SLAC has successfully integrated a strong early career PI (William Chueh) into the ultrafast program to strengthen its emphasis in synthesis and material stability in functional environments.
- SLAC has demonstrated excellent strategic vision in the submission of pertinent white paper topics and subsequent proposals to MSE, including high pressure science and a coordinated effort in theory and computation as it pertains to scattering sciences that resulted in the newly funded TIMES project.
- The LCLS management continues providing vision and leadership to develop new instruments and optics that will provide users with new capabilities and more capacities. By working with the scientific communities, LCLS management continues to refine the instrumentation upgrade path to develop instruments to realize the full potential of the new capabilities and science opportunities provided by the LCLS-II project.
- The SSRL management continues providing vision and leadership to improve existing instruments and develop new capabilities that support a wide range of user communities and many BES research programs such as the Synchrotron Catalysis Consortium (SCC). In addition, SSRL has worked closely with LCLS to develop common scientific programs that will benefit both facilities.

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

Weight: 40.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:

- SLAC management (and researchers) continue to strengthen interactions with JCAP-N and JCAP-S to synergistically advance fundamental science for development of photoelectrochemical CO₂ reduction systems.
- BES intervention was required to ensure the retention of a key female PI funded primarily through SSRL; proactive interactions with the MSE coordinator resulted in an expanded effort in the MSE program that retained the PI at SLAC.
- The LCLS management has developed and implemented new processes to manage facility operations more efficiently. The LCLS staff has continuously focused efforts on developing new advanced instruments and capabilities that will improve the facility operation and increase user experimental capacities.
- SSRL management continues to explore new collaborative opportunities with other facilities and institutions to enhance capabilities. SSRL staff are also developing joint programs with LCLS staff and SLAC scientists.
- SLAC is having trouble adequately managing the scope of the project being conducted by the partner laboratories and needs to improve its oversight with respect to controlling costs and schedule. The problems associated with the Qo performance of the initial vendor cavities is a cause for concern.

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

Weight: 30.00%

Score: 3.7 **Grade:** A-

Objective Evaluation:

- Communication between the Chemical Science Division Director and BES was acceptable. SLAC provided high-quality highlights that demonstrate the impact of BES-funded projects. Monthly teleconferences with BES provide programmatic updates indicative of effective leadership and management of the portfolios.
- Regular teleconferences are comprehensive, providing scientific highlights and programmatic updates that demonstrate strong leadership and management of the portfolio.
- The LCLS management team has been communicating and responding very well with program managers of BES SUF Division in FY 2016.
- The SSRL management team has been communicating and responding very well with program managers of BES SUF Division in FY 2016.

SC Biological and Environmental Research (BER)

Score: 3.3 Grade: B+

Goal Evaluation:

Program management, along with coordination and communication with BER, on existing and planned programs is strong and has enabled SLAC to explore new capabilities. More emphasis on engaging external collaborations would likely strengthen alignment with the BER program on research priorities.

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

Weight: 20.00%

Score: 3.1 Grade: B+

Objective Evaluation:

- The Subsurface Biogeochemistry Research (SBR) SFA team is continually planning the long-term goals of the project and discussing them with headquarters staff. This planning includes discussions with scientists leading SFAs at other Labs about common interests, such as hydrology, that may become part of the SLAC SFA in the future.
- SLAC is encouraged to continue progress towards developing capabilities and expertise targeting BER-relevant genome biology in support of DOE's bioenergy and environmental missions. SLAC would do well to cultivate a user base working within BER's Genomic Science program.

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

Weight: 30.00%

Score: 3.4 Grade: B+

Objective Evaluation:

- The SBR SFA management is proactive and coordinates the laboratory, field and SSRL facility aspects of the project, effectively.
- The SMB program leadership continues to manage its suite of experimental stations effectively, ensuring that the plans for improvements are implemented in a timely way.

- SLAC continues to support a study of microbial N-cycling as a pilot project towards connecting detailed molecular scale understanding of microbial metabolism with larger scale environmental process understanding.

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

Weight: 50.00%

Score: 3.4 **Grade:** B+

Objective Evaluation:

- The Subsurface Biogeochemistry Research (SBR) SFA leadership communicates frequently with headquarters and makes carefully prepared presentations about plans for the project.
- The SMB leadership continue to communicate with headquarters effectively, keeping us abreast of new developments, accomplishments and needs as they arise. Several helpful discussions of SLAC's plans for recruiting and developing cryo-EM were initiated by the leadership during FY 2016, ensuring that BER staff were well informed about the plans and have opportunities to respond.
- Continued communication with BER is encouraged, particularly in light new potential developments with cryo-EM. BER needs to understand how this new capability would benefit BER-relevant science.

SC Fusion Energy Sciences (FES)
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Score: 3.5 **Grade:** A-

Goal Evaluation:

SLAC is commended for its strong commitment to making MEC an effective and efficient scientific platform by regularly engaging the scientific community and using the feedback to improve the facility and to plan for upgrades that will keep the U.S. ahead of the competition.

