College and University Science and Engineering Facilities 2019

Capital Projects
Modernization
Learning Spaces
Lab Plans
Maker Culture
Entrepreneurship

April 8-9, 2019
The Vinoy Renaissance Resort in St. Petersburg, FL
Who Should Attend?

This is the annual meeting for

- Capital Project Teams
- Facility Space Planners
- Facility Engineers
- Project Managers
- Campus Architects
- Faculty
- Deans
- Financial Officers

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

Attend this conference to benchmark your plans for renovations, expansions, and new construction of higher education science, engineering, and technology facilities.

Here you’ll get details on facility components that support active learning, improve recruitment of students and faculty, make more efficient use of resources (space, budgets, and core technology), increase scalability and flexibility, integrate science and engineering disciplines, boost collaboration and interaction, and reduce capital and operating costs – specifically:

- Renovation, reuse, and repurposing of outdated facilities
- Decisions on renovation vs. building new
- Mixed engineering and science program space
- Active learning studios and flipped classrooms
- Maker space: Design, prototyping, and display space
- New classroom configurations, capacity analysis, flexibility features, and furniture
- Effective social and informal learning space
- Startup and innovation space for student entrepreneurship
- Increased support space and less assigned space
- Facility features for recruitment and retention
- Shared core scientific equipment and research lab space
- High-growth robotics, A.I., computational, and data science space
- Student-faculty interaction and undergraduate research space
- Highly specialized science and engineering labs
- Open offices and workspace for researchers, faculty, and students
- Building systems, technology, and equipment for reduced energy use and sustainability
- New sustainable and flexible lab equipment and technology
- Capital project planning and management:Prefab construction, IPD, performance contracting, etc.

Make this a key planning event to get your project stakeholders (capital project people, facility planners, facility engineers, consulting architects and engineers, science and engineering program chairs, deans, and faculty members, financial officers, and operations managers) on the same planning page with respect to the details, numbers, processes, and expectations. Consulting architects and engineers must register with their clients.

We look forward to seeing you in St. Petersburg in April.

“I was only able to attend one conference this year, and I chose Tradeline. I am glad I did! I share the overwhelming opinion of my fellow attendees of the value added.”

**Errol Millington**
Director, Office of Campus Planning
University at Albany, SUNY

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

**Derek Westfall**
President
Tradeline, Inc.
Sunday, April 7
Fundamentals of Planning and Design of University Science and Engineering Facilities
7:30 a.m. Registration/Continental Breakfast • 8:00 a.m. – 4:30 p.m. (a total of 6 hours of instruction)

Leaders:
Chernoff Thompson Architects
Russ Chernoff, MAIBC, MAAA, AIA, NSAA, OAA, AAPEI – Founding Partner
Naomi F. Gross, MAIBC, MAAA, NSAA – Partner
TreanorHL, Science and Technology
Timothy Reynolds, PE – Principal
Henderson Engineers, Inc.
Kelley Cramm, PE, LEED AP – Associate

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

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

Cost for this course:
$1,140 Fundamentals Course only
$1,000 with registration to two-day conference April 8-9
(Feels include course materials, continental breakfast, refreshment breaks, and lunch)

Space is limited and enrollment is subject to approval.

What past attendees have said...

- This was the best continuing education course I have ever attended. Wow.
- Definitely will recommend.
- GREAT, GREAT, GREAT!
- I can't think of a better way to comprehensively cover so much material in one day without breaking it down to specialty courses. This has been extremely useful for my purposes.
- Fabulous presentation.
- Great content. Managed to distill large topics into digestible segments. Thanks!
- Obviously all four presenters are knowledgeable professionals. They presented and explained excellent information in an excellent format. Thank you all for this session!
- Awesome job! All questions repeated. Panel all EXPERTS in their fields!
- All the presenters were excellent! Course provided valuable information. Nothing to tweak.
- Comprehensive, useful for people at a variety of levels of understanding and for those with a variety of backgrounds (project managers, academic senior leadership, engineers, etc.).
- Wonderful course, many critical take-aways for me personally, and great knowledge across the entire building system.
- Great day of info, kept it fresh and moving. Did great with info for a WIDE range of people in the class.
- Excellent basic knowledge for designing a lab in a short class.
- This was an excellent course – well communicated, knowledgeable speakers, great handout book – good use of time. Thank you!
Facility Site Tours

Sunday, April 7

Tour #1: University of Tampa Graduate and Health Studies Building and the Daly Innovation and Collaboration Building

Check-in at tour desk in hotel lobby at 11:45 a.m.; Departs at 12:00 p.m.; Returns to hotel by 5:00 p.m.

