

2015

Tradeline Conferences

Collaborative. Transparent. Transformative.

27th Annual Conference

College and University Science Facilities 2015

Strategic Plans • Capital Projects • New Metrics • Collaboration • Modernization

PLUS! Pre-Conference Course October 18th!

- Fundamentals of Planning and Design of Modern Labs and Lab MEP Systems

PLUS! Facility Site Tours October 18th and 21st!

- Framingham State University, Science Complex Addition and Renovation
- Suffolk University, 20 Somerset Academic Building
- University of Massachusetts Boston, Integrated Science Complex
- University of Massachusetts Boston, General Academic Building Number 1 (GAB No.1)

October 19-20, 2015

The Westin Copley Place
Boston, MA



TRADELINE



Who Should Attend?

This is the annual meeting for:

- Academic science and research program leaders
- Capital project teams
- Academic program planners
- Facility and space planners
- Facility engineering managers
- Project managers
- Faculty
- Deans
- Financial officers

to benchmark plans and programs, and build on the latest successes and innovations.

“Thank you for the opportunity to participate in Tradeline. It was by all measures the best organized, managed and content rich conference I have ever attended.”

Gregory A. Howell, P.E.
Co-founder and Managing Director,
Lean Construction Institute

Attend this conference (27th annual!) to benchmark your facility plans for modernizing, expanding, and raising the competitiveness of your STEM teaching and academic research programs with minimum outlays of capital.

Here you'll meet with and hear expert testimony from facility planning teams at peer institutions who are having success with new cost- and capital-saving facility initiatives to:

1. Raise the visibility of STEM programs
2. Recruit new students and faculty
3. Incorporate new teaching pedagogies
4. Integrate intra- and inter-discipline research programs with new facility models
5. Increase flexibility to accommodate changes in programs
6. Make collaboration, connectivity, and interaction happen
7. Raise the efficiency of resource use – space, capital, budgets, and technologies

Make this a planning event for your key stakeholders (capital project people, facility planners, facility engineers, STEM program chairs, deans, faculty members, financial officers, and operations managers) to get everyone on the same planning page with respect to the details, numbers, and results on:

- Financially sound renovations, upgrades, and modernizations
- Proven facility features for collaboration and connectivity
- More efficient and effective core lab facilities
- Innovative teaching lab/classroom configurations for new pedagogies
- New building systems and equipment that reduce energy and operations cost
- Features for increased student-faculty interaction and undergraduate research
- Highly adaptable and flexible space for changing programs
- Multi-use/multi-purpose classroom/lecture/lab configurations
- New high-utilization space plans
- Shared-use strategies for equipment, space, and financial resources
- Flexible lab furniture and casework
- High impact features for student and faculty recruitment

We very much look forward to your participation in October!



Steven L. Westfall, Ph.D.
Founder and CEO
Tradeline, Inc.



Derek Westfall
President
Tradeline, Inc.

Conference Participants

Conference Speakers

- A H A Consulting Engineers
- Affiliated Engineers, Inc.
- Aircurty, Inc.
- Ballinger
- BOORA Architects Inc.
- BR+A Consulting Engineers, Inc.
- Centre College
- Chernoff Thompson Architects
- College of Lake County
- Columbia University
- CPP, Inc.
- CRB Consulting Engineers, Inc.
- Davidson College
- Ellenzweig
- EYP Architecture & Engineering
- Framingham State College
- George Mason University
- George Washington University
- Goody Clancy & Associates, Inc.
- Hastings+Chivetta Architects, Inc.
- Henderson Engineers, Inc.
- Legat Architects, Inc.
- Loftus Engineering
- Lord Aeck Sargent Architects
- MEP Associates, LLC
- Michigan State University
- Payette
- Phoenix Controls
- Research Facilities Design
- Rutgers University
- Sasaki Associates Inc.
- Shepley Bulfinch
- Stanford University
- Stantec
- The College of New Jersey
- The S/L/A/M Collaborative
- The Whiting-Turner Contracting Company
- Treanor Science & Technology
- University of Calgary
- University of Massachusetts, Boston
- University of Pennsylvania
- University of Technology, Sydney
- University of Tennessee, Knoxville
- University of Texas at San Antonio
- Vacuubrand, Inc.
- Vanderbilt University
- Vermeulens
- Whittier College
- Wilson Architects, Inc.

Exhibitors

- Air Master Systems
- Ambient Air Technologies, LLC
- Environmental Growth Chambers
- Erlab, Inc.
- Field Management Services, Inc.
- Flores Valles
- ICI (Institutional Casework, Inc.)
- Industrial Laborum
- Kewaunee Scientific Corp
- MEP Associates, LLC
- Miele Professional
- Mott Manufacturing, Ltd.
- New England Lab
- Phoenix Controls
- RWDI Consulting Engineers
- Siemens Industry, Inc.
- STARLINE
- Thermo Fisher Scientific
- Trespa North America
- Vacuubrand, Inc.
- Vitatech Electromagnetics, LLC
- Waldner, Inc.
- Working Buildings, LLC

Special Event Hosts

- CPP, Inc.
- Strobic Air, a CECO Environmental Company



Agenda at a Glance

Special Events and Features:

Hosted Pre-Conference Reception

Sunday; October 18, 7:30 p.m. Irish Coffees and dessert. Attendees may sign in and pick up their conference materials at this time. Guests welcome.

Hosted Reception

Monday; October 19, 4:45 p.m. – 6:00 p.m. Guests welcome.

Food and Beverage

Registered attendees will be provided with lunch and refreshment breaks on both meeting days.

A continental breakfast will be served on the first meeting day and a full breakfast will be served on the second meeting day.

Please Note The Following

Dress for this conference is business casual. It is our goal to maintain the temperature of the meeting rooms at an acceptable level for all attendees. However, for your maximum comfort we suggest that you plan to dress in layers.

Audio or video recording devices are not permitted at this conference.



Register Now!

www.TradelineInc.com/Academic2015

Register with payment by

Sept. 18 and Save \$200

Sunday; October 18

Registration Sign-in/Continental Breakfast for Fundamentals Course 7:30 a.m. – 8:00 a.m.

*** Fundamentals of Planning and Design of Modern Labs and MEP Systems** 8:00 a.m. – 4:30 p.m.

*** Facility Site Tours (must be pre-registered to attend)** 1:00 p.m. – 5:00 p.m.

Hosted Dessert Reception; Registration Sign-In 7:30 p.m. – 9:00 p.m.