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:

SLAC incorporated the unique capabilities of the MEC into its existing LCLS science user program and has firmly established HED science as a core competency for the laboratory. SLAC's commitment was evident through proactively scoping broader needs, including the recruitment and hiring of highly-qualified personnel in theory and modeling, support for target fabrication, increased user access, and future capability growth. The SLAC HED science division demonstrated the ability to attract and retain the best young researchers internationally, placing itself among the world leaders in this field of study.

The laboratory engaged with the external community to communicate the new MEC capabilities, explore synergistic relationships, and discuss future directions. SLAC should continue to ensure broad community involvement.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management**Weight:** 30.00%**Score:** 3.6 **Grade:** A-**Objective Evaluation:**

The laboratory demonstrated a continued commitment to increased efficiency of the MEC instrument. Efficient science and technology facilities management was demonstrated when SLAC proposed and successfully completed modular standard configurations for experimental runs. These configurations minimized set-up time and reduced time-consuming changes between experiments, ensuring a rapid turnaround between four user groups over the 11-day period. There was about a 30% increase in the number of user experiments completed in run thirteen compared to equivalent periods in run twelve, thanks to the implementation of standard experimental configurations.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**Weight:** 30.00%**Score:** 3.3 **Grade:** B+**Objective Evaluation:**

SLAC's communication with FES has been regular and frequent, achieved through scheduled updates. The laboratory leadership is engaged and was always prepared to respond to the needs of FES.

SC High Energy Physics (HEP)**Score:** 3.5 **Grade:** A-**Goal Evaluation:**

- The lab has very effectively managed sometimes difficult transitions in Intensity, Theory and Energy Frontier; some issues remain in Cosmic Frontier and Technology R&D.
- The Cosmic Frontier comparative review conducted in July 2016 reported that SLAC has expanded their program into new areas by adding excellent senior faculty. With their current or planned major commitments in Cosmic Frontier experiments, they will need to carefully plan a sustainable program going forward or investigate further program redirections. The CMB program has great synergy with the lab's BES program. Despite the FY 2013 review recommendation that SLAC get involved in one G2 dark matter experiment, they have made a major commitment to two such experiments. To make the kind of scientific contribution that SLAC has traditionally made, it will have to rebalance its portfolio in the absence of extra funds.
- Communications with the lab at all levels is often exemplary.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision**Weight:** 30.00%**Score:** 3.6 **Grade:** A-

Objective Evaluation:

- Generally, very good. The lab has very effectively managed sometimes difficult transitions in Intensity, Theory and Energy Frontier; some issues remain in Cosmic Frontier and Technology R&D. At the 2016 Institutional Review, management received recommendations to improve diversity in the workforce and increase engagement with the university community.
- The Cosmic Frontier comparative review conducted in July 2016 indicated that that review panel did not see how all of these programs can be sustained in the long term given the budget available to them. Despite the FY 2013 review recommendation that SLAC get involved in one G2 dark matter experiment, they have made a major commitment to two such experiments. To make the kind of scientific contribution that SLAC has traditionally made, it will have to rebalance its portfolio in the absence of extra funds. The CMB-related work needs to be tailored to fit into a national approach to get to the next-generation experiment. The lab needs to work in coordination with other labs to develop roles and responsibilities in the era of DESI and LSST optimally across the program.
- Upon the request from HEP, SLAC presented a seven-year strategic plan assuming modest growth in funding from FY 2017 to FY 2022: 0%, 1.0%, 1.5%, 2.0%, 2.0%, 2.5%. The plan was the most viable of all the Labs' submissions, with sustainable growth in most subprograms (except Cosmic and GARD) through effective and proactive management. Roles selected are well-matched to SLAC strengths and appropriate for a national lab.
- In the June 2016 SLAC institutional review conducted by HEP, an external review panel recommended that SLAC develop a plan to better attract and retain a diverse early career scientific and engineering staff by addressing work/life balance and family-friendly practices. One immediate outcome of the review was to arrange for all SLAC staff to have equal access to the childcare facilities on the Stanford University campus.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management**Weight:** 45.00%**Score:** 3.4 **Grade:** B+**Objective Evaluation:**

- Lab management is active and engaged. In 2016 Institutional Review, management received recommendation to improve processes and protocols for managing technical and engineering staff across programs and projects.
- In the Cosmic Frontier, planning has started to develop the transition to operations and the operations phases for LSST commissioning, facility operations and DESC operations as well as SuperCDMS-SNOLAB. This planning is expected to need significant attention from lab management to ensure things goes smoothly in terms of roles, responsibilities, documentation, personnel and funding. The lab is doing an excellent job carrying out their responsibilities on FGST operations. Care will need to be taken to ensure that this effort rolls off into just the critical roles that SLAC needs to carry out after FY 2018 and that there are smooth transitions FGST to LSST and other efforts.
- The Detector R&D comparative review conducted in February 2016 recommended that SLAC find a mutually agreeable cost-share arrangement with the lab for ESTB investment. The lab is working on a solution.
- In HEP Computing, individuals in the LSST group have worked on effective use of NERSC for HEP needs, as has the DESC collaboration. The Geant4 team should be commended for its work on the International Geant4 collaboration.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**Weight:** 25.00%**Score:** 3.6 **Grade:** A-**Objective Evaluation:**

Communications with the lab at all levels is often exemplary. Weekly and Monthly teleconferences with upper and mid-level management are productive and effective. Lab management has been proactive in areas of budget, program planning and P5 implementation.