University of Tampa Graduate and Health Studies Building – The new six-story, 90,000-sf University of Tampa Graduate and Health Studies Building was built to support academic needs in UT’s expanding health sciences and graduate programs. The building houses UT’s programs in nursing and physician assistant medicine, as well as UT’s Office of Graduate and Continuing Studies. Two floors are dedicated to UT’s nursing program (renowned as one of the best in Florida), and it includes a large patient care center, simulation rooms, and health assessment clinical spaces. An additional two stories are dedicated to UT’s physician assistant medicine which includes a clinical skills lab, patient simulation labs, assessment rooms, digital anatomy lab, classrooms, study spaces, offices and a unique moulage room, a specialized room for applying mock injuries for student training.

University of Tampa Daly Innovation and Collaboration Building (including the Entrepreneurship Center on the top floor) – The Maureen A. Daly Innovation and Collaboration Building is a place where students, faculty, and community members come together to solve problems, answer questions, teach, learn, mentor, imagine and create. The eight-story building features three floors of academic and administrative space, two cybersecurity labs, lounges, study rooms, classrooms, faculty offices, and a Starbucks on the ground floor. The nationally renowned Lowth Entrepreneurship Center, located on the top floor, includes a pitch room and control booth, two spartan accelerators, a venture capital suite, incubator, space for entrepreneurs in residence, and unique spaces to cultivate innovative, qualified business leaders with the skills to make their visions a reality.

Wednesday, April 10

Tour #2: Eckerd College, James Center for Molecular and Life Sciences

Check-in at tour desk in hotel lobby at 8:45 a.m.; Departs at 9:00 a.m.; Returns to hotel at 11:30 a.m.; Bus continues on to Tampa International Airport for terminal drop-offs by 12:30 p.m.

The $25 million, 50,000-sf James Center for Molecular and Life Sciences puts science on display, making the scientific learning and discovery process visible to the entire college community. Housing biology, chemistry, and biochemistry, the building offers nine teaching labs, two classrooms, four faculty-student research labs, faculty offices and multiple spaces for faculty and students to learn and work together. The one-story building is massed as two wings connected by a central lobby that can be opened to the outside, with airlocks to separate the lobby from the wings. A revolutionary low-cost air-conditioning system utilizes a pipeline of reclaimed, non-potable water from the local wastewater treatment facility that is piped through the building’s heat exchanger to cool the system and then returns the warmed water to the plant. Other elements contributing to the building’s energy efficiency are a variable-air-velocity exhaust system for reduced lab and fume-hood exhaust rates, sensors that calibrate interior lighting to ambient daylight, and a dashboard system that lets building occupants see energy consumption levels in each room.

Important Site Tour Notes:

- **YOU MUST SIGN UP IN ADVANCE (SEE REGISTRATION FORM) AND HAVE WRITTEN CONFIRMATION FROM TRADELINE IN ORDER TO ATTEND THE TOURS.**
- 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.
- $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.
Conference Participants

Speakers
- Affiliated Engineers, Inc.
- Amherst College
- Andersen Construction Company
- Chernoff Thompson Architects
- Cleveland State University
- Duke University
- Ellenzweig
- Ennead Architects
- Francis Cauffman Architects
- Henderson Engineers, Inc.
- High Point University
- Lord Aeck Sargent
- Massachusetts Institute of Technology
- Oregon Health & Science University
- Payette
- Rutgers, The State University of New Jersey
- SRG Partnership
- Stantec
- The S/L/A/M Collaborative
- Tradeline, Inc.
- TreanorHL
- University of Maryland
- University of Massachusetts, Amherst
- University of Missouri-Kansas City
- Vermeulens
- Wichita State University
- Wilson HGA

Exhibitors
- Air Master Systems
- Ambient Air Technologies, LLC
- American Epoxy Scientific
- aseco GmbH
- BROEN-Lab
- Durcon
- Field Management Services, Inc.
- FunderMax GmbH
- Kewaunee Scientific
- Mott Manufacturing Ltd.
- Phoenix Controls
- Scott Laboratory Solutions
- Siemens Building Technologies, Inc.
- STARLINE
- Trespa NA
- The Whiting-Turner Contracting Co.
- Vacuubrand

Special Event Host
- CPP, Inc.
**Agenda at a Glance**

### Special Events and Features:

**Hosted Pre-Conference Reception**
Sunday; April 7, 7:30 p.m. Light appetizers, desserts, and beverages. Attendees may sign in and pick up their conference materials at this time. Guests welcome.

