

International Institute for Sustainable Laboratories

Workshop Program

Tools for Developing a New or Retrofit Sustainable Laboratory



With words and phrases such as “climate change,” “sustainability,” and “going green” at the forefront of everyone’s thinking, energy efficiency and sustainable design have become priorities for any new or retrofit facility project—especially with regard to laboratories and other high-performance facilities, which are often the most energy-intensive of all building types. The International Institute for Sustainable Laboratories (I²SL) Workshop program can provide the key principles and techniques to help you develop your own sustainable laboratory, saving money, natural resources, and the environment.

I²SL is the official cosponsor of the Labs21 Workshop program, along with the U.S. Environmental Protection Agency and U.S. Department of Energy (DOE). I²SL offers Labs21 Workshops and other courses that can help you achieve a more sustainable laboratory or high-performance facility.

Full-Day Workshops

- Data Centers Energy Efficiency Best Practices Workshop
 - The data centers workshop provides information on energy efficiency strategies to improve data center performance.
- *Labs21 Introductory Course: High-Performance, Low-Energy Design*
 - The Introductory Course presents the overarching principles of sustainable design for laboratories and high-performance facilities.

Half-Day Workshops

- *Labs21 Introductory Course: High-Performance, Low-Energy Design*
 - The Introductory Course presents the overarching principles of sustainable design for laboratories and high-performance facilities.
- *Labs21 Workshop: Environmental Performance Criteria (EPC)*
 - This workshop introduces the Labs21 EPC, established to supplement the LEED® Scorecard when benchmarking your laboratory or high-performance facility.
- *Labs21 Workshop: Optimizing Ventilation Rates*
 - This course scrutinizes the design challenges of crafting a “balanced” laboratory ventilation system that both handles the worst scenario safely and manages routine scenarios efficiently.
- *Labs21 Workshop: Low-Pressure-Drop Heating, Ventilation, and Air Conditioning (HVAC) Design*
 - This workshop teaches the various approaches to low-pressure HVAC system design that lower laboratory energy consumption
- *Labs21 Workshop: Occupants Matter: Sustainable Design Meets Researchers*
 - The Occupants Matter Workshop, developed by researchers in the University of California system, targets designers, engineers, O&M staff, and laboratory occupants to educate them on the

Contact I²SL: www.i2sl.org • labs21@i2sl.org • 703-841-5484

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collaborative practices that can ensure maximum efficiency of electrical and mechanical systems and the building as a whole.

- *Laboratory Commissioning Workshop*
 - The Commissioning Workshop provides a robust discussion of commissioning principles. The workshop is designed to assist facility owners, managers, designers, and operators in understanding the value of this function in new and existing laboratories.
- *An Introductory Workshop to Building Information Modeling (BIM)*
 - Explore the benefits of BIM, including saving time, reducing project cost, and receiving a high degree of quality while engaging the owner in the decision process.
- *Lighting Control Workshop: Effective, Efficient, and Sustainable Light Control Strategies for Laboratory and Healthcare Facilities*
 - Learn how sustainable lighting practices can improve your bottom line, increase occupant productivity and comfort, and
- create a more flexible space for a highly efficient work environment.
- *Energy-Efficient Laboratory Ventilation Design Practices and Technologies*
 - Learn about a progression of different yet complimentary airside technologies and design practices that can be used individually, but are best applied collectively, to significantly and safely reduce ventilation-related energy expenses.
- *Energy Sub-Metering and Benchmarking Workshop*
 - Participants will be given an overview of a new tool created to help owners and laboratory personnel understand the value of energy management.
- *Designing a Flexible Laboratory Equipment Environment Workshop*
 - This course provides a proven process for serving all laboratory stakeholders' needs in a way that can last the lifetime of the laboratory building and provide the knowledge needed to build a robust infrastructure (HVAC capacity, electrical, ducting, structural considerations, etc.) that can flex for future equipment demands.

COURSE INSTRUCTORS

The following individuals are currently registered course instructors with I²SL:

- David Allen, Allen Consulting, LLC
- Dan Amon, U.S. Environmental Protection Agency
- Geoffrey Bell, Lawrence Berkeley National Laboratory
- Nancy Carlisle, National Renewable Energy Laboratory
- J. Patrick Carpenter, Facility Performance Engineers
- James Coogan, Siemens Building Technologies
- Kelly Cunningham, University of California, Davis
- Allen Doyle, University of California, Davis
- Pamela Greenley, MIT
- Dale Hitchings, SAFELAB Corporation
- D. Randall Lacey, Cornell University
- Russell MacAdam, Lutron Electronics Co., Inc.
- Paul Mathew, Lawrence Berkeley National Laboratory
- Richard Norman, Strategyn, Inc.
- Joe Phillips, IBM
- Jim Plourde, Schneider Electric
- Peter Rumsey, Intergral Group
- Dale Sartor, Lawrence Berkeley National Laboratory
- Gordon Sharp, Aircuity, Inc.
- Thomas Smith, Exposure Control Technologies, Inc.
- William (Bill) Starr, Jr., University of California, Davis
- Otto Van Geet, National Renewable Energy Laboratory
- John Weale, Intergral Group

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Benefits of Participating in an I²SL Workshop

- Laboratory professionals will learn sustainable design practices that can be implemented in daily operations.
- Attendees will receive Continuing Education Credits (typically six credits for a full-day workshop and three credits for a half-day workshop) through the American Institute of Architects for registered architects. Professional engineers will qualify to receive professional development hours. Some courses also qualify for Green Building Certification Institute Continuing Education Hours toward the LEED Credential Maintenance Program, as approved by the U.S. Green Building Council.
- Workshops reinforce an organization's commitment to sustainability.
- If the techniques learned in the workshops are utilized in a design project, there can be direct cost and energy savings.

I²SL encourages owners and providers planning new or upgrading existing laboratories to host one or more of the available workshops. This will provide the opportunity for the entire design, engineering, and construction team, as well as users, manufacturers, and owners, to learn to use the basic tools and resources available through Labs21 to create and maintain a sustainable laboratory.

Sustainable Advisory Sessions

Following each workshop, instructors can be made available to hold a personal, half-day Sustainable Advisory Session, in which the entire team can discuss the project specifics with an expert in sustainable laboratory design. This invaluable technical assistance will move the project in the direction of becoming a sustainable laboratory.

Benefits of Holding a Sustainable Advisory Session:

- Attendees can apply sustainable design principles learned in the workshops to real-world scenarios faced by your organization.
- Host organizations receive technical expertise and fresh perspective from session attendees during these one-on-one events.
- Receive expert opinion and review of new projects in the initial planning stages, or existing projects.

Get Involved

Organizations should contact I²SL at <labs21@i2sl.org> or 703-841-5484 to discuss hosting or attending a workshop or how to become an instructor. To learn more about the workshops offered, please visit the I²SL website at <www.i2sl.org/training/index.html>.

Thank you for your commitment to creating sustainable laboratories!

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