Monday; October 19

Registration Sign-in/Continental Breakfast 8:00 a.m. – 8:30 a.m.

General Session 8:30 a.m. – 10:55 a.m.

Conference Overview

Speakers: George Mason University; Framingham State University; University of Massachusetts; Columbia University

Concurrent Forum Sessions 11:05 a.m. – 12:00 p.m.

- A.** STEM facilities for the new experiential, project team-based learning paradigms
- B.** Space allocations, programming strategies, and layouts that stretch STEM facility dollars
- C.** + Case study: Stanford University's Shriram Center for Bioengineering & Chemical Engineering
- D.** + Major operating savings hidden in overlooked lab utilities: Reduce costs and improve science
- E.** High performance buildings: Meeting operational expectations with constrained resources

Luncheon Hosted by CPP, Inc. 12:00 p.m.

Concurrent Forum Sessions 1:05 p.m. – 2:00 p.m.

- F.** Science and engineering "recipes:" Ingredients for inspiring interdisciplinary learning and discovery environments
- G.** Breathe new life into aging STEM buildings: Low cost transformation
- H.** + Best practices for high impact, "watershed" science facility initiatives and capital projects
- I.** Chemistry teaching labs: Facility planning requirements for the spectrum of disciplines
- J.** + Zero Net Energy teaching lab case study

Concurrent Forum Sessions 2:15 p.m. – 3:10 p.m.

- K.** Facility solutions for world-class engineering teaching and research outcomes
- L.** Planning 21st century STEM facilities: Latest trends, layouts and metrics
- M.** Engineering facility concepts for the new teaching, research, and recruitment missions
- N.** + Construction cost forecast and timing decisions for capital projects
- O.** + Ventilation deflation: Strategies to reduce HVAC energy consumption in laboratory buildings

General Session 3:25 p.m. – 4:45 p.m.

Speakers: University of Pennsylvania School of Arts and Sciences; Whittier College; University of Technology Sydney

Reception Hosted by Strobic Air Corp. (Guests Welcome) 4:45 p.m. – 6:00 p.m.

* Additional cost to attend + Presented at this time only.

Tuesday; October 20

Hosted Breakfast 7:15 a.m. – 8:00 a.m.

Concurrent Sessions 8:05 a.m. – 9:00 a.m.

- B.** Space allocations, programming strategies, and layouts that stretch STEM facility dollars
- L.** Planning 21st century STEM facilities: Latest trends, layouts and metrics
- P.** + Case study: Bioscience 2 at the University of Colorado Anschutz Medical School Campus
- Q.** + Flexibility in modern, integrated science facilities: Cost, programs, building systems
- R.** + Slash total campus building energy use by up to 20% with an Airside Energy Efficiency program

General Session 9:20 a.m. – 10:15 a.m.

Speakers: Michigan State University; University of Calgary

Concurrent Forum Sessions 10:40 a.m. – 11:35 a.m.

- F.** Science and engineering “recipes:” Ingredients for inspiring interdisciplinary learning and discovery environments
- I.** Chemistry teaching labs: Facility planning requirements for the spectrum of disciplines
- S.** + Renovate or build: What each strategy means for research activities and the learning experience
- T.** + Facility planning processes for innovative discovery environments and lower lifecycle costs
- U.** + Case study: Upgrading UPenn’s aging chemistry building to meet new energy performance goals

Concurrent Forum Sessions 11:50 a.m. – 12:45 p.m.

- E.** High performance buildings: Meeting operational expectations with constrained resources
- G.** Breathe new life into aging STEM buildings: Low cost transformation
- M.** Engineering facility concepts for the new teaching, research, and recruitment missions
- V.** + Undergraduate research, space strategies, and modern STEM curricula: New benchmarking metrics
- W.** + Energy saving strategies for new and existing laboratory exhaust systems

Hosted Luncheon 12:45 p.m.

Concurrent Forum Sessions 1:45 p.m. – 2:40 p.m.

- A.** STEM facilities for the new experiential, project team-based learning paradigms
- K.** Facility solutions for world-class engineering teaching and research outcomes
- X.** + A hub for interdisciplinary STEM programs: Davidson College’s New Academic Building
- Y.** + Decrease outside air and energy consumption with thermally decoupled lab ventilation loads

General Session 2:55 p.m. – 3:40 p.m.

Town Hall Knowledge Roundup



Adjourn 3:40 p.m.

Wednesday; October 21

*** Facility Site Tour (must be pre-registered to attend)** 8:30 a.m. – 1:15 p.m.



Tradeline is a Registered Provider with The American Institute of Architects Continuing Education Systems. Credit earned on completion of this event will be reported to CES Records for AIA members by Tradeline. Certificates of Completion for non-AIA members are available upon request.

There are a maximum of 16 Continuing Education Hours (CEHs) available at this conference. Sessions marked with the AIA CES logo have been registered with the AIA/ CES Record.  Sessions marked with  qualify for HSW credit



Courtesy of Ballinger; Hoachlander Davis Photography

“No doubt, Tradeline is the gold standard for conferences that focus on facilities issues, especially in the science and research arena. You’ve created a welcoming and engaging environment that encourages openness and willingness to share information – information that we have used extensively in our projects to build better buildings and save lots of money.”

Mark Wells

Assistant Dean for Facilities
University of Wisconsin, School of Medicine

* Additional cost to attend + Presented at this time only.

Tradeline Pre-Conference Course and Site Tours

Pre-Conference Course – Sunday; October 18

Fundamentals of Planning and Design of Modern Labs and Lab MEP Systems

7:30 a.m. Registration/Continental Breakfast; 8:00 a.m. – 4:30 p.m.
(six one hour modules)

Session Leaders:

Chernoff Thompson Architects

Russ Chernoff, MAIBC, MAAA, AIA, NSAA – Founding Partner
Naomi F. Gross, MAIBC, MAAA, NSAA – Partner

Treanor Science and Technology

Timothy Reynolds, PE – Principal

Henderson Engineers, Inc.

Kelley Cramm, PE, LEED® AP – Senior Associate

Space is limited and enrollment is subject to approval.



Six (6) AIA Continuing Education Hours (CEHs) are available for this course. 