**Hosted Reception**
Monday; April 8, 4:45 p.m. - 5:45 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.

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### Sunday, April 7

<table>
<thead>
<tr>
<th>Event</th>
<th>Time</th>
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<tbody>
<tr>
<td>Registration Sign-in/Continental Breakfast for Fundamentals Course</td>
<td>7:30 a.m. – 8:00 a.m.</td>
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<tr>
<td>* Fundamentals of Planning and Design of University Science and Engineering Facilities</td>
<td>8:00 a.m. – 4:30 p.m.</td>
</tr>
<tr>
<td>* Facility Site Tour (must be pre-registered to attend)</td>
<td>12:00 p.m. – 5:00 p.m.</td>
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<tr>
<td>Hosted Reception; Registration Sign-In</td>
<td>7:30 p.m. – 8:30 p.m.</td>
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**Monday, April 8**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Registration Sign-in/Continental Breakfast</td>
<td>8:00 a.m. – 8:30 a.m.</td>
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<tr>
<td>General Session</td>
<td>8:30 a.m. – 10:55 a.m.</td>
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<tr>
<td>Conference Overview</td>
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<tr>
<td>Speakers: University of Maryland; Cleveland State University; Wichita State University; Rutgers</td>
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<tr>
<td>Concurrent Forum Sessions</td>
<td>11:10 a.m. – 12:05 p.m.</td>
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<tr>
<td>A. Modern engineering education: Space planning metrics, data, and features</td>
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<td>B. Engineering facility programming for combined teaching and research: Approaches, attributes, adjacencies, allocations</td>
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<td>C. Pressing forward: New STEM facility strategies to overcome cultural, funding, and space roadblocks</td>
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<tr>
<td>Luncheon Hosted by [Wind Engineering &amp; Air Quality Consultants]</td>
<td>12:05 p.m.</td>
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<tr>
<td>Concurrent Forum Sessions</td>
<td>1:10 p.m. – 2:05 p.m.</td>
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<tr>
<td>D. The human factor: How people interact physically and psychologically in modern STEM built environments</td>
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<td>E. Next-level engineering facilities: A shift in thinking at the room, building, precinct, and campus scales</td>
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<tr>
<td>F. Amherst College Science Center: A new facility benchmark for the idealized science program</td>
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<tr>
<td>Concurrent Forum Sessions</td>
<td>2:20 p.m. – 3:15 p.m.</td>
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<td>G. Renovation or new construction? Programmatic, infrastructure, and cost considerations</td>
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<td>H. Thematic STEM vs. focused-discipline science buildings: Value-based analysis for today’s competitive academic institutions</td>
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<tr>
<td>I. Construction cost forecast and timing decisions for science and engineering capital projects</td>
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<tr>
<td>General Session</td>
<td>3:45 p.m. – 4:45 p.m.</td>
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<tr>
<td>Speakers: Duke University; Massachusetts Institute of Technology</td>
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<tr>
<td>Hosted Reception (Guests Welcome)</td>
<td>4:45 p.m. – 5:45 p.m.</td>
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* Additional cost to attend  + Presented at this time only.
Tuesday, April 9

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

Concurrent Sessions 8:05 a.m. – 9:00 a.m.
J. + Renovation and Expansion Strategies that Energize Academic Science Culture
K. + What you need to know to implement Intelligent Building technology on your next project

General Session 9:15 a.m. – 10:10 a.m.
Speakers: University of Missouri-Kansas City; High Point University

Concurrent Forum Sessions 10:35 a.m. – 11:30 a.m.
A. Modern engineering education: Space planning metrics, data, and features
G. Renovation or new construction? Programmatic, infrastructure, and cost considerations
L. + Multiple-owners, one building: Shared physical space, financial resources, and knowledge for mutual benefit

Concurrent Forum Sessions 11:45 a.m. – 12:40 p.m.
B. Engineering facility programming for combined teaching and research: Approaches, attributes, adjacencies, allocations
H. Thematic STEM vs. focused-discipline science buildings: Value-based analysis for today’s competitive academic institutions
M. + O&M for new science buildings: What’s the number? Bridging the costly planning gap between “build” and “operate”

Hosted Luncheon 12:40 p.m.

