

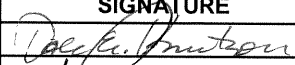




### LCLS Directorate - Work Scope Authorization

<b>WBS No:</b>	3.1.1	<b>WBS Title:</b>	Engineering & Physics Management - Division Management				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$617	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Dave Schultz		

**Scope Definition:** This WBS covers the management staffing costs for the LCLS Engineering & Physics Division. It includes the Engineering & Physics Division Director, the Engineering & Physics Division Deputy Director and the Planning and Installation group. The Planning and Installation group provides project management, work planning, and scheduling support to the LCLS directorate.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** LCLS Engineering and Physics

APPROVALS:			
	NAME	SIGNATURE	DATE
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichenadter		2-2-09
WBS Manager	Dave Schultz		1-31-09
Account Manager	Dave Schultz		1-31-09
LCLS Business Manager	Cindy Lowe		2-2-09

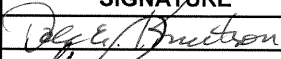




**LCLS Directorate - Work Scope Authorization**

<b>WBS No:</b>	3.1.2	<b>WBS Title:</b>	Engineering & Physics Management - Division Administrative Support				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$236	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>	Dave Schultz			

**Scope Definition:** This WBS covers the administrative support staffing costs for the LCLS Engineering & Physics Division. It includes administrative assistance and IT support. This includes workstation and software support for engineering and physics analyses.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** LCLS Engineering and Physics

<b>APPROVALS:</b>			
	<b>NAME</b>	<b>SIGNATURE</b>	<b>DATE</b>
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichenadter		2-2-09
WBS Manager	Dave Schultz		1-31-09
Account Manager	Dave Schultz		1-31-09
LCLS Business Manager	Cindy Lowe		2-2-09

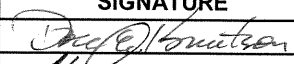


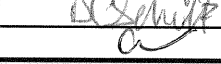

**LCLS Directorate - Work Scope Authorization**

<b>WBS No:</b>	3.1.3	<b>WBS Title:</b>	Engineering & Physics Management - Division Safety Office Support				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$11	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>	Dave Schultz			

**Scope Definition:** This WBS covers the safety office support staffing costs for the LCLS Engineering & Physics Division. This includes safety training, monitoring and compliance reporting.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** Not Applicable - No SLAC Labor Charges

<b>APPROVALS:</b>			
	<b>NAME</b>	<b>SIGNATURE</b>	<b>DATE</b>
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichenadter		2-2-09
WBS Manager	Dave Schultz		1-31-09
Account Manager	Dave Schultz		1-31-09
LCLS Business Manager	Cindy Lowe		2-2-09

### LCLS Directorate - Work Scope Authorization

<b>WBS No:</b>	3.2.1	<b>WBS Title:</b>	Engineering & Physics Operations - Physics Support				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$1,366	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Joe Frisch		

**Scope Definition:**

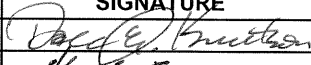

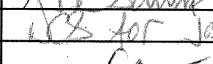


This WBS covers the physics support staffing costs associated with the administration and professional development of the LCLS Physics Department of the LCLS Engineering & Physics Division. It also includes the development of instrumentation and diagnostics, including fabrication of prototype hardware, for Accelerator Operations, Experimental Operations, and Strategic Projects Divisions of the LCLS Directorate. It also includes physics analyses in the development of FEL systems. For FY09 the fabrication of the X-band Transverse Cavity is a specific deliverable.