Cost for course:

\$1090 Fundamentals Course only

\$950 with registration to the two-day conference October 19-20

(Fees include course materials, continental breakfast, refreshment breaks, and lunch.)

What you will learn: This course covers the basic elements of laboratory planning and design – upfront laboratory planning, laboratory programming, lab design, building design, and MEP (mechanical, electrical, plumbing) system components. Participants will come away with a basic understanding of the vocabulary, concepts, processes, standards, numbers, types of scientific equipment, and furniture (as applicable) involved in laboratory planning and design. The course also serves as primer for the two-day conference that follows and will be highly interactive with Q&A.

Who should attend: This one-day course is open to all who have interest in lab planning and design: project managers, facility planners and managers, lab managers, architects, engineers, construction engineers, researchers, and scientists employed at colleges and universities, hospital and healthcare facilities, pharmaceuticals, government labs, and A/E/C firms.

Site Tours – Sunday; October 18

Site Tour 1: Framingham State University Science Complex Addition and Renovation

Check-in at hotel tour desk at 12:45 pm; Departs hotel at 1:00 p.m.; Returns to hotel at 5:00 p.m. 

Site Tour 2: Suffolk University, 20 Somerset Academic Building

Check-in at hotel tour desk at 1:15 p.m.; Departs hotel at 1:30 p.m.; Returns to hotel at 5:00 p.m. 

Site Tours – Wednesday; October 21

Site Tour 3: University of Massachusetts Boston, Integrated Science Complex + General Academic Building Number 1

Check-in at hotel tour desk at 8:15 a.m.; Departs hotel at 8:30 a.m.; Continues on to Boston Logan International Airport for drop-off at terminals at 12:45 p.m.; Returns to hotel at 1:15 p.m. 

For more information on the above tours go to www.TradelineInc.com/Academic2015/tours

IMPORTANT TOUR NOTES:

- YOU MUST SIGN UP IN ADVANCE (SEE REGISTRATION FORM) AND HAVE WRITTEN CONFIRMATION FROM TRADELINE IN ORDER TO ATTEND THE TOUR.
- Site tour attendance is limited. Space on the site tours will be filled on a first-registered, first-served basis.
- No more than 5 people per organization will be confirmed on a tour.
- Failure to check-in at the tour desk in the lobby 15 mins. prior to departure time may result in your seat being forfeited to those on the stand-by list.
- All tour participants must arrive at the site on the tour bus with the tour group. For security reasons, no one may meet the group at the tour site.
- A \$25 bus transportation fee will be charged to your registration fee. This fee is non-refundable for cancellations made within two weeks of the tour date.

Attend all of the General Sessions below

Monday; October 19

Active learning space: The way forward with renovations and upgrades

George Mason University

Cathy Wolfe – Director of Campus Planning

George Mason University's multi-year academic and research facilities enhancement program is well under way, and the renovation and expansion projects completed to-date reflect the latest thinking on inspiring collaboration, integrating science and engineering disciplines, and designing active learning environments including prototyping future classroom configurations. Cathy Wolfe profiles what Mason has already put in place to grow enrollment including STEM programs, increase space flexibility and productive utilization, while increasing faculty/student engagement. She sets out rationales for project prioritization and sequencing, benchmarks for future project planning and examines results to-date that will influence subsequent projects proposed through 2020.

Renovation, addition, and space management: A strategy for STEM growth and workforce readiness

Framingham State University

Dale Hamel, PhD – Executive VP, Administration, Finance, and IT

Framingham State University's recently-completed science facility addition represents a strategic next step to capitalize on increasing enrollment in STEM disciplines to meet workforce readiness goals. Dale Hamel delivers rationales for decisions on new construction/renovation/additions, space allocation and governance, repurposing of existing laboratories and spaces, and how much new infrastructure to build. He examines the use of ducted vs ductless fume hoods, program requirements and limitations, code issues, and sustainability. He distills lessons learned from project conception through opening, and identifies critical phasing and communication best practices for success.

Facility strategies for interdisciplinary teaching and research program growth

University of Massachusetts, Boston

Susan Wolfson – Director, Campus Master Planning

Peter Langer – Associate Provost

Two new buildings reflect UMass Boston's commitment to increasing the sophistication of its research and science teaching enterprise: the recently-completed Integrated Science Complex, and the General Academic Building #1 currently under construction. Susan Wolfson and Peter Langer set out the new pedagogies, science productivity initiatives, and student/faculty recruitment goals that have spring boarded the construction efforts and shaped facility design, laboratory, and support space configuration decisions. They profile features for state-of-the-art research, teaching, and training in support of biology, chemistry, environmental, earth, and ocean sciences, physics, and psychology research programs.

Updated lab configurations for emerging science program priorities

Columbia University

Joe Mannino – Vice President of Capital Project Management and Planning

Science and engineering facilities built as recently as five years ago are already being updated to fit newly emerging interdisciplinary program drivers, and findings on how today's research gets done may surprise you. Joe Mannino illustrates how a phased build-out strategy has allowed Columbia University to test lab design concepts in phase one of the Northwest Corner Building, assess the results, and change direction to raise productivity, lower complexity, and reduce cost in phase two. He examines research trends driving "unflexible" and unique labs today, and he identifies new configurations already being "backported" to recently completed labs.



Courtesy of Payette; Photo by Warren Jagger

Attend all of the General Sessions below

Monday; October 19

UPenn energy retrofit extends life, reduces operating cost of aging chemistry labs

University of Pennsylvania School of Arts and Sciences

Matthew Lane – Vice Dean of Finance and Administration

Renewal of aging research facilities and deteriorating HVAC systems is the first step toward reducing energy costs and carbon footprint, and pays dividends in science flexibility, operating costs, and safety. Matthew Lane profiles UPenn's recently-completed energy retrofit of a 1970s-era chemistry building which has reduced HVAC related energy use by 67% while greatly improving building operations, flexibility, and occupant comfort. He examines project drivers, feasibility studies on cost, condition, and payback, and implementation strategies for occupied facilities. He also analyzes decisions on system controls and redundancy and what it all means for facility users, sustainability, and the bottom line.