SC Workforce Development for Teachers and Scientists (WDTs)
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Score: 3.2 **Grade:** B+**Goal Evaluation:**

SLAC soundly executes WDTs sponsored programs and is commended for their timely responses to requested/required programmatic actions, helping assure that WDTs programmatic baselines are fully achieved.

Objective 3.1: Provide Effective and Efficient Strategic Planning and Stewardship of Scientific Capabilities and Program Vision**Weight:** 20.00%**Score:** 3.2 **Grade:** B+**Objective Evaluation:**

SLAC soundly executes WDTs sponsored programs and is commended for their timely responses to requested/required programmatic actions, helping assure that WDTs programmatic baselines are fully achieved.

Objective 3.2: Provide Effective and Efficient Science and Technology Project/Program/Facilities Management**Weight:** 50.00%**Score:** 3.2 **Grade:** B+**Objective Evaluation:**

SLAC soundly executes WDTs sponsored programs and is commended for their timely responses to requested/required programmatic actions, helping assure that WDTs programmatic baselines are fully achieved.

Objective 3.3: Provide Efficient and Effective Communications and Responsiveness to Headquarters Needs**Weight:** 30.00%

Score: 3.2 Grade: B+

Objective Evaluation:

SLAC soundly executes WDTS sponsored programs and is commended for their timely responses to requested/required programmatic actions, helping assure that WDTS programmatic baselines are fully achieved.

Notable Outcome(s):

SC Basic Energy Sciences:

(Objective 3.2)

Notable 1: Working in conjunction with LBNL and JCAP-South, successfully execute a plan to transition JCAP R&D from hydrogen production to carbon dioxide reduction for the second phase of the Hub as measured by the FY 2016 Progress Reports and Review.

Outcome: As determined by FY 2016 review and progress reports, JCAP has made a successful transition in research focus and is well positioned to advance fundamental science relevant to solar-driven carbon dioxide reduction. Work has been completed on integrated solar fuels generators for hydrogen generation, with multiple prototypes exhibiting >10% efficiency and stability over >100 hours. (JCAP has also initiated efforts with EERE to translate the hydrogen generation results from phase I to more applied research supported through EERE.) Through increased efforts at SLAC, theory results are providing mechanistic insights about critical steps of electrocatalytic CO₂ reduction while experimental efforts have begun to uncover potentially important correlations between surface structure and catalytic activity/selectivity. - **Achieved**

(Objective 3.2)

Notable 2: Provide effective leadership, management, and integration of LCLS-II Partner Laboratories and Collaborating Institutions to ensure project requirements are met.

Outcome: SLAC is providing adequate oversight of the partner laboratories but needs to improve, particularly, in the areas of controlling costs. - **Achieved**

Below are tables that show which Program Offices provided performance evaluation input for this Goal and the overall performance score for the Goal.

Science Program Office	Letter Grade	Numerical Score	Objective Weight	Overall Score
SC Basic Energy Sciences				
3.1 Efficient Strategic Planning and Stewardship	A-	3.6	30.0%	
3.2 Project/Program/Facilities Management	A-	3.5	40.0%	
3.3 Effective Communications and Responsiveness	A-	3.7	30.0%	
Overall BES Total				3.6
SC Biological and Environmental Research				
3.1 Efficient Strategic Planning and Stewardship	B+	3.1	20.0%	
3.2 Project/Program/Facilities Management	B+	3.4	30.0%	
3.3 Effective Communications and Responsiveness	B+	3.4	50.0%	
Overall BER Total				3.3
SC Fusion Energy Sciences				
3.1 Efficient Strategic Planning and Stewardship	A-	3.5	40.0%	
3.2 Project/Program/Facilities Management	A-	3.6	30.0%	
3.3 Effective Communications and Responsiveness	B+	3.3	30.0%	
Overall FES Total				3.5
SC High Energy Physlcs				
3.1 Efficient Strategic Planning and Stewardship	A-	3.6	30.0%	
3.2 Project/Program/Facilities Management	B+	3.4	45.0%	
3.3 Effective Communications and Responsiveness	A-	3.6	25.0%	
Overall HEP Total				3.5
SC Workforce Development for Teachers and Scientists				
3.1 Efficient Strategic Planning and Stewardship	B+	3.2	20.0%	
3.2 Project/Program/Facilities Management	B+	3.2	50.0%	
3.3 Effective Communications and Responsiveness	B+	3.2	30.0%	
Overall WDTS Total				3.2

