



A Program in
**Occupational and
Environmental Health & Safety**

GUIDELINES FOR LABORATORY DESIGN:

Health and Safety Considerations



June 11–15, 2018 | Boston, MA



**HARVARD
T.H. CHAN**

SCHOOL OF PUBLIC HEALTH
Executive and Continuing
Professional Education

As a participant in this course, you will learn how laboratory design options impact the health and safety of lab users and the environment. With this knowledge, you can ensure your labs are safe and free of health hazards, while also promoting a healthier environment.

This program covers general laboratory design challenges and issues specific to chemistry, microelectronics cleanroom, engineering, animal, biosafety, clinical, and sustainable laboratories. Participants will also address issues with new laboratory construction, renovation, and decommissioning.

This course provides a unique opportunity for architects, engineers, laboratory users, lab managers, and EHS professionals to collaborate on laboratory design.

Learn more:
hsph.me/lab-design

Learning Objectives



Occupational health and safety professionals will be able to:

- Complete structures that are safe and free of health hazards by consulting with architects, contractors, owners, and users during design and construction
- Become familiar with computational fluid dynamics (CFD) and how it is used in laboratory design
- Identify design features that provide solutions for the unique health and safety hazards associated with laboratories used for different functions
- Identify the unique needs of specific types of laboratories such as biosafety, chemistry, microelectronics, animal facilities, and engineering
- Provide detailed specifications regarding laboratory support facilities for hazardous waste storage, packaging, and shipping
- Understand the perspectives and constraints of architects and engineers, and the need to communicate with them

The tours of the lab facilities were excellent and allowed us to see many different types of labs.”

— Timothy R. Beaulieu
Project Manager
IDEXX Laboratories, Inc.



Who Should Participate



This program is for any professional involved in designing, constructing, renovating, or managing laboratories, including:

- Architects and designers
- Construction managers
- Environment, health, and safety professionals
- Facilities managers
- Laboratory managers
- Laboratory planners
- Project managers
- Scientists, researchers, and other laboratory users

Ideal participants will come from organizations including:

- Architecture firms
- Engineering and construction companies
- Government agencies
- Pharmaceutical and biotechnology companies
- Other commercial and noncommercial research organizations

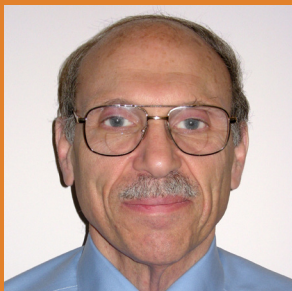
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Faculty Program Directors



Janet S. Baum, MArch, AIA is an Instructor at the Harvard T.H. Chan School of Public Health's Center for Executive and Continuing Professional Education. She was a Senior Lecturer at the College of Architecture, Washington University in St. Louis, and her expertise lies in incorporation of life safety and chemical safety for laboratory design. An architect, author, speaker, and educator on laboratory health and safety, Ms. Baum has focused over 40 years of experience in research and development facilities for medical, biotechnology, and pharmaceutical clients, as well as chemistry, materials sciences, and consumer products.



Louis J. DiBerardinis, MS, CIH, CSP is an Instructor in Industrial Hygiene at the Harvard Chan School, Director of Environment, Health and Safety at Massachusetts Institute of Technology, and an Adjunct Professor in the Department of Work Environment at the University of Massachusetts Lowell.

Mr. DiBerardinis has been a visiting lecturer at Harvard Chan School since 1986, where he teaches in several graduate courses and continuing education programs. Mr. DiBerardinis has been affiliated with M.I.T. since 1989 and with Harvard since 1970; in 1976, he established and directed the Industrial Hygiene Program within Harvard University Health Services.

Learning Objectives



Architects will be able to:

- Evaluate laboratory design options related to health and safety considerations in a cost-effective way
- Apply appropriate design information for laboratory types used in industry, academia, and hospitals
- Demonstrate familiarity with mechanical systems vital to state-of-the-art laboratory functions
- Understand the primary principles of safety, health, and environmental responsibilities and the impact of these considerations on planning and sustainable design of laboratory facilities
- Learn details of laboratory systems and planning strategies to reduce risks to occupants of laboratory facilities
- Learn to plan laboratories to provide the best location for chemical fume hoods to perform safely
- Decommission, decontaminate, and renovate old laboratories

Design and facility engineers will be able to:

- Apply laboratory design information regarding heat loads from research equipment, ventilation requirements, optimum air flows, and contamination control through air pressure regulation
- Identify recent developments in the design of HVAC systems for laboratories, including variable air volume (VAV) systems, high-performance hoods, air exchange rates, ductless hoods, recirculation of air, and the application of energy conservation measures
- Learn to use CFD analysis to improve performance of chemical fume hoods
- Incorporate into practice important information about the design of hazardous waste-handling facilities, safety shower and eyewash stations, and research support facilities

Learn more:
hsph.me/lab-design

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Program Check-in

Harvard T.H. Chan
School of Public Health
651 Huntington Avenue
Boston, MA 02115

Program Information

Please visit the course website for information regarding the program fee, accommodations, faculty, agenda, and our substitution and cancellation policy.

Continuing Education Credit

This program is accredited by Harvard T.H. Chan School of Public Health. Credit types and amounts will be determined once the agenda has been finalized and are subject to change.

Program Portfolio

For a full list of Executive and Continuing Professional Education courses, visit
hsph.me/portfolio

Contact Us

For more information, please contact us by phone at **(617) 432-2100** or by e-mail at **contedu@hsph.harvard.edu**

About Harvard T.H. Chan School of Public Health Executive and Continuing Professional Education

We prepare individuals and organizations to solve the most pressing global public health and health care challenges. Leaders in government, corporate, and nonprofit sectors around the world attend programs which provide strategies for addressing the critical issues facing their organizations with proven tactics that drive change.



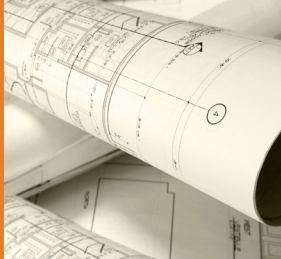
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This program provides you with the requisite knowledge to thoroughly and proactively design laboratories for health and safety. You will also learn practical and cost-effective solutions for renovation and reconstruction issues, including green design and construction, decontamination of an

existing facility, and safety design features.

Participants will join faculty and other attendees for guided laboratory tours of chemistry, clean room, clinical, biosafety, and animal research laboratories at leading academic and medical institutions.

hsph.me/lab-design