Competitiveness: Renovation/transformation for 21st century STEM education

Whittier College

Erica Fradinger, PhD – Associate Professor of Biology

With science, technology, engineering, and mathematics (STEM) initiatives a national priority, recruiting faculty and students to work and learn in outdated facilities is a non-starter; it's time to commit to building science facility infrastructure for the 21st century. Erica Fradinger profiles Whittier College's solution: a comprehensive renovation of the school's 50 year-old monolithic core education facility to deliver a modern, transparent, inviting, and competitive Science and Learning Center. She sets out the current best wisdom on STEM learning environments, space and infrastructure requirements, core labs and lab support ratios, and other must-have building features.

Findings on the "Super Lab" model for state-of-the-art STEM education

University of Technology Sydney

Bill Booth, PhD – Laboratory Operations Manager

"Super Lab:" an expansive, open-plan STEM education workplace relying on cutting-edge information technology to deliver virtual interaction, collaboration and privacy to more than 200 students in concurrent, co-located chemistry, physics, biology, and/or physiology classes. Bill Booth profiles the recently opened "Super Lab" at University of Technology Sydney, which refines concepts piloted at London Metropolitan University. He sets out the pragmatic and pedagogical setting for design decisions, flexibility and cost advantages for next-generation STEM programs, and the infrastructure requirements to plan for. He answers concerns surrounding productivity and safety, and delivers findings from the lab's first undergraduate classes.

Tuesday; October 20

Competitive bioengineering facilities: Features to attract staff and funding

Michigan State University

Barbara Kranz – Director, Facilities Planning & Space Management

Here you'll get the details on key facility features to support a new wave of recruitment initiatives and stepped-up competition for funding in biomedical and engineering sciences. Barb Kranz profiles what Michigan State University is building to attract the best minds in nanotechnology, robotics, tissue engineering, and imaging, and what it takes to support those programs in terms of laboratory configurations, space, power and cooling requirements, clean and vibration free environments. She illustrates MSU's strategies to support long-term research flexibility, collaboration, and carbon footprint reduction in multi-disciplinary science programs.

A post-occupancy report on new features of multi-disciplinary science facilities

University of Calgary

Jon Greggs – Director, Campus Planning

Improved educational outcomes for STEM students, new capabilities in energy research, improved space utilization, and a new benchmark for building performance: these were the targets for University of Calgary's Energy Environment Experiential Learning building. Jon Greggs illustrates the outcome of these ambitious goals following the design and construction process, and how hosting two traditionally competing faculties in a single lab-intensive facility has actually played out. He delivers a post-occupancy re-evaluation of design decisions versus actual results achieved, and identifies the accolade-earning features and pitfalls to watch out for. He provides valuable data on energy performance and operating challenges.

Town Hall Knowledge Roundup

Facilitator: Tradeline, Inc.

Derek Westfall – President

This closing session is where key ideas, new developments, and findings that have been revealed over the course of the entire two-day conference (including sessions you may have missed) get clarified, expanded upon, and affirmed or debated. This is also the opportunity to get answers from industry leaders and the entire audience to specific questions on key and challenging issues.

Attend these special Forum Sessions

A. STEM facilities for the new experiential, project team-based learning paradigms

EYP Architecture & Engineering

Toni Loiacano, AIA, NCARB, LEED AP BD+C – Laboratory Planning Expert
Melissa Burns, AIA, NCARB, LEED AP BD+C – Architect, Academic Planning & Design

The College of New Jersey

Steven Schreiner – Dean, School of Engineering

Hands-on, project-team-based, loosely structured learning experiences are at the forefront of the STEM curriculum and program reformation – are your current learning environments up to the task? Here, session leaders scope out a wide range of diverse spatial needs and requirements for classrooms and team areas, prototyping and maker spaces, to faculty/student research labs that have the flexibility to cross traditional discipline boundaries. They identify key adjacencies, building locations, and support requirements, and reveal survey data, trend analysis, and on-site observations to document and assess the impact of design on learning and recruitment of students and faculty. **AIA HSW**

Monday 11:05 a.m. – 12:00 p.m. | Tuesday 1:45 p.m. – 2:40 p.m.

B. Space allocations, programming strategies, and layouts that stretch STEM facility dollars

Ellenzweig

Michael Lauber, FAIA – President
Shirine Boulos Anderson, AIA, LEED AP – Principal
Gregory Berndt, AIA – Associate Principal

This session sets out solutions for three big STEM facility planning hurdles: 1) Prioritizing the requirements from multiple disciplines to match available funding, 2) Allocating space to deliver maximum program value, and 3) Effectively engaging discrete disciplines and groups in integrated planning for a facility they will share. Session leaders illustrate how these hurdles were manifested in three current STEM facility projects, and the keys to overcoming them: specific planning process must-do's, strategies for supporting specific cross-disciplinary initiatives, and highly effective facility layouts that fulfill the mission of the STEM "promise." **AIA HSW**

Monday 11:05 a.m. – 12:00 p.m. | Tuesday 8:05 a.m. – 9:00 a.m.

C. Case study: Stanford University's Shriram Center for Bioengineering & Chemical Engineering

The Whiting-Turner Contracting Co.

Tom Wooden – Senior Project Manager

Stanford University

Stephen Pond – Project Manager

Boora Architects, Inc.

John O'Toole – Principal Architect

Today's "Bio-" and "Chem-" interdisciplinary initiatives greatly increase the complexity of facility planning and programming processes, and here you'll see how those factors shaped design decisions for the Shriram Center, Stanford University's new bioengineering and chemical engineering building. Session leaders set out the university's interdisciplinary aspirations, and illustrate the use of an adjacency matrix to optimize the location of labs and work groups. They detail what it takes to support chemical engineering research and bioengineering research groups in shared open labs, and analyze decisions on core facilities, sustainability solutions, and cost centers to help researchers stretch grant dollars. **AIA HSW**

Monday 11:05 a.m. – 12:00 p.m.

D. Major operating savings hidden in overlooked lab utilities: Reduce costs and improve science

VACUUBRAND, INC.

