

National Science Foundation
2017 Large Facilities Workshop
LIGO Livingston & Baton Rouge, LA
Monday, May 1 – Wednesday, May 3

Agenda

Monday, May 1	Renaissance Baton Rouge Hotel
7:00 – 8:00 AM	Registration, Light Refreshments
8:00 – 9:00 AM	Evolving NSF Oversight & Other Developments <i>Speaker:</i> Matt Hawkins, Head, Large Facilities Office (LFO), NSF <i>Description:</i> NSF will provide an overview of the past year’s activities and frame the break-out session discussions. Activities include implementing the American Innovation and Competitiveness Act and recommendations from the National Academy of Public Administration (NAPA) Panel Report on NSF Use of Cooperative Agreements to Support Large Scale Investment in Research.
9:00 – 10:30 AM	High Performance Teams on Science Projects: Successful Strategies and Lessons for Building an Engaged and Talented Team <i>Speaker:</i> Ed Hoffman, CEO, Knowledge Engagement LLC; former NASA Chief Knowledge Officer and Director, NASA Academy; Executive in Residence, Columbia University School of Professional Studies <i>Description:</i> The last decade has witnessed an unprecedented acceleration of change in technologies, organization approaches, and human perspective. These changes have reshaped the nature of the organization and placed a premium on accelerated learning and workforce engagement. Management of science projects has unique challenges and opportunities beyond the technical aspects. Ed Hoffman will share his NASA experiences and discuss in what manner performance happens at the team level.
10:30 – 11:00 AM	Break
11:00 – 12:00 PM	Antarctic Infrastructure Modernization for Science (AIMS) <i>Speaker:</i> Brandon Neahusan, Project Manager, AIMS, Leidos <i>Description:</i> An overview of the diverse NSF science missions and infrastructure improvements underway in the Antarctic, with a focus on the AIMS project which is progressing through NSF’s Major Research Equipment and Facility Construction (MREFC) process.
12:00 – 1:00 PM	Federal Budget Outlook (Working Lunch) <i>Speaker:</i> Beth Blue, Program Analyst, NSF-BD <i>Description:</i> The NSF Budget Division (BD) will provide an overview of the federal budget process and an update on the current budget outlook for FY 2017 and FY 2018.

1:00 – 2:00 PM

The Role of International Collaborations for Large Research Facilities

Speaker: Mangala Sharma, Program Director, NSF-OISE

Description: The NSF Office of International Science and Engineering (OISE) will facilitate an interactive discussion on the international dimensions of large research facilities, including identifying and managing partnerships. The goal is to share common challenges and good practices to build effective institutional partnerships throughout the lifetime of research facilities.

Business Systems Reviews (BSR) Hot Topics – Coordination of Administrative Business Reviews Across the NSF Large Facility Portfolio

Speakers: Roland Roberts, Program Director, National Ecological Observatory Network (NEON), Operations, NSF-BIO;

Florence Rabanal, Large Facilities Advisor, NSF-LFO

Description: NSF will discuss updates to the NSF process for identification and sequencing of administrative business reviews across the Large Facility Portfolio. It is primarily focused on NSF's strategy for identifying and managing risks associated with these large investments.

2:00 – 2:20 PM

Break

2:20 – 4:00 PM

MREFC Process from a Facility Perspective

Speakers: Demian Bailey, Regional Class Research Vessel (RCRV), Project Manager, Oregon State University (OSU);

Rita Pittmann, Planning & Controls Manager, Leidos

Description: Managers will describe their experience going through the MREFC review process for the RCRV and AIMS projects. The projects will share lessons learned, for the benefit of organizations that might go through the process in the future, and recommend process improvements to NSF.

Roundtable – Masters Forum – Creating a Successful Lessons Learned Approach: People, Process, Culture

Facilitators: Ed Hoffman, CEO, Knowledge Engagement LLC; former NASA Chief Knowledge Officer and Director, NASA Academy; Executive in Residence, Columbia University School of Professional Studies;

Rebecca Yasky, Large Facilities Advisor, NSF-LFO

Description: Knowledge capability is based on experience, learning and relevance. Successful organizations create strategies and methods that encourage practitioners to share their lessons in a variety of ways. We will provide space for participants to share their lessons with colleagues and provide input to NSF on the implementation of a lessons learned program for large facilities. This session will connect practitioners, reflection, sharing, and stories to enhance commitment to lessons learned.