Table 3.1. Program Performance Goal 3.0 Score Development

Program Office	Letter Grade	Numerical Score	Weight	Overall Weighted Score
SC Basic Energy Sciences	A-	3.6	75.2%	
SC Biological and Environmental Research	B+	3.3	1.3%	
SC Fusion Energy Sciences	A-	3.5	1.5%	
SC High Energy Physics	A-	3.5	21.8%	
SC Workforce Development for Teachers and Scientists	B+	3.2	0.1%	
Performance Goal 3.0 Total				3.6

Table 3.2. Overall Performance Goal 3.0 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 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 Department has assigned an overall grade of A- for the Performance Goal. Comments are contained within the individual Objectives that follow.

Headquarters (HQ)

Score: 3.6 Grade: A-

Goal Evaluation:

- The Lab Director failed in significant measure by inappropriately committing to a Stanford led initiative without fully understanding its complexities, risks, and potential negative impact on national security issues.
- The Laboratory Director has not appointed an Associate Laboratory Director (ALD) for Science. The lack of an ALD for Science has resulted in the appearance of the Lab Director being distracted from high level management issues, including a lack of vision related to occupancy of the Photon Science Laboratory Building, which could have been more appropriately addressed by an ALD.
- The Laboratory Director has developed and executed a compelling scientific vision and has worked to ensure the LCLS-II intra-Laboratory partnership is delivering on their commitments.
- The Laboratory has established a platform of operational excellence throughout the SLAC organization and is fully supporting the science mission.
- The support and sponsorship of Stanford University, specifically Stanford President John Hennessey, Stanford Provost John Etchemendy, and Stanford Vice President for SLAC William Madia, is truly best-in-class and sets the standard in the Department of Energy.
- Stanford's work developing and implementing the new Revolutionary Working Group (RWG) model contract was exemplary, working cooperatively with the Department at all levels.

Objective 4.1: Leadership and Stewardship of the Laboratory

Weight: 34.00%

Score: 3.0 Grade: B

Objective Evaluation:

- The Laboratory Director has not appointed an Associate Laboratory Director (ALD) for Science. The lack of an ALD for Science has resulted in the appearance of the Lab Director being distracted from high level management issues, including:
 - Lack of vision related to occupancy of the Photon Science Laboratory Building, which could have been more appropriately addressed by an ALD;
 - The Lab Director inappropriately committed to a Stanford led initiative without fully understanding its complexities and potential negative impact on national security issues.

Objective 4.2: Management and Operation of the Laboratory

Weight: 33.00%

Score: 3.8 Grade: A

Objective Evaluation:

- The Laboratory has established a platform of operational excellence throughout the SLAC organization and is fully supporting the science mission of the Laboratory with a strong culture of accountability.

Objective 4.3: Contractor Value-added

Weight: 33.00%

Score: 4.0 Grade: A

Objective Evaluation:

- The support and sponsorship of Stanford University, specifically Stanford President John Hennessey, Stanford Provost John Etchemendy, and Stanford Vice President for SLAC William Madia, is truly best-in-class and sets the standard in the Department of Energy.
- Stanford’s work developing and implementing the new Revolutionary Working Group (RWG) model contract was exemplary, working cooperatively with the Department at all levels.

Notable Outcome(s):

Headquarters:

(Objective 4.2)

Notable 1:

Develop and implement a risk-based campus infrastructure strategy that fully supports the ongoing and future mission requirements including a plan to mitigate the funding risk of the k-sub that incorporates a successful cost, scope, and schedule for FY 2016.

Outcome: SLAC created a new Infrastructure Planning Group which has developed a risk-based program to prioritize infrastructure projects. Priority is given to mission essential and safety related systems. This program is closely linked to the SLAC Strategic Plan and the Annual Lab Plan. Additionally, SLAC was able to secure full FY 2016 funding for the K-Subs project and a contract has been awarded for the work. - **Achieved**

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	B	3.0	34.0%	
4.2: Management and Operation of the Laboratory	A	3.8	33.0%	
4.3: Contractor Value-added	A	4.0	33.0%	
			Total	3.6

Table 4.1. Goal 4.0 SC Program Office Performance Goal 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 4.2 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's overall success in deploying, implementing, and improving integrated ES&H systems that efficiently and effectively support the mission(s) of the Laboratory.

The Department has assigned an overall grade of A- for the Performance Goal. Comments are contained within the individual Objectives that follow.