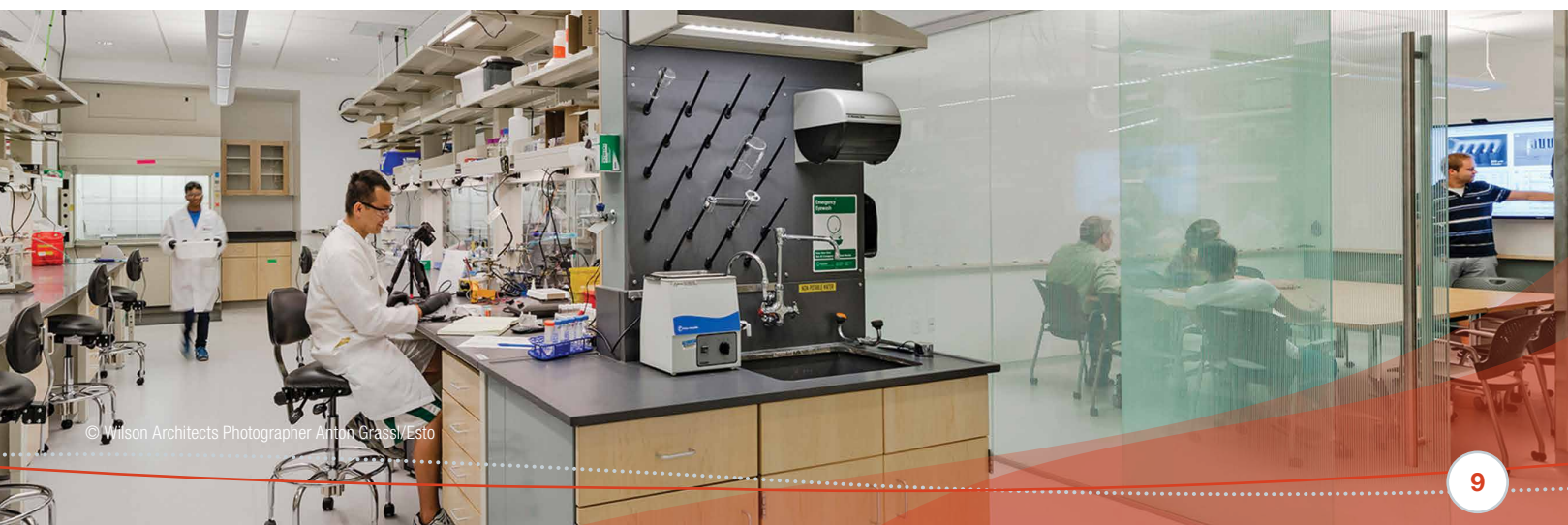
Peter G. Coffey – Vice President - Marketing

Loftus Engineering

Douglas A. Bradley, PE – Mechanical Department Manager, Project Manager

On the menu of cost-reduction opportunities, don't overlook decentralized vacuum systems as an efficient mechanism for upgrading facilities to modern standards, reducing operating and maintenance costs, and significantly reducing water use. Here, session leaders detail how Purdue University replaced the central vacuum system serving its Biochemistry Central Laboratory with modular lab vacuum networks to achieve major water savings (four to five million gallons of single-pass vacuum water per month for the building's 28 labs), raise energy efficiency, achieve long-term adaptability, improve vacuum quality for scientists, and lower total cost of ownership, avoiding costs of over \$360,000 per year. **AIA HSW**

Monday 11:05 a.m. – 12:00 p.m.



Forum Sessions – continued

E. High performance buildings: Meeting operational expectations with constrained resources

Affiliated Engineers, Inc.

Paul Erickson, LEED BD+C – Principal, Sustainability

Sanjyot Bhusari, PE, CEM, LEED BD+C – Intelligent Buildings Practice Leader

Complicated building systems and complex operational requirements: that's what results from ever-increasing science program requirements, new codes, standards, green building rating systems, and sustainability commitments. With all that complexity, will the building actually perform at the level you expect? Paul Erickson and Sanjyot Bhusari detail new building automation system enhancements and intelligent building technology that allows for correction of energy and operational anomalies and anticipates deficiencies and/or failures before they occur. Through two case studies they identify design process steps that ensure high performance requirements that result in high performance operations, and how to get the best value. **AIA** **HSW**

Monday 11:05 a.m. – 12:00 p.m. | Tuesday 11:50 a.m. – 12:45 p.m.

F. Science and engineering “recipes:” Ingredients for inspiring interdisciplinary learning and discovery environments

Ballinger

Craig S. Spangler, AIA – Principal

Robert Voss, AIA, LEED AP – Associate Principal

George Washington University / School of Engineering and Applied Sciences

Can Korman – Associate Dean of Research and Graduate Studies and Professor

Blending of science and engineering, teaching and research, and social interaction are critical components of the dialogue surrounding the formation of today's interdisciplinary facilities. The missions of these facilities trigger political, practical, design, code and cost challenges. Session leaders will focus on ingredients to overcome these challenges, including planning processes, programming techniques, and design strategies to ensure convergent environments. The successful use of these “recipes” to realize transformative interdisciplinary facilities will be illustrated through projects ranging from 80,000 sf to 750,000 sf. Session leaders will deliver planning metrics and benchmarks, design features, code accommodation solutions and costs for dynamic open environments. **AIA** **HSW**

Monday 1:05 p.m. – 2:00 p.m. | Tuesday 10:40 a.m. – 11:35 a.m.

G. Breathe new life into aging STEM buildings: Low cost transformation

Lord Aeck Sargent Architecture

John H. Starr, AIA, LEED AP BD+C – Principal/Director of Higher Education Design

Lauren Dunn Rockart, AIA, LEED AP – Principal

University of Tennessee, Knoxville

Andy Powers, AIA, LEED AP – Director of Design

In-place STEM revitalizations are the solution to underutilized, aging science and engineering buildings when the problems of funding limitations, insufficient “swing” space, or lack of senior-level administrative/political support for new construction threaten to stymie progress. Session leaders set out processes for reenergizing and transforming outdated facilities through renovations and upgrades, and they profile how five different institutions have pulled this off in the face of budget restraints, physical space restrictions, engineering systems limitations, and occupancy parameters. They deliver real-world cost metrics, and demonstrate ways to moderate costs through responsive programming, efficient planning, and creative re-use. **AIA** **HSW**

Monday 1:05 p.m. – 2:00 p.m. | Tuesday 11:50 a.m. – 12:45 p.m.

H. Best practices for high impact, “watershed” science facility initiatives and capital projects

Wilson Architects, Inc.