Concurrent Forum Sessions 1:45 p.m. – 2:40 p.m.
C. Pressing forward: New STEM facility strategies to overcome cultural, funding, and space roadblocks
D. The human factor: How people interact physically and psychologically in modern STEM built environments

General Session 2:55 p.m. – 3:40 p.m.
Town Hall Knowledge Roundup

Adjourn

Wednesday, April 10

* Facility Site Tour (must be pre-registered to attend) 9:00 a.m. – 11:30 a.m.

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

Register with payment by March 8 and Save $200
TradelineInc.com

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 14 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 HSW qualify for HSW credit.
Monday, April 8

Blended academic/industry facilities for future-focused developments in robotics, VR, and AI

University of Maryland
Ruth Heffes – Executive Director of Facilities, College of Computer, Math and Natural Sciences

The next revolution in computer science will be cultivated in facilities supporting future-focused developments in computer vision, robotics, artificial intelligence, virtual and augmented reality, programming languages and engineering systems. Ruth Heffes profiles what University of Maryland has created with the Brendan Iribe Center for Computer Science and Innovation. She sets out the education, discovery, donor and industry partnership model, rationales for the design of hacker and maker spaces, virtual and augmented reality labs, cross-disciplinary collaboration and project space, seminar and interactive classrooms, and findings from initial occupancy, startup and integration into campus operation.

CSU clusters state-of-the-art learning facilities, maker space, and labs for the next generation of ready-to-go engineers

Cleveland State University Washkewicz College of Engineering
George Chatzimavroudis, PhD – Associate Dean of Operations

Cleveland State University has raised the bar for engineering education with a world class facility for engineering disciplines to build, refine and test new products, and graduate ready-to-go engineers. George Chatzimavroudis details the state-of-the-art building with features including flexible and collaborative classrooms for multi-modal learning; simulation and computational labs designed to evolve over time; a multi-function makerspace; and research and teaching labs, including one dedicated for freshmen students. The new facility offers a rare opportunity for collaboration between engineering students and students from other disciplines, such as business and arts.

WSU’s Experiential Engineering Building: A factory for ideas, fabrication, and entrepreneurship

Wichita State University
Emily Patterson – Director of Facilities Planning

The latest addition to Wichita State’s Innovation Campus is the Experiential Engineering Building (EEB), an equipment-rich open-to-the-public cross-disciplinary idea factory, maker space, and prototyping center. Emily Patterson surveys the facility design and operating model, space, infrastructure, and access requirements to support hands-on work in advanced manufacturing processes, controls, aerospace propulsion, aeronautics, virtual instrumentation, thermal and fluids engineering, mechanobiology and biomedicine, biodevices and imaging, and more. She illustrates how the EEB complements Wichita’s Innovation Campus growth strategy, economic development goals, and industry partnership initiatives.

Rutgers’ interdisciplinary engineering concept-to-manufacturing accelerator

Rutgers, The State University of New Jersey
David C. Schulz, AIA – Vice President Planning, Development, and Design
Thomas Farris, PhD – Dean, School of Engineering

The recently opened Richard Weeks Hall of Engineering provides state-of-the-art teaching suites and labs for concept development, pilot manufacturing, high-bay testing, rapid prototyping, and microfabrication in one interdisciplinary environment to serve students, faculty, and industry. Dave Schulz and Dean Tom Farris identify key project management steps taken to coordinate ambitious academic program visions with innovative design solutions, with impressive results. They provide a detailed examination of smart classroom configurations, flexible learning laboratories, collaborative work space, dedicated student space, and the types of advanced technology integration required to train the next generation of engineers, foster innovation, and promote discovery.
Positioned for the future: Duke Engineering’s health, environment, and computing transformative new facility

Duke University Pratt School of Engineering
Mitchell R. Vann – Director of Facilities, Infrastructure and Safety

Duke University’s new engineering building now nearing completion will accommodate the next chapter in innovation, entrepreneurship and collaboration in health, intelligent systems, and environmental science, while transforming the student experience. Mitchell Vann dissects the building design which fuses together today’s topmost competitive research and teaching facility features including experiential and entrepreneurial problem-based team learning environments, interdisciplinary and comingled faculty/student theme-based neighborhoods, flexible research lab modules, and space for research partnerships and collaboration. He discusses the space strategies employed to support breakthroughs in engineering and rapid growth in faculty, graduate and undergrad populations.