Site Office (Site Office)

Score: 3.7 Grade: A-

Goal Evaluation:

- Overall, SLAC is providing a safe workplace for its employees and demonstrates a high level of environmental stewardship.
- SLAC construction project-related safety is best-in-class and SLAC has reduced TRC and DART rates significantly over the past year.
- SLAC demonstrated significant improvement in hazardous waste/material management practices at waste generating locations. In addition, SLAC EH&S staff have taken leading roles in developing and improving DOE ES&H standards and regulations over the last year.
- SLAC closed out the USB and Security Enhancements projects and completed a significant portion of the LCLS-II Linac equipment removal without a DART case. This completed a five year span without a construction related lost-days case.

Objective 5.1: Provide an Efficient Worker Health and Safety Program

Weight: 60.00%

Score: 3.8 Grade: A

Objective Evaluation:

- SLAC achieved a milestone of 5 years without a construction project-related DART (735,288 construction labor hours). This significant achievement is also applicable to section 7.2 Project Management.
- SLAC reduced TRC and DART rates by 48% and 40%, respectively, from FY 2015 to FY 2016.
- Injury rates for both office and industrial ergonomic injuries decreased significantly, indicating that the ergonomic injury reduction efforts have been successful.
- The SLAC played a significant role in the revision of the DOE-NTC Laser Worker Safety Course.
- SLAC reduced its inventory of radioactive sealed sources, including 40 sources located inside obsolete BSOIC radiation detectors, through the radioactive waste management program.
- SLAC completed the upgrade for the Cs-137 well in the Radiation Calibration Facility. This significantly reduces the risks of using one of the most active sources on the SLAC site.

Objective 5.2: Provide Efficient and Effective Environmental Management System

Weight: 40.00%

Score: 3.5 Grade: A-

Objective Evaluation:

- SLAC demonstrated significant improvement in hazardous waste/material management practices at the waste generating locations and received a favorable CUPA inspection outcome in November 2015. The centralized hazardous waste management program functions at SLAC continue to be managed effectively.
- SLAC was the primary author of the DOE Technical Standard DOE-STD-6004 (2016), "Clearance and Release of Personal Property from Accelerator Facilities". The technical standard was published by DOE and provides the basis for clearance and release programs at SLAC and at other sites across the DOE complex.
- SLAC recycled 200 tons of metals from the Klystron Gallery in support of the Sector 0-10 equipment removal and disposition project in preparation for LCLS-II construction.
- SLAC initiated site-wide legacy clean-up activities including:
 - Stanford benefactor funded rubblelization and reuse of crushed concrete shield blocks
 - Metals recycling
 - Off-site disposal of tanks, hazardous material, and radioactive waste
- SLAC expanded the Zero Waste Program to a total of 14 buildings and two trailers, representing approximately 75% of the Laboratory staff. These solid waste reduction initiatives at SLAC contribute significantly to meeting the DOE municipal waste diversion goal of 50%.
- SLAC completed major revision to SLAC's Storm Water Pollution Prevention Plan under the newly-issued state-wide Industrial General Permit.
- SLAC accelerated contaminated soil removal, resulting in approximately 900 cubic yards of primarily PCB-impacted soil sent to off-site disposal.

Notable Outcome(s):

Site Office:

(Objective 5.1)

Notable 1:

Evaluate/update the current Cryo/Pressure safety program(s) to adequately address the current SLAC and future LCLS-II mission needs.

Outcome: SLAC evaluated/updated the current Cryo/Pressure safety program(s) to adequately address the current SLAC and future LCLS-II mission needs. - **Achieved**

(Objective 5.2)

Notable 1:

Demonstrate effectiveness of line management implementation of hazardous waste management requirements at the waste generating locations around the site.

Outcome: SLAC demonstrated effectiveness of line management implementation of hazardous waste management requirements at the waste generating locations around the site. - **Achieved**

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 Worker Health and Safety Program	A	3.8	60.0%	
5.2: Provide Efficient and Effective Environmental Management System	A-	3.5	40.0%	
			Total	3.7

Table 5.1. Goal 5.0 SC Program Office Performance Goal 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 5.2 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's overall success in deploying, implementing, and improving integrated business systems that efficiently and effectively support the mission(s) of the Laboratory.

The Department has assigned an overall grade of B+ for the Performance Goal. Comments are contained within the individual Objectives that follow.

Site Office (Site Office)

Score: 3.4 Grade: B+

Goal Evaluation:

- The SLAC business systems and the related resources operated without any major failure or process incident in FY 2016. The functional areas evaluated within this goal; Finance, Accounting, Procurement, Information Technology and Human Resources, are staffed with experienced leadership and the staff position are filled with well qualified individuals. The robust computer based systems have automated most of the record keeping and allows the staff to work on value added projects such as the subcontract terms and conditions for Firm Fixed Priced construction, and the Stanford University lead site clean-up project.
- SLAC exceeded expectations developing, promoting, and implementing the RWG contractor model, a first of its kind for the Department.
- SLAC leadership did not adequately implement DOE requirements on a joint initiative in that SLAC did not (1) follow DOE's policy on engagement with foreign partners, (2) did not adequately coordinate efforts with the Office of Science, and (3) published materials that at the very least might imply preferential access to SLAC based on membership contributions.