**Profile of Fund Sources:**

Linac Operations

**Profile of Performing Orgs:**

PPA Accelerator Research, LCLS Accelerator Systems Division, LCLS Engineering and Physics, ETS Klystron, ETS Mechanical Design, ETS Mechanical Fabrication

APPROVALS:			
	NAME	SIGNATURE	DATE
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichanadter		2-2-09
WBS Manager	Dave Schultz		1-31-09
Account Manager	Joe Frisch		2-2-09
LCLS Business Manager	Cindy Lowe		2-2-09

### LCLS Directorate - Work Scope Authorization

<b>WBS No:</b>	3.2.2	<b>WBS Title:</b>	Mechanical Eng and Design				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$1,278	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Scott Debarger		

**Scope Definition:**






This WBS covers the staffing costs associated with the administration and professional development of the LCLS Mechanical Engineering and Design Department. In-house training and seminars will be funded through this WBS, as will the acquisition of reference materials. This work includes the effort to deliver high-quality engineering services to client projects. For FY09, the Mechanical Engineering and Design milestones are: Provide qualified engineers to meet the needs of the Accelerator Operations, Experimental Operations, and Strategic Projects Divisions of the LCLS Directorate. Ensure completion of all required E,S,&H training of Department staff. Prepare a professional development plan for each staff member.

**Profile of Fund Sources:**

Linac Operations

**Profile of Performing Orgs:**

SSRL, PPA Engineering, LCLS Engineering and Physics, ETS Mechanical Design

APPROVALS:			
	NAME	SIGNATURE	DATE
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichanadter		2-2-09
WBS Manager	Dave Schultz		1-31-09
Account Manager	Scott Debarger		10 JAN 09
LCLS Business Manager	Cindy Lowe		2-2-09

**LCLS Directorate - Work Scope Authorization**

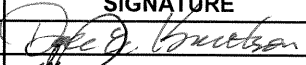

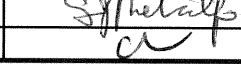


<b>WBS No:</b>	3.2.3	<b>WBS Title:</b>	Engineering & Physics Operations - Matrixed Eng and Design				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$0	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Stuart Metcalfe		

**Scope Definition:**

This WBS covers the staffing costs associated with the administration and professional development of the LCLS Mechanical Engineering and Design Department. In-house training and seminars will be funded through this WBS, as will the acquisition of reference materials. This work includes the effort to deliver high-quality engineering services to client projects. For FY09, the Mechanical Engineering and Design milestones are: Provide qualified engineers to meet the needs of the Accelerator Operations, Experimental Operations, and Strategic Projects Divisions of the LCLS Directorate. Ensure completion of all required E,S,&H training of Department staff. Prepare a professional development plan for each staff member.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** Not Applicable - No SLAC Labor Charges

<b>APPROVALS:</b>			
	<b>NAME</b>	<b>SIGNATURE</b>	<b>DATE</b>
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichenadter		2-2-09
WBS Manager	Dave Schultz		1-31-09
Account Manager	Stuart Metcalfe		1-30-09
LCLS Business Manager	Cindy Lowe		2-2-09

**LCLS Directorate - Work Scope Authorization**

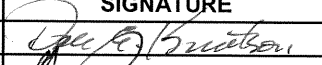
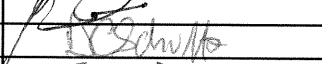



<b>WBS No:</b>	3.2.4	<b>WBS Title:</b>	Laser Systems				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$433	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Bill White		

**Scope Definition:** This WBS covers the staffing costs associated with the administration and professional development of the LCLS Laser Group of the LCLS Engineering & Physics Division. This work includes the effort to maintain and grow the group as needed to meet the operational goals of the LCLS.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** LCLS Engineering and Physics

**APPROVALS:**

	NAME	SIGNATURE	DATE
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichenadter		2-2-09
WBS Manager	Dave Schultz		1-30-09
Account Manager	Bill White		2/2/09
LCLS Business Manager	Cindy Lowe		2-2-09

**LCLS Directorate - Work Scope Authorization**

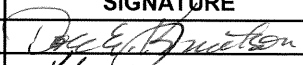

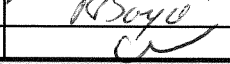


<b>WBS No:</b>	3.3.1	<b>WBS Title:</b>	Engineering & Physics Management - Engineering Standards				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$225	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Richard Boyce		