MIT Media Lab findings on long-term maker space productivity

Massachusetts Institute of Technology
Jessica Tsymbal – Director of Facilities, Media Lab

MIT’s Media Lab is the granddaddy of successful industry/academic maker spaces. Keys to its long-term viability include a proven discovery model and enough facility flexibility to support the demands of highly creative minds from a wide variety of disciplines. Jessica Tsymbal identifies facility design elements, infrastructure features, and operating strategies that have kept Media Lab on the leading edge including its corporate sponsorship model, space allocation strategies, training prerequisites, occupancy expectations, and material and equipment flow. She illustrates solutions for accommodating the type of unique, short-term, and resource-demanding projects common to today’s collaborative research.

Tuesday, April 9

Upgrading chemistry and biology space for modern experiential learning

University of Missouri-Kansas City
Robert A. Simmons, AIA, MPA – Associate Vice Chancellor, Administration

The modern chemistry and biology learning landscape requires more sophisticated spaces and infrastructure than outdated facilities can support – a major modernization initiative is in your future! Bob Simmons profiles the just-completed renovation of University of Missouri - Kansas City’s primary chemistry and biology building – constructed in 1968 with only limited “energy efficiency” renovations until now – to deliver state-of-the-art collaborative teaching and research laboratory spaces, increase enrollment capacity, meet new technology requirements, and address deferred maintenance issues. He examines decisions on project phasing to minimize program downtime, new space metrics, lab configurations and equipment, and more.

Transformative facilities for integrated-program growth and experiential learning

High Point University
Angela Bauer, PhD – Professor & Chair, Biology
Brian Augustine, PhD – Professor & Chair, Chemistry

A combined-discipline facility and academic unit for chemistry, biology, and physics will support High Point University’s rapid program growth, expand experiential learning opportunities, support leading research initiatives, and enhance student and faculty recruiting efforts. Angela Bauer and Brian Augustine set out key decision points in scoping out the new future-facing Wanek Building, and they detail innovative laboratory, planetarium, and classroom features High Point selected to equip students with workforce-ready technical skills and a scientific mindset. They illustrate efficiencies in space, equipment, and operating costs available by putting three disciplines under one roof.

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.
A. Modern engineering education: Space planning metrics, data, and features

Ellenzweig
Michael Lauber – Principal
Carolyn Day – Project Manager, Lab Architect/Associate

A radical shift in engineering education is underway, and this session charts a course for planning your next facility with the new space types, features, and metrics that ensure your institution will stay competitive long-term. Michael Lauber and Carolyn Day illustrate the latest designs and metrics for a variety of new learning spaces, and identify key planning decisions for class size, flexibility, and technology. They detail facility implications of the Capstone Project Lab – a space type necessary for ABET accreditation – as well as new collaboration strategies, the effects of engineering’s expansion into bio-related disciplines, and the evolving connection between graduate research and undergraduate education. [AIA] [HSW]

Monday 11:10 a.m. – 12:05 p.m. | Tuesday 10:35 a.m. – 11:30 a.m.

B. Engineering facility programming for combined teaching and research: Approaches, attributes, adjacencies, allocations

Stantec
Michael J Reagan – Vice President
Cynthia Labelle – Senior Project Manager

How are the new generation of combined research and teaching facilities being designed to deliver on the promises of cross-pollination, efficiency, productivity, and cost-effectiveness, and what are the space metrics to plan for? Here you’ll see leading examples from a variety of academic institutions across the US that are expanding and replacing their engineering facilities. Session leaders set out a process for identifying unique institutional attributes that shape decisions on space allocations, infrastructure, and configurations of active learning studios, flexible laboratories, shared interaction spaces, and support space requirements, and that balance specialized and modular spaces for robotics, automation, prototyping, and other emerging programs. [AIA] [HSW]

Monday 11:10 a.m. – 12:05 p.m. | Tuesday 11:45 a.m. – 12:40 p.m.