Objective 6.1: Provide an Efficient, Effective, and Responsive Financial Management System

Weight: 20.00%

Score: 3.2 Grade: B+

Objective Evaluation:

- SLAC utilizes the new ERP system to significantly improved data availability, automation of internal controls, and focus on analysis of results and trends. The ERP system, as implemented, continues to meet requirements without any rework to the system.
- SLAC supported the Revolutionary Working Group Model Contract initiative which included interactions with DOE HQs CFO.

Objective 6.2: Provide an Efficient, Effective, and Responsive Acquisition Management System and Property Management System

Weight: 20.00%

Score: 3.8 Grade: A

Objective Evaluation:

- SLAC improved communication with vendors by completing the implementation of the Procurement Strategic Sourcing Module on schedule, on budget and within scope.
- A project team made up of SLAC supply chain management and SLAC construction division representatives, SLAC legal counsel, and a SLAC Site Office contracting officer worked together to revise the SLAC subcontract terms and conditions for Firm Fixed Price Construction. The revised terms and conditions clarify intent, eliminate ambiguity and align with the prime M&O contract.
- SLAC supply chain management completed two major subcontracts (>\$25M), 1) the Cryo-plant Building construction subcontract for the LCLS-II Project, and 2) the Photon Science Laboratory Building fit-out construction subcontract. Both subcontracts were completed in a timely and satisfactory manner.
- SLAC property management worked aggressively to excess property in conjunction with a Stanford University site clean-up initiative.

Objective 6.3: Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program**Weight:** 20.00%**Score:** 3.6 **Grade:** A-**Objective Evaluation:**

- SLAC designed and implemented a new performance guidance practice for cascading goals to align employee efforts to lab priorities, and providing growth and performance improvement oriented feedback, including a new web based performance tool. The results of SLAC's efforts have not only led to an improved internal practice, but SLAC has also been asked to provide multiple best practice sharing presentations to other national labs (including a request to present to all national lab HR directors). These conversation requests for SLAC's performance guidance have included Argonne, Sandia, Livermore, Oak Ridge, LANL, and Fermi.
- The National Association of American Women in Science, upon hearing of SLAC's unique diversity and inclusion approach, asked SLAC's HR Director to write an article for their quarterly journal. The attention garnered from that publication has led to outside industry taking an interest in SLAC's work, and requests for speaking engagements from the Clayman Institute, CalPers, Apple, Blue Shield, and the other National Laboratories.
- SLAC's practice of bias mitigating search and selection processes have provided notable results during the first nine months of FY 2016. In FY 2015, 15% of all science hires were female; in the first nine months of FY 2016, SLAC raised its yearly hiring total of women scientist to 21%. Additionally, in FY 2015 women constituted 17% of all senior hiring opportunities (senior manager, deputy, or faculty), in FY 2016, 47% of all opportunities went to women (eight positions).

Objective 6.4: Provide Efficient, Effective, and Responsive Contractor Assurance Systems, Including Internal Audit and Quality**Weight:** 20.00%**Score:** 3.8 **Grade:** A

Objective Evaluation:

- SLAC's robust CAS was key in the development of the RWG model contract, as discussed in Goal 4. The CAS system is highly functional with a significant multi-level set of management tools and systems to drive accountability through the organization.
- SLAC completed a comprehensive site-wide internal independent assessment of Integrated Safety and Work Management at SLAC. The site-wide assessment, the first comprehensive internal independent assessment of its kind performed at SLAC, was conducted in response to senior management concerns about the adequacy of work management, including implementation of work planning and control that could adversely impact mission and operational objectives.

Objective 6.5: Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets**Weight:** 20.00%**Score:** 2.7 **Grade:** B-**Objective Evaluation:**

- SLAC is utilizing the Stanford Office of Technology Licensing to successfully developed and licensed technology commercialization growth, and is targeted toward increasing the rate of technology transfer outside of the Laboratory and developing additional licensable intellectual property with industry partners.
- SLAC leadership did not adequately implement DOE requirements on a joint initiative in that SLAC did not (1) follow DOE's policy on engagement with foreign partners, (2) did not adequately coordinate efforts with the Office of Science, and (3) published materials that at the very least might imply preferential access to SLAC based on membership contributions.

Notable Outcome(s):**Site Office:****(Objective 6.1)****Notable 1:**

Assure effective implementation of the ERP systems, internal controls and regulatory compliance to advance the efficiency and effectiveness of SLAC business systems.

Outcome:

SLAC assured effective implementation of the ERP systems, internal controls and regulatory compliance to advance the efficiency and effectiveness of SLAC business systems. - **Achieved**

(Objective 6.2)**Notable 1:**

Complete the implementation of the SLAC Procurement Strategic Sourcing Module for bidding and external collaboration.