**Scope Definition:** Develop and maintain code conscious engineering processes and standards utilized for LCLS engineering activities in a manner that protects the health and safety of the laboratory employees, and users while protecting the environment and ensuring quality levels appropriate to the work. The LCLS Engineering Standards function reviews the immediate engineering needs of the LCLS directorate and establishes an engineering standards platform that serves the directorate now and in the future. Ensure processes are in place within the directorate that ensures timely identification, evaluation, and adjudication of "safety-in-design" issues. Important documentation involved in this process is the identification and organization of safety standards and requirements. Develop and implement the appropriate quality assurance procedures needed by LCLS to ensure the effective planning, operation and control of processes. M&S to cover QA materials, code compliance literature (OSHA, DOE, ISO), and applicable text books, and for job specific training & travel. A key milestone is centrally controlled documented procedures and standards.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** LCLS Engineering and Physics, ETS Mechanical Design

**APPROVALS:**

	NAME	SIGNATURE	DATE
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichanadter		2-2-09
WBS Manager	Dave Schultz		1-30-09
Account Manager	Richard Boyce		1/30/09
LCLS Business Manager	Cindy Lowe		2-2-09



### LCLS Directorate - Work Scope Authorization

<b>WBS No:</b>	3.3.2	<b>WBS Title:</b>	Engineering & Physics Management - Configuration Management				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$692	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Richard Boyce		

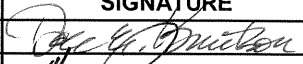




**Scope Definition:**

Develop and maintain a LCLS Directorate document control system to provide a systematic and deliberate process for the development, review, approval, communication, use, and revision of controlled documents (e.g., directives, procedures, specifications, and guidelines). Establish LCLS records management requirements to ensure the identification, generation, authentication, and maintenance of objective evidence of work activities is performed. M\$S for library books, documentation & software consultants, and specific job training.

Develop and implement appropriate procedures to ensure the LCLS configuration management system database serves as a library for identifying and formalizing the functional and physical characteristics of LCLS hardware configuration items (cabling, power supplies, magnets, etc.) at discrete points in the product evolution for the purpose of maintaining the integrity of the LCLS system. Key milestones include: Develop and implement LCLS Directorate Document Control/Records Management Standards; Develop appropriate procedure and processes to ensure the LCLS configuration management database serve as the single, configured, point-of reference for the LCLS technical team.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** LCLS Engineering and Physics, OPS Computing Services

APPROVALS:			
	NAME	SIGNATURE	DATE
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichenadter		2-2-09
WBS Manager	Dave Schultz		1-30-09
Account Manager	Richard Boyce		1/30/09
LCLS Business Manager	Cindy Lowe		2-2-09

**LCLS Directorate - Work Scope Authorization**

<b>WBS No:</b>	3.3.3	<b>WBS Title:</b>	Engineering & Physics Management - Systems Integration				
<b>Period of Performance:</b>	10/1/08 - 9/30/09	<b>Total Budget \$K:</b>	\$405	<b>Rev No:</b>	0	<b>Date Last Revised:</b>	1/23/09
<b>WBS Manager:</b>	Dave Schultz		<b>Account Manager:</b>		Richard Boyce		

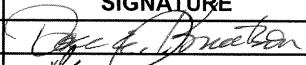
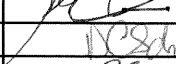



**Scope Definition:**

Develop an organized, systematic decision-making process that efficiently identifies, analyzes plans (for the handling of risks), tracks, controls, communicates, and documents risks to increase the likelihood of achieving program/project goals. Work in concert with LCLS integrated technical team (system engineers and physicists) to ensure the coordination of planning and executing life-cycle repair/services concepts and requirements necessary to ensure sustained operation of the system. Plan and implement the appropriate monitoring, measurement, and analysis needed to improve LCLS operational results. Key milestones include: Monthly system reliability metrics and key LCLS machine performance parameters; Monthly "top 10" technical system risks and summary of "six month look ahead" improvement plans.

**Profile of Fund Sources:** Linac Operations

**Profile of Performing Orgs:** LCLS Engineering and Physics

**APPROVALS:**

	NAME	SIGNATURE	DATE
LCLS Associate Laboratory Director	Dale Knutson		2-2-09
LCLS Deputy Associate Laboratory Director	Mark Reichenadter		2-2-09
WBS Manager	Dave Schultz		1-30-09
Account Manager	Richard Boyce		1/30/09
LCLS Business Manager	Cindy Lowe		2-2-09