C. Pressing forward: New STEM facility strategies to overcome cultural, funding, and space roadblocks

TreanorHL
Tim Reynolds, PE – Principal/Science and Technology Studio Leader
Patrick Jones, AIA, OAA, LEED AP BD+C – Principal/Science and Technology Studio Leader
Lisa Lamb, IIDA, NCIDQ – Associate Principal/Interior Architecture

Science, Technology, Engineering and Mathematics (STEM) programs are facing challenges and constraints that require innovative and sustainable planning and design solutions. These challenges include decreased funding; aging facilities; increased costs for students; online programs; stagnant retention and graduation rates; and changes in student views about higher education. Session leaders deliver two case studies of recently completed STEM facilities that break from traditional design assumptions, attract new students, and advance student success through shared resources and new space types. They illustrate the critical roles that active learning studios, maker space, tutoring and collaboration areas, and innovation hubs play in meeting program and enrollment growth targets. [AIA] [HSW]

Monday 11:10 a.m. – 12:05 p.m. | Tuesday 1:45 p.m. – 2:40 p.m.

D. The human factor: How people interact physically and psychologically in modern STEM built environments

Francis Cauffman Architects
Jay Hallinan, RA – Senior Lab Planner
Wan Leung, AIA – Principal, Science & Technology

This presentation will examine today’s design trends in academic STEM facilities and identify how these facilities are shaped by, and how they are affecting, human behavior. Using a mixture of case studies and design theory, Jay Hallinan and Wan Leung dissect the elements, features, and configurations of new spaces making their way into modern science and engineering facilities including active learning and project space, flexibility features, shared physical resources, collaboration space, and new technology to measure the impact on student, staff and community behavior including program recruitment, growth, and retention. They pinpoint which trends added benefit, which did not meet expectations, and where improvement is needed. [AIA] [HSW]

Monday 1:10 p.m. – 2:05 p.m. | Tuesday 1:45 p.m. – 2:40 p.m.

"It was a valuable experience for me to participate in this conference, and I was impressed at how organized and well-thought-through the conference was. It is no wonder that Tradeline conferences have the reputation that they do among higher education professionals.”

Debby Carr, AICP LEED GA
Senior Planner, Capital Renewal
Massachusetts Institute of Technology
E. Next-level engineering facilities: A shift in thinking at the room, building, precinct, and campus scales

The S/L/A/M Collaborative
Kevin Herrick, AIA – Principal
Rutgers, The State University of New Jersey
David C. Schulz, AIA – Vice President Planning, Development, and Design
Thomas Farris, PhD – Dean, School of Engineering

The next generation of engineering learning and research environments are defined by new planning metrics and visions that represent a significant shift in thinking at the room, building, precinct, and campus scales. Session leaders examine short- and long-term engineering growth initiatives, and efficient and effective programming metrics spanning maker spaces, industry partnership research spaces, equipment-centric laboratories, traditional and active learning environments, and programmed outdoor spaces. They outline processes for aligning strategic initiatives with existing building portfolios and characteristics to create action plans for program expansions, facility replacements, renovations, and upgrades.

Monday 1:10 p.m. – 2:05 p.m.

G. Renovation or new construction? Programmatic, infrastructure, and cost considerations

Lord Aeck Sargent
John Starr – Principal
Ben Elliott – Senior Associate

The easy answer to increased demand for STEM space is to build a new facility, but underappreciated and underutilized older buildings are too often overlooked as a potential resource. John Starr and Ben Elliott examine build new vs. renovate decision-making rationales being employed to meet increased space requirements, and they identify cost mitigation effects of responsive programming and facility reuse. They enumerate key functional needs for STEM facilities including a wide array of new space types that respond to the increasingly team-based, collaborative, and interdisciplinary activities. They demonstrate how new construction or reuse might best support the next generation research and learners.

Monday 2:20 p.m. – 3:15 p.m. | Tuesday 10:35 a.m. – 11:30 a.m.