Outcome:

SLAC completed the implementation of the SLAC Procurement Strategic Sourcing Module for bidding and external collaboration. - **Achieved**

(Objective 6.5)

Notable 1:

In support of DOE's requirement to submit all peer-reviewed accepted manuscripts to DOE through the OSTI E-Link system, we are asking each Laboratory to: (1) analyze the current status of submissions with respect to comprehensiveness, accuracy, and appropriate acknowledgement of DOE support; (2) identify any barriers to compliance; and (3) submit, with the next annual lab plan, a proposal and timeline for achieving full compliance.

Outcome: - Achieved

SLAC's proposed timeline includes a redesign of the SciDoc system during FY 2017, which is expected to decrease manual administrative effort, increase end-user satisfaction among the researcher community, and improve overall system reliability.

SLAC plans to expand its educational and outreach efforts during FY 2017, which will create a Lab-wide STI policy.

The proposed target milestones are acceptable, and although the plan states that SLAC expects to reach full compliance (defined as 85% or better) by the end of FY 2017, a more realistic goal would be 30% in FY 2017, with full compliance achievable by FY 2018 - FY 2019.

SLAC plans to continue socialization activities and its plans to improve internal systems are appropriate.

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	B+	3.2	20.0%	
6.2: Provide an Efficient, Effective, and Responsive Acquisition Management System and Property Management System	A	3.8	20.0%	
6.3: Provide an Efficient, Effective, and Responsive Human Resources Management System and Diversity Program	A-	3.6	20.0%	
6.4: Provide Efficient, Effective, and Responsive Contractor Assurance Systems, including Internal Audit and Quality	A	3.8	20.0%	
6.5: Demonstrate Effective Transfer of Technology and Commercialization of Intellectual Assets	B-	2.7	20.0%	
			Total	3.4

Table 6.1. Goal 6.0 SC Program Office Performance Goal 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 6.2 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's and tomorrow's mission(s) and complex challenges.

The Department has assigned an overall grade of A- for the Performance Goal. Comments are contained within the individual Objectives that follow.

Site Office (Site Office)

Score: 3.6 Grade: A-

Goal Evaluation:

- SLAC has significantly improved its ability to ensure robust mission critical facilities and equipment are in place to further the DOE mission. SLAC's recent endeavors in predictive maintenance have identified issues before the mission was affected, saving taxpayer money and improving worker safety.
- SLAC has demonstrated sustained excellence in project management over the last seven years and is being recognized as best-in-class for project delivery in DOE. Additionally, SLAC is implementing a Project Management School to foster this recognized project management excellence across the DOE complex.

Objective 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

Weight: 50.00%

Score: 3.3 Grade: B+

Objective Evaluation:

- SLAC improved the maintenance and operations of mission essential critical functions by initiating the Predictive Maintenance Program to identify facilities related risk based critical systems, for the planning, funding and execution of infrastructure projects.
- SLAC has been proactive in identifying significant electrical maintenance issues, effecting both mission and safety, and is actively planning and executing the corrective actions when opportunities arise from machine and system downs.
- SLAC was awarded 2016 Silicon Valley Water Conservation Award for a Government Agency for reducing potable irrigation water usage by 80% and indoor water usage by 23%.
- SLAC has removed six office space type trailers, in various states of disrepair, and relocated occupants to more suitable buildings. Additionally, space utilization for fifteen buildings allowed sixteen additional trailers to be archived for future disposition.

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

Weight: 50.00%

Score: 3.8 Grade: A

Objective Evaluation:

- SLAC has demonstrated sustained excellence in project management over the last seven years and has delivered or is working on delivering over \$2.5-billion in project work that has been delivered on-time, on-budget, meeting all KPPs, and safely. SLAC completed sixty consecutive months without a lost work day accident on its construction project work.
- In general, the sector 0-10 Equipment Project, in support of LCLS-II, has been well planned and executed safely. However, there were two ORPS events recently on the project (cut 480V line and fractured ankle). The events have been handled well by the subcontractor and corrective actions are being put in place.
- SLAC completed the SUSB project in October 2015, two months ahead of the baseline schedule, allowing building occupancy earlier than planned. Satisfactory project performance allowed for several scope enhancements improving certain elements of the building systems, accessibility to adjacent facilities and walk ways, and additional cooling water capacity and efficiency for future loads.
- The LSST Camera critical procurements are on track with the exception of sensor deliveries due to poor yields experienced by both vendors. However, SLAC has proactively implemented a comprehensive and effective risk mitigation plan which has diverted impact to project schedule.
- FACET II secured the CD-1 approval in September 2015 initiating the design early in FY 2016; retiring several major design risks. In addition, FACET II concluded an outstanding CD-2/3A DOE IPR in FY 2016, securing unanimous recommendation from for CD-2/3A approval.
- SLAC received SHPO concurrence on Section 106 submittals or removal/demolition of thirty three trailers and quad landscaping. SLAC continues to work with SHPO on the Section 110 Programmatic Agreement to expedite further 106 consultations.
- SLAC Project Management Awards
 - ♦ RSB - DOE Achievement Award
 - ♦ SUSB
 - ♦ Design Build Institute of America Merit Award
 - ♦ Associated General Contractors Excellence in Partnering Award Finalist for projects over \$50 Million
 - ♦ International Partnering Institute (IPI) John L. Martin Partnered Project of the Year
 - ♦ Diamond Award Silicon Valley Business Journal Structures Award Honoree

Notable Outcome(s):**Site Office:**

(Objective 7.1)

Notable 1:

Improve the maintenance and operation of mission essential critical systems.