Bill Wilson, FAIA – Principal

Michael Maloof, AIA, LEED AP – Architect

Vanderbilt University

Philippe Fauchet – Dean, School of Engineering

How can an institution move into a more competitive realm using faculty hires, new programs, and capital projects? This session profiles “mission based” facility designs that employ a unified vision, design, and operational approach calculated to create a high impact, “watershed” project. Session leaders explore solutions for the special challenges these project present: the dynamics of cross-disciplinary facilities, the combining of new and existing faculty, and shared core facilities. They scope out campus-wide impacts, connections with urban character, and governance and operational issues that are fluid and adapt over time. **AIA** **HSW**

Monday 1:05 p.m. – 2:00 p.m.

I. Chemistry teaching labs: Facility planning requirements for the spectrum of disciplines

Payette

Robert J. Schaeffner, FAIA, LEED AP – Principal

Robert C. Pasersky, AIA – Associate Principal

Multiple discipline chemistry teaching pedagogies are driving a new set of laboratory design characteristics that must be factored into new construction and renovation projects. Session leaders examine what's changed with regard to open lab concepts, lab support, space allocation, transparency, safety, energy reduction goals, and fume hood selection, and they lay out a process for resolving the complex set of variables that describe competitive chemistry programs. They profile innovative chemistry lab design solutions in new construction and renovation projects at Princeton, UMass, Brandeis, Georgetown, Boston College, and Amherst College. **AIA** **HSW**

Monday 1:05 p.m. – 2:00 p.m. | Tuesday 10:40 a.m. – 11:35 a.m.

J. Zero Net Energy teaching lab case study

BR+A Consulting Engineers, Inc.

Jacob Knowles – Director of Sustainable Design

Sasaki Associates, Inc.

Jim Moses – Director

The 2030 Challenge for a carbon-neutral future in the building industry may seem unreachable for laboratory buildings with high plug-loads and strict ventilation requirements, but these obstacles can be turned into opportunities with the strategies revealed in this session. Session leaders deliver critical details of Bristol Community College's 50,000-sf Zero Net Energy (ZNE) chemistry, biology, and health sciences education building, and illustrate game-changing solutions for meeting aggressive energy reduction and sustainability goals. They scope out what cutting edge technology can do to raise energy performance, reduce operating costs, and free up budgets for science program growth. **AIA** **HSW**

Monday 1:05 p.m. – 2:00 p.m.

K. Facility solutions for world-class engineering teaching and research outcomes

Treanor Science + Technology

Tim Reynolds, PE – Principal Science and Technology Studio Leader

Jennifer Kulseth – Laboratory Planner

University of Texas at San Antonio

JoAnn Browning, PhD, PE – Dean, College of Engineering

Engineering programs must grow: recruit more students, increase graduation rates, and provide the teaching and research environments that modern engineering programs require. This session surveys solutions for an array of case situations and institutional drivers: planning methods, locations, highly specialized spaces, early student participation in engineering courses, and unique requirements for core facilities, research laboratories, classrooms, and instructional laboratories. Session leaders take a deep dive into the University of Kansas' Learned Hall Engineering Expansion project to illustrate a facility built for attracting and graduating more engineering students, with all the advanced features, layouts, and operations advancements necessary for world-class engineering. **AIA** **HSW**

Monday 2:15 p.m. – 3:10 p.m. | Tuesday 1:45 p.m. – 2:40 p.m.

L. Planning 21st century STEM facilities: Latest trends, layouts and metrics

Research Facilities Design

Richard M. Heinz, FAIA, NCARB, LEED AP – Vice President / Principal

Sean E. Towne, AIA, NCARB, LEED AP – Principal

The race is on to attract, retain, and support STEM students and faculty in interdisciplinary programs, and capable, attractive, modern facilities are a critical element for success. Session leaders examine what is in today's STEM facility toolbox to support a new generation of scientists with very different learning requirements, and they profile current benchmarks, emerging trends, and innovative solutions from public, private, and two-year institutions. They illustrate how visual connectivity, mingled students and faculty, blended active/collaborative environments for learning and discovery, and integrated emerging technologies are driving lab, office, and support space allocations and configurations. **AIA** **HSW**

Monday 2:15 p.m. – 3:10 p.m. | Tuesday 8:05 a.m. – 9:00 a.m.

M. Engineering facility concepts for the new teaching, research, and recruitment missions

The S/L/A/M Collaborative

Kevin Herrick, AIA – Principal

Neil Martin, AIA – Principal

Rutgers University

Thomas Farris – Dean, School of Engineering

Here you'll see what three Schools of Engineering – Johns Hopkins University, Rutgers University, and Old Dominion University – have built to support new teaching pedagogies and project-based learning environments, enhance student-faculty collaboration, and improve the capability of support facilities—key advantages for recruiting and graduating talented engineers, and responding to the local economy's need for engineering research. Session leaders illustrate how each institution's flexibility drivers, desirable adjacencies, highly specialized spaces, and preferences for laboratory and classroom configurations shaped the solutions, and they distill valuable lessons learned. **AIA** **HSW**

Monday 2:15 p.m. – 3:10 p.m. | Tuesday 11:50 a.m. – 12:45 p.m.

N. Construction cost forecast and timing decisions for capital projects

Vermeulens

James Vermeulen, PQS, LEED AP – Co-CEO

Blair Tennant, LEED AP – Project Manager

Mounting pressure on construction costs will impact all science facility projects on the drawing boards, both new construction and renovations. Attend this session to get better pricing and more accurate budget figures, and better understand construction cost drivers for different academic science programs. James Vermeulen and Blair Tennant deliver up-to-date construction cost forecasts based on government spending trends, commodity prices, and cost data from more than 100 projects. Using analyses of equities, GDP, and construction labor markets, they illustrate regional construction pricing targets for the next two years, and demonstrate bid and purchasing strategies that lock in costs and reduce risk. **AIA** **HSW**

Monday 2:15 p.m. – 3:10 p.m.

O. Ventilation deflation: Strategies to reduce HVAC energy consumption in laboratory buildings

Payette

Robert J. Schaeffner, FAIA, LEED AP – Principal

Andrea Love, AIA, LEED AP – Director of Building Science

Data point: Ventilation systems are responsible for 45% of the average research building's energy consumption, and "average" is not what anyone wants or can afford in today's financial climate. What are the latest strategies to reduce energy costs, environmental impact, and increase overall building performance? Session leaders profile recently completed science and research capital projects to illustrate current best wisdom on fume hoods selection, integration of facility design with climate control, and balancing air change rate, energy consumption, and building end user comfort. They identify lessons learned and pitfalls to avoid, and scope out the energy savings you can expect. **AIA** **HSW**

Monday 2:15 p.m. – 3:10 p.m.