H. Thematic STEM vs. focused-discipline science buildings: Value-based analysis for today’s competitive academic institutions

Wilson HGA
Bill Wilson, FAIA – Principal
Jacob Werner, AIA, LEED AP BD+C, WELL AP, LFA – Director of Sustainable Design / Associate
University of Massachusetts, Amherst
Joseph Balzano – Project Executive, Campus Enterprise Group

The benefits of collaborative science have triggered an interdisciplinary science and engineering building boom pressing institutions toward program convergence, shared physical resources, open workspace, and team-based research and education. But is this facility direction the right choice for your institution? Session leaders contrast the decision making and planning strategies that determined the designs of two distinct science facilities at University of Massachusetts, Amherst – one dedicated-science building and one built for trans-disciplinary groups. They detail benefits and pitfalls for each approach, illustrate solutions for unexpected mid-project changes, and deliver post-occupancy findings.

Monday 2:20 p.m. – 3:15 p.m. | Tuesday 11:45 a.m. - 12:40 p.m.

Sessions qualify for AIA credit. Sessions qualify for HSW credit.
I. Construction cost forecast and timing decisions for science and engineering capital projects

Vermeulens, Boston
James Vermeulen, PQS, LEED AP, Construction Economist – Managing Principal

Vermeulens, New York
Vikrant Parikh – Senior 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. Vermeulens will deliver up-to-date construction cost forecasts based on the latest employment data, 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.

J. Renovation and Expansion Strategies that Energize Academic Science Culture

Ennead Architects
Kate Mann – Associate Principal, LEED AP

The new Integrated Science Commons at Vassar College illustrates the increasing trend of using infrastructure renewal to alleviate the pressure for more science space and invigorate campus science and technology cultures. Kate Mann charts the collaborative, multi-departmental planning initiative that drove multiple historic building renovations and creation of the new Bridge for Laboratory Science, increasing shared resources, collaboration, and student engagement, and reconnecting campus science communities. She illustrates analytical tools, decision-making rationales, and cost and sustainability advantages that come from reuse of existing facilities and minimizing new construction.

Monday 2:20 p.m. – 3:15 p.m.
Tuesday 8:05 a.m. – 9:00 a.m.
K. What you need to know to implement Intelligent Building technology on your next project

**Affiliated Engineers, Inc.**
Sanjyot Bhusari – Principal/Intelligent Buildings Practice Leader
Paul Erickson, LEED AP BD+C – Principal

Intelligent Building (IB) technology is now enabling owners to access, organize, and analyze complex building systems data and make decisions that reduce energy and water costs, improve user experience, increase staff effectiveness, refine operations, and inform capital planning. This session explores the intelligent building ideation and implementation process, profiles case studies on expectations and outcomes, and demonstrates a facility cost vs. value charrette that can be extrapolated campus-wide. Sanjyot Bhusari and Paul Erickson provide an assessment of what’s possible with IB today and what’s coming in the future, and they deliver a check list of strategies to be included in your next project.

AIA  HSW

Tuesday 8:05 a.m. – 9:00 a.m.

L. Multiple-owners, one building: Shared physical space, financial resources, and knowledge for mutual benefit

**SRG Partnership**
Laurie Canup, AIA – Principal
Oregon Health & Science University
Michael Mackin - Functional & Space Programmer
Andersen Construction Company
Jeff Slinger – Senior Project Manager

Coming to your institution soon: Multiple-entity partnerships pooling resources to advance individual academic missions, alleviate funding constraints, leverage partner synergies, and add much needed space. This is the opportunity that the Portland Innovation District’s 4th and Montgomery project – a unique 4-owner partnership including three educational institutions and The City of Portland – is promising to deliver. The new $77 million building collocates institutional dental programs, a School of Public Health, Graduate School of Education, shared classrooms, and student programs. Session leaders detail processes for overcoming project challenges, generating consensus, and delivering efficient decisions using Choosing By Advantages and Integrated Project Delivery.

AIA  HSW

Tuesday 10:35 a.m. – 11:30 a.m.

**Tradeline conferences are a newly found asset for me. The educational presentations at the conferences have been very helpful to me in the work I do as a facility manager at my university and will have a lasting impact on our success into the future.**

James McLaughlin
Assistant Dean for Student Programs and Director Campus Center
Worcester Polytechnic Institute

M. O&M for new science buildings: What’s the number? Bridging the costly planning gap between “build” and “operate”

**Tradeline, Inc.**
Steven L. Westfall – Founder and CEO

Too many new science buildings fall victim to a costly planning gap between “build” and “operate” that results in post-construction O&M staffing that is too little, too late, and unprepared – and brand-new buildings that fail to meet the critical science-program requirements of building occupants. Steve Westfall demonstrates that O&M headcount for any new science building can be accurately known as early as schematic design, and he illustrates a project management protocol for using predicted O&M headcount to engage O&M, science, and financial stakeholders in early quantitative planning for post-construction operational success.