4:00 – 4:20 PM

Break

4:20 – 5:00 PM

Cyberinfrastructure Investments & Opportunities

Speaker: Bill Miller, Science Advisor, NSF-CISE

Description: An overview of cyber infrastructure initiatives and developments that will be discussed in depth at the NSF Cyberinfrastructure for Facilities Workshop.

Evolution of EVM and the Future

Speaker: Wayne Abba, President of College of Performance Management

Description: Earned Value Management (EVM) is a project management technique for measuring performance in an objective manner and providing early warning indicators of cost and schedule overruns and underruns. Wayne Abba will share the history of EVM including a “Tale of Two Aircraft” and give a look into the future for performance management including recently enacted legislation.

6:00 – 8:00 PM

Reception (Optional), Renaissance Baton Rouge Hotel

Tuesday, May 2

LIGO Livingston Observatory

7:00 – 8:00 AM

Registration, Light Refreshments (Renaissance Baton Rouge Hotel)

8:00 – 9:00 AM

Buses - Renaissance Baton Rouge Hotel to LIGO

9:00 – 9:15 AM

LIGO Welcome

Speaker: Albert Lazzarini, LIGO Deputy Director

9:15 – 11:40 AM

Observatory Tours

11:40 – 12:00 PM

Break

12:00 – 1:00 PM

Education & Public Outreach (Working Lunch)

Speaker: William Katzman, EPO Manager, LIGO Livingston Observatory (LLO)

Description: An overview of LIGO education and public outreach activities.

1:00 – 2:00 PM

LIGO Science & Technology

Speaker: Joe Giaime, Head, LIGO Livingston Observatory (LLO)

Description: An overview of LIGO scientific instrumentation and technological innovations.

Modern Methods of Schedule Risk Analysis

Speaker: David Hulett, Hulett & Associates, LLC

Description: Early methods of quantifying risk analysis using Monte Carlo simulation placed probability distributions directly on activity durations. Developments in the last 10 years have allowed us to model risks much more specifically and intelligently. New methods for analyzing the impact of risk on a project's schedule will be introduced, including (1) distinguish uncertainty and project-specific risks, (2) apply risks to multiple activities (or categories of activities), (3) apply risks in series and in parallel, (4) model how duration correlation occurs, and (5) prioritize risks for focused risk mitigation.

2:00 – 2:20 PM

Break

2:20 – 4:00 PM

Facility Operations & Maintenance Roundtable

Facilitators: Richard Oram, Operations Manager, LIGO Livingston Observatory (LLO); Nigel Sharp, Program Director, NSF-MPS

Description: For this interactive roundtable discussion, LLO will present some aspects of operation and maintenance of a gravity wave observatory then others can share challenges and best practices that are commonly faced by large facility operators.

Practical Guidance to Strengthen Facility Estimates

Facilitators: Jason Lee, Assistant Director, Applied Research and Methods, US Government Accountability Office (GAO)

Kevin Porter, Large Facilities Advisor, NSF-LFO

Erik Nylund, Crowe Horwath / Kforce Government Solutions (CH/KGS)

Description: NSF will briefly discuss new cost estimating and analysis requirements from the American Innovation and Competitiveness Act and how they are supported by

the Large Facilities Manual and GAO Cost Estimating and Assessment Guide. NSF and GAO will lead an interactive discussion emphasizing the applicability of the GAO Cost Guide and importance of Cost Estimating Plans and the Basis of Estimate for both Construction estimates and Operations and Maintenance estimates. GAO and CH/KGS will provide examples for discussion. Ample time will be provided for questions and answers.