Forum Sessions – continued

P. Case study: Bioscience 2 at the University of Colorado Anschutz Medical School Campus

CRB Consulting Engineers, Inc.

Alicia Pandimos Maurer, AIA, LEED BD&C – Project Architect, Lab Planner

Warning: Sustainability, high performance building systems, and technology are often the first to be “value-engineered” out of science and research facility plans – Don’t fall prey to this school of thought! Alicia Pandimos Maurer illustrates how the pillars of low cost and high quality can be maintained in laboratory planning processes with three key actions: early cost modeling, effective communication of the complexities of sustainability, and lifecycle costing for flexibility decisions. She demonstrates how these actions improve project delivery processes from pre-design through construction, and the results: “out of the box” solutions that deliver high value, sustainability, and low operating cost. **AIA** **HSW**

Tuesday 8:05 a.m. – 9:00 a.m.

Q. Flexibility in modern, integrated science facilities: Cost, programs, building systems

Goody Clancy & Associates, Inc.

*Roger N. Goldstein, FAIA, LEED – Principal, Science & Technology Practice Leader
Bernard J. Dooley, AIA, LEED BD+C – Senior Associate, Director of Lab Planning*

University of Massachusetts, Boston

Andrew J. Grosovsky – Dean, College of Science and Mathematics

For modern integrated science facilities, “future flexibility” boils down to three things: science program changes, building system capability, and cost. How those get prioritized, reconciled, and delivered in new science facilities is the real magic. The resulting shared characteristics of new science environments include openness, transparency, comfort, efficiency, safety, productivity, and collaboration. Session leaders profile three recent science building case studies and the options considered for integrated spaces, programs, and user experiences, the recruitment advantages, and user-specific tradeoffs that led to radically different facility designs. They deliver post-occupancy lessons-learned on lab features, services, casework, and more. **AIA** **HSW**

Tuesday 8:05 a.m. – 9:00 a.m.

R. Slash total campus building energy use by up to 20% with an Airside Energy Efficiency program

Aircuity, Inc.

Gordon P. Sharp – Chairman

This session sets out key components of a campus-wide Airside Energy Efficiency program to tackle the largest single driver of energy use: outside air and ventilation. Gordon Sharp reveals a new twist to demand control ventilation for labs and other campus buildings, and identifies pitfalls to avoid that can actually increase building energy use. He quantifies the relative importance of different technologies such as demand based control, chilled beams, and heat recovery in achieving energy use reductions of up to 20%, and meeting 2020 Climate Change Commitments and the DOE Better Buildings Challenge. **AIA** **HSW**

Tuesday 8:05 a.m. – 9:00 a.m.

S. Renovate or build: What each strategy means for research activities and the learning experience

Stantec

Michael Reagan – Vice President

Jim Radock – Principal

Jill Swensen – Principal

The decision to renovate, expand, or build new will directly affect the success of your STEM initiatives: don’t commit to a course of action before knowing what the program impacts will be. Session leaders illustrate how new teaching pedagogies and undergraduate research practices are changing the feasibility criteria for facility reuse, and what’s required in the way of floor-to-floor heights, locations, building systems, and costs. They profile recent renovation, expansion, and new STEM construction projects, the associated program advantages, nuances, and limitations, and the impact on space layouts and efficiency, integration of teaching and research labs, and collaboration space.

Tuesday 10:40 a.m. – 11:35 a.m.

T. Facility planning processes for innovative discovery environments and lower lifecycle costs

Legat Architects, Inc.

Burcin Moehring, FAIA, LEED AP BD+C – Director of Science + Technology

College of Lake County

David Agazzi – Vice President for Administrative Affairs

Affiliated Engineers, Inc.

Scott Foster, PE, LEED AP – Principal

Evolving science curriculum, aggressive sustainability targets, and limited construction, operating, and maintenance costs: How can a traditional design process deliver the science facility we need at the price we can afford? Answer: It can’t. Session leaders demonstrate the use of an integrated design approach to do what was previously thought impossible: construct a highly efficient, highly capable facility for College of Lake County’s biology, micro biology, anatomy and physiology, chemistry, and engineering departments through a combined renovation/expansion process – and meet the cost targets. They reveal innovative thinking on space configurations, fume hood quantity and function, operating hours, air change rates, and more. **AIA** **HSW**

Tuesday 10:40 a.m. – 11:35 a.m.

U. Case study: Upgrading UPenn's aging chemistry building to meet new energy performance goals

A H A Consulting Engineers

Robert G. Andrews Jr., PE, CEA, LEED AP BD+C – Partner / Sustainability Department Manager
Roger L. Fournier – Project Manager

Phoenix Controls

David S. Rausch – Sr. Manager of Channel Marketing

UPenn's recent upgrade and retrofit of a 1973 vintage chemistry building illustrates new strategies to address the rising operational costs impacting all science programs and facilities – but there are major hurdles to clear to get it right. Here, session leaders identify risks, limitations, and costs for upgrading HVAC and building systems to meet aggressive new energy reduction goals, and they detail lab occupancy, space, infrastructure, and funding solutions. They step through planning strategy implementations and scope out the outcomes: improved energy efficiency, safety, and comfort, and nearly \$2 million dollars in annual energy savings. **AIA** **HSW**

Tuesday 10:40 a.m. – 11:35 a.m.

V. Undergraduate research, space strategies, and modern STEM curricula: New benchmarking metrics

Hastings+Chivetta Architects, Inc.

Christopher Chivetta, PE, LEED AP BD+C – President and Managing Principal
Rebecca Sigman, AIA, LEED AP BD+C – Architect

Centre College

Stephanie Fabritius – Vice President for Academic Affairs

Undergraduate research is an increasingly important piece in competitive STEM recruitment initiatives, a trend that also entails greater demand for laboratory space and equipment. How to factor those additional program demands into new or existing science facility plans is the subject of this session. Leaders chart the evolution of undergraduate research programs, analyze user activities, and distill space utilization benchmarks based on recently completed facilities. They identify key planning metrics for optimal space utilization with collaborative team activities and independent research missions, and zero in on best practices for adjacencies, shared spaces, and equipment suites. **AIA** **HSW**

Tuesday 11:50 a.m. – 12:45 p.m.