Outcome: SLAC improved the maintenance and operation of mission essential critical systems.
- **Achieved**

(Objective 7.2)

Notable 1:

Complete scope, cost, and scheduling for the deactivation/decontamination and demolition for the Sectors 0-10 to ensure LCLS II mission needs are met.

Outcome: Completed scope, cost, and scheduling for the deactivation/decontamination and demolition for the Sectors 0-10 to ensure LCLS II mission needs are met. - **Achieved**

(Objective 7.2)

Notable 2: Work to reach agreement with the California State Historic Preservation Office regarding completing the Section 110 process at SLAC.

Outcome: Reached agreement with the California State Historic Preservation Office regarding completing the Section 110 process at SLAC. - **Achieved**

(Objective 7.2)

Notable 3: Successfully deliver crosscut GPP projects on schedule.

Outcome: SLAC successfully delivered crosscut GPP projects on schedule. - **Achieved**

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	B+	3.3	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	3.8	50.0%	
			Total	3.6

Table 7.1. Goal 7.0 SC Program Office Performance Goal 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 7.2 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 Department has assigned an overall grade of B+ for the Performance Goal. Comments are contained within the individual Objectives that follow.

Site Office (Site Office)

Score: 3.3 **Grade:** B+

Goal Evaluation:

- Overall, SLAC has been successful in safeguarding and securing Lab assets to support the mission.
- SLAC continues to be a leader in pioneering new and innovative cybersecurity solutions. SLAC lead the Office of Science in the development of the Multi Factor Authentication (MFA) exemption process for non-privileged users.

Objective 8.1: Provide an Efficient and Effective Emergency Management System

Weight: 33.00%

Score: 3.2 **Grade:** B+

Objective Evaluation:

- SLAC was a major contributor to the rewrite of DOE O 151.1 Comprehensive Emergency Management System.
- SLAC, in conjunction with Stanford University Department of Public Safety, trained SLAC employees and users for Active Threat situations. This included town hall meetings and an Active Threat exercise; testing the notification systems, access protocols, and a tabletop exercise with the Emergency Operations Center (EOC) and local law enforcement.

Objective 8.2: Provide an Efficient and Effective Cyber Security System for the Protection of Classified and Unclassified Information

Weight: 33.00%

Score: 3.5 **Grade:** A-

Objective Evaluation:

- SLAC successfully closed out the last of the FY 2013 FISMA findings and received no new findings from the FY 2016 KPMG cyber security audit.
- SLAC continues to be a leader in pioneering new and innovative cybersecurity solutions (e.g. DUO).
- SLAC lead the Office of Science in the development of the Multi Factor Authentication (MFA) exemption process for scientific and other standard users.
- SLAC is working towards implementation of Level 4 MFA.

Objective 8.3: Provide an Efficient and Effective Physical Security Program for the Protection of Special Nuclear Materials, Classified Matter, Classified Information, Sensitive Information, and Property

Weight: 34.00%

Score: 3.1 Grade: B+

Objective Evaluation:

- SLAC developed a number of improvements for implementation of the DOE O 143.2 Unclassified Foreign Visits and Assignment. This also included negotiating a new graded approach for tracking sensitive country nationals using SLAC's PeopleSoft database rather than having to reenter all information into DOE's FACTS database.
- Overall, the SLAC Physical Security program has been performing well, but there have been a few unauthorized access incidents that the Laboratory has addressed.

Notable Outcome(s):

Site Office:

(Objective 8.3)

Notable 1:

Complete physical security upgrades are in accordance with the cost, scope, and schedule.

Outcome: SLAC completed physical security upgrades in accordance with the cost, scope, and schedule. - **Achieved**

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+	3.2	33.0%	
8.2: Provide an Efficient and Effective Cyber Security System for the Protection of Classified and Unclassified Information	A-	3.5	33.0%	
8.3: Provide an Efficient and Effective Physical Security Program for the Protection of Special Nuclear Materials, Classified Matter, Classified Information, Sensitive Information, and Property	B+	3.1	34.0%	
			Total	3.3

Table 8.1. Goal 8.0 SC Program Office Performance Goal 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 8.2 Goal 8.0 Final Letter Grade