4:00 – 5:00 PM

Buses – LIGO to Renaissance Baton Rouge Hotel

7:00 – 8:00 AM Light Refreshments

8:00 – 9:00 AM **Large Facility Innovations & Technology Transfers Discussion**

Speaker: Matt Hawkins, Head, NSF-LFO

Description: All NSF programs support NSF’s mission “to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense.” This type of support is a primary driver of the U.S. economy. NSF’s Research Infrastructure also plays a key role in driving the U.S. innovation ecosystem by creating new (or enhanced) technologies and processes in order to meet the scientific objectives and advance human knowledge. Innovation can happen at every life-cycle stage, but it happens most readily during design, construction and operations. NSF and its Recipients have always been (and should remain) focused primarily on the science outcomes that our Research Infrastructure supports. However, as facilities costs rise in an era of challenging budgets, it may be advantageous to better articulate these innovative aspects in the “Broader Impacts” of major facility proposals. To best achieve this, and more broadly support NSF’s mission, cataloging and quantifying these successes in a more formal and routine way may be beneficial. This session will focus on sharing examples of innovative activities driven by NSF-funded Research Infrastructure and discussing ways in which NSF can work with major facility Recipients to better describe the benefits on U.S. innovation and the economy.

Management Fee to Fee

Speaker: Jeff Lupis, Division Director, Division of Acquisitions and Cooperative Support (DACs), NSF

Description: An overview of the proposed new fee policy for large facilities.

9:00 – 9:20 AM Break

9:20 – 10:20 AM **Distributed Networks & Facilities Roundtable**

Facilitator: Rob Hengst, Large Facilities Advisor, NSF-LFO

Description: This session is a roundtable of NSF and Recipient personnel involved in distributed networks and facilities. Roundtable members will each briefly share their experiences on topics pertaining to distributed facilities such as centralized procurement, cyber infrastructure, site facilities maintenance, personnel/staffing, parts/storage, etc. This session is intended to be interactive with shared thoughts, experiences, questions, and answers throughout.

Performance Metrics –Strategy and Experience at the Department of Energy (DOE)

Speaker: Ben Brown, Senior Science and Technology Advisor, Office of the Deputy Director for Science Programs, DOE

Description: This is an interactive session to discuss examples of performance metrics for operating Facilities and a recently-implemented strategy at the DOE Office of Science for collection and synthesis of detailed statistical information across the 27 DOE user facilities. The practical challenges with this broad undertaking will be shared as well as the broad benefits envisioned for stakeholders. Attendees will be encouraged to share their experiences and explore ideas for strengthening current practices.

- 10:20 – 10:40 AM** **Break**
- 10:40 – 12:00 PM** **Idea Exchange Open Forum for Award Recipients**
Facilitator: Tim Cockerill, Director of Center Programs, Texas Advanced Computing Center, The University of Texas at Austin
Description: This session is intended for award recipients and offers an opportunity for the large facilities to share ideas amongst themselves. The goal of the session is to provide critical feedback to NSF in the form of reasonable, actionable, documented recommendations. Actionable recommendations will be provided to NSF during the open Workshop Debrief in the afternoon and addressed by NSF after the workshop.
- Incurred Cost Audits & Data Collection Tool**
Speaker: Eddie Whitehurst, Deputy Branch Chief, DACS-Cooperative Support Branch (CSB), NSF
Description: CSB will provide background and context on new requirements for incurred cost audits and the Large Facilities Data Collection Tool.
- 12:00 – 1:00 PM** **Cybersecurity & CTSC (Working Lunch)**
Speaker: James Marsteller, Information Security Officer, Pittsburgh Supercomputing Center
Description: This session will provide an overview of the Center of Trustworthy Scientific Cyberinfrastructure (CTSC), including CTSC mission, past work with large facilities, key resources and events of interest to large facilities.
- 1:00 – 2:00 PM** **Science Done by a Global Community**
Speaker: Gabriela Gonzalez, former Spokesperson, LIGO Scientific Collaboration
Description: This talk will focus on the main astrophysical results in gravitational wave astronomy generated by the work done by the LIGO Scientific Collaboration.
- 2:00 – 2:20 PM** **Break**
- 2:20 – 4:00 PM** **Uniform Guidance Procurement Standards**
Speakers: Eddie Whitehurst, Deputy Branch Chief, DACS-Cooperative Support Branch (CSB), NSF
Description: Overview of requirements from 2 CFR 200 Uniform Guidance 200.317-326 Procurement Standards which took effect December 26, 2016.
- NSF Earned Value Management System Verifications**
Speakers: Rebecca Yasky, Large Facilities Advisor, NSF-LFO
Description: NSF now utilizes an applied process for the compliance evaluation review (CER) and acceptance of a Recipient's earned value management (EVM) systems. A project-focused EVMS acceptance permits the use of other project and business review results and focuses the CER on the EVM specific processes.