W. Energy saving strategies for new and existing laboratory exhaust systems

CPP, Inc.

Brad C. Cochran, PE – Senior Associate

This session surveys the latest energy use reduction strategies being implemented in university laboratory facilities around the world from the perspective of exhaust system optimization – and the savings that can be achieved. Brad Cochran compares alternative methods for minimizing, or even eliminating, the need for by-pass air through the use of variable air volume (VAV) technologies applied to exhaust systems. He scopes out implementation processes, the advantages over the traditional constant volume (CV) systems of the past, and the waste eliminated by matching the volume to the actual building load requirements. **AIA** **HSW**

Tuesday 11:50 a.m. – 12:45 p.m.

X. A hub for interdisciplinary STEM programs: Davidson College's New Academic Building

Shepley Bulfinch

William Riley, AIA, LEED AP – Associate

Davidson College

David Houlthouser – Director of Facilities and Engineering

Davidson College has upped their game in the competition for STEM enrollment and program advancement, and this case study serves as a benchmark for institutions embarking on similar initiatives. William Riley and David Houlthouser profile solutions for modern science programs to ignite enrollment, reenergize the campus environment, support multiple interdisciplinary science teaching and research programs, and enhance student-faculty interaction. They enumerate key features for transparency, flexibility, and collaboration, and illustrate the use of moveable partitions to quickly reconfigure space for active learning, specific pedagogies, and support requirements. **AIA** **HSW**

Tuesday 1:45 p.m. – 2:40 p.m.

Y. Decrease outside air and energy consumption with thermally decoupled lab ventilation loads

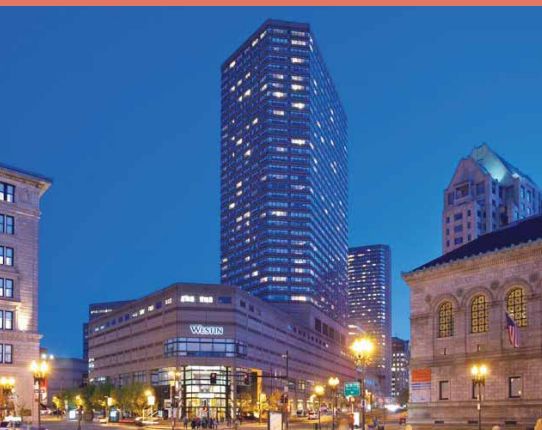
MEP Associates, LLC

Lee C. Tapper, PE, CIAQP, LEED AP – Senior Mechanical Engineer

Reduce cooling and heating loads for laboratory buildings, and cut energy use to the tune of 40-70% better than ASHRAE 90.1: Thermal decoupling ventilation loads from lab space loads is the key, and this session sets out how to do it. Lee Tapper profiles thermal decoupling solutions for University of Minnesota's Microbiology Research Facility, and evaluates pros and cons for alternative approaches. He illustrates innovative combinations of fan coils, chilled beams, slab cooling, and heat pump chillers, and he identifies future opportunities to super-charge heat recovery systems and enhance other campus utilities systems. **AIA** **HSW**

Tuesday 1:45 p.m. – 2:40 p.m.

Registration and Accommodations



The conference will be held at:

The Westin Copley Place

10 Huntington Ave.
Boston, MA 02116

How to Register:



Online

www.TradelineInc.com/Academic2015



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925.254.1093
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Conference Registration Fees

Registration fees with payment by 9/18/2015

\$1740 for single registration

\$1590 each for groups of 2 or more

Registration fees after 9/18/2015

\$1940 for single registration

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Registration fee includes:

All general sessions, selection of forums, a dessert reception, two lunches, one breakfast, a wine and hors d'oeuvres reception, refreshments, and a conference workbook guide. Presentations will be made available for download to attendees.

Team Discounts!

For groups of 5 or more, please call Tradeline for additional discounts available.

Pre-Conference Training

Fundamentals of Planning and Design of Modern Labs and Lab MEP Systems

\$1090 Stand-alone course

\$950 with full conference participation

Facility Site Tours

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Tradeline has reserved a block of sleeping rooms for this event at The Westin Copley Place. For registrations received by Sept. 25, 2015 Tradeline will handle and confirm room reservations [based on availability] according to your instructions on the registration form.

After September 25 please call Tradeline for room availability.

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Room Rate

The discounted room rate for this event is \$309/night, single or double occupancy.

A limited number of government per diem rates are available to U.S. federal government employees.

This is a non-smoking hotel.

Room Payment

Tradeline does not accept payment for room reservations. Hotel charges are paid to the hotel directly upon checkout.

Travel Information

Airport-to-Hotel Transportation

The Westin Copley Place is 3 miles from Boston's Logan International Airport. Taxis are readily available curbside outside of baggage claim at \$35 per person. Airport Shuttle service is available to/from Logan International at \$17 per person. Reservations are required (888) 437-4379.

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All cancellations and changes to registrations must be received by Tradeline, Inc. in writing.

You may make substitutions at any time; please notify us as soon as possible.

Full refunds will be given for cancellations received in writing 14 days or more prior to the event. A \$250 service fee will be charged for cancellations received between 14 and 6 days prior. No refunds will be given for cancellations received within 5 days of the event.

Registration Form

College & University Science Facilities 2015 ~ The Westin Copley Place ~ October 19-20, 2015 ~ Boston, MA

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- Please confirm airline reservations only after confirmation of registration.
- Only one registrant per form.

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2. Register with payment before September 18 and save \$200!

	Payment by 9/18/2015	Full price
Single Registration	<input type="checkbox"/> \$1,740	<input type="checkbox"/> \$1,940
Team Registration Discount*	<input type="checkbox"/> \$1,590/Attendee	<input type="checkbox"/> \$1,790/Attendee

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Sunday; October 18

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- \$25 **Site Tour 1: Framingham State University, Science Complex Addition and Renovation**
- \$25 **Site Tour 2: Suffolk University, 20 Somerset Academic Building**

Wednesday; October 21

\$25 **Site Tour 3: University of Massachusetts Boston**

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Yes, please reserve a room for me. Arrival Date: _____ Departure Date: _____

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