Workshop Debrief - Open Forum & Actionable Recommendations from Idea Exchange

Facilitator: Kevin Porter, Large Facilities Advisor, NSF-LFO

Description: An open forum for workshop attendees to provide direct feedback to NSF-LFO and NSF-CSB and recommendations for future improvements and topics. Actionable recommendations developed during the Idea Exchange Open Forum for Award Recipients will be presented to NSF.

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	Continuous Learning Track	Business Practices Track
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8:00 - 9:00	Evolving NSF Oversight & Other Developments - Matt Hawkins, Head, NSF-LFO	
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10:30 - 11:00	Break	
11:00 - 12:00	Antarctic Infrastructure Modernization for Science (AIMS) - Brandon Neahusan, AIMS, Leidos	
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2:00 - 2:20	Break	
2:20 - 4:00	MREFC Process from a Facility Perspective - Demian Bailey, RCRV, OSU - Rita Pittmann, Leidos	Roundtable – Masters Forum – Creating a Successful Lessons Learned Approach: People, Process, Culture - Ed Hoffman - Rebecca Yasky, NSF-LFO
4:00 - 4:20	Break	
4:20 - 5:00	Cyberinfrastructure Investments & Opportunities - Bill Miller, NSF-CISE	Evolution of EVM and the Future - Wayne Abba, College of Performance Management
6:00 - 8:00	Reception Renaissance Baton Rouge Hotel	

Tuesday, May 2 - LIGO Livingston Observatory		
	Continuous Learning Track	Business Practices Track
7:00 - 8:00	Registration, Light Refreshments - Renaissance Baton Rouge Hotel	
8:00 - 9:00	Buses - Renaissance Baton Rouge Hotel to LIGO	
9:00 - 9:15	LIGO Welcome - Albert Lazzarini, LIGO Deputy Director	
9:15 - 11:40	Observatory Tours	
11:40 - 12:00	Break	
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1:00 - 2:00	LIGO Science & Technology - Joe Giaime, Head, LLO	Modern Methods of Schedule Risk Analysis - David Hulett, Hulett & Associates, LLC
2:00 - 2:20	Break	
2:20 - 4:00	Facility Operations & Maintenance Roundtable - Richard Oram, Operations Manager, LLO - Nigel Sharp, NSF-MPS	Practical Guidance to Strengthen Facility Estimates - Jason Lee, GAO - Kevin Porter, NSF-LFO - Erik Nylund, CH/KGS
4:00 - 5:00	Buses - LIGO to Renaissance Baton Rouge Hotel	

Wednesday, May 3 - Renaissance Baton Rouge Hotel			
	Continuous Learning Track		Business Practices Track
7:00 - 8:00	Light Refreshments		
8:00 - 9:00	Large Facility Innovations & Technology Transfers Discussion - Matt Hawkins, Head, NSF-LFO		Management Fee to Fee - Jeff Lupis, Head, NSF-DACS
9:00 - 9:20	Break		
9:20 - 10:20	Distributed Networks & Facilities Roundtable - Rob Hengst, NSF-LFO		Performance Metrics –Strategy and Experience at DOE - Ben Brown, DOE Office of Science
10:20 - 10:40	Break		
10:40 - 12:00	Idea Exchange Open Forum for Award Recipients - Tim Cockerill, TACC-UT		Incurred Cost Audits & Data Collection Tool - Eddie Whitehurst, NSF-DACS
12:00 - 1:00	Cybersecurity & CTSC (Working Lunch) - James Marsteller, PSC		
1:00 - 2:00	Science Done by a Global Community - Gabriela Gonzalez, former Spokesperson, LIGO Scientific Collaboration		
2:00 - 2:20	Break		
2:20 - 3:20	Uniform Guidance Procurement Standards - Eddie Whitehurst, NSF-DACS	Workshop Debrief - Open Forum & Actionable Recommendations from Idea Exchange - NSF-LFO & NSF-DACS	NSF Earned Value Management System Verifications - Rebecca Yasky, NSF-LFO
3:20 - 4:00			