AIA

Tuesday 11:45 a.m. - 12:40 p.m.
Registration and Accommodations

The conference will be held at:

The Vinoy Renaissance Resort
501 Fifth Ave. NE
St. Petersburg, FL 33701

Online
TradelineInc.com

Fax
925.254.1093
From outside the U.S. 1.925.254.1093

Mail
Tradeline, Inc.
115 Orinda Way
Orinda, CA 94563, USA

Questions
Call 925.254.1744 ext. 112
From outside the U.S.
1.925.254.1744 ext. 112

Register with payment by March 8 and Save $200
TradelineInc.com

Registration:

**Conference Registration Fees**
Registration fees with payment by 3/08/19
$1890 for single registration
$1740 each for groups of 2 or more
Registration fees after 3/08/19
$2090 for single registration
$1940 each for groups of 2 or more

**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 University Science and Engineering Facilities
$1140 Stand-alone course
$1000 with full conference participation

**Facility Site Tours**
$25 Transportation Fee/each

**Registration Information**
Make checks payable to:
TRADELIN, INC.
Federal Tax I.D. #95-297-2863

**Policy on Cancellations, Changes and Refunds**
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.

**Hotel and Travel Information:**

**Room Reservations**
Tradeline has reserved a block of sleeping rooms for this event at The Vinoy Renaissance Resort. For registrations received by March 7, 2019 Tradeline will handle and confirm room reservations [based on availability] according to your instructions on the registration form.

**After March 7 please call Tradeline for room availability.**

**Changes:** All room reservations and changes must originate through Tradeline, Inc. to obtain the special rate. If you contact the hotel directly, you may be informed that they are sold out, or you may be charged a higher rate.

**Room Rate**
The discounted room rate for this event is $227/night, single or double occupancy.

**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 Vinoy Renaissance Resort is 22 miles from Tampa International Airport. Taxis or shuttles are readily available from all airport terminals. Taxi fares will run $50 – $60 each way.

**International Attendee Discount**
A $250 discount will be applied to the 2-day full conference registration fee for non-U.S. residents traveling from outside of the U.S.

Use promo code INTL2019 if registering online.
Registration Form

College & University Science and Engineering Facilities 2019
April 8-9 • The Vinoy Renaissance Resort in St. Petersburg, FL

1. Please Type or Print Clearly (or register online at www.TradelineInc.com)
   - Conference registration is not complete until confirmed by Tradeline, Inc.
   - Please confirm airline reservations only after confirmation of registration.
   - Only one registrant per form.

Name _____________________________________________ 
First Name for name badge ____________________
Title/Position _______________________________________________________________________________
Institution _____________________________________________________________________________________
Address____________________________________________________________M/S ______________________
City___________________________________ State ______  Zip Code _________________________________
Country _______________________________Phone ______________________Fax _______________________
Attendee Contact Email ________________________________________________________________________
Alternate Contact Email _______________________________________________________________________

2. Register with payment before March 8 and Save $200!
   - Payment by 3/08/19*  ✐ Full price*
     Single Registration  ❑ $1,890  ❑ $2,090
     Team Registration Discount**  ❑ $1,740/Attendee  ❑ $1,940/Attendee
   **Name of other team registrant(s) _______________________________________________________________

3. Conference Add-Ons:
   - Sunday, April 7
     Fundamentals of Planning and Design of University Science and Engineering Facilities
     ❑ $1,140  ❑ $1,000 with registration to the full 2 day conference April 8-9
     ❑ $25 Tour #1: University of Tampa Graduate and Health Studies Building and the Daly
       Innovation and Collaboration Building
   - Wednesday, April 10
     ❑ $25 Tour #2: Eckerd College, James Center for Molecular and Life Sciences

4. Select a Method of Payment
   To receive early discount, payment must accompany registration. Payment or P.O. # must be
   received by conference date in order to attend.
     ❑ Visa     ❑ Mastercard     ❑ AmEx Name on Card __________________________
     Card # ___________________________ Exp. Date ______ Security Code ______
     Billing Address: __________________________ (if different from above)
     ❑ CHECK: Make payable to TRADELINE, INC. Check # __________________________
     ❑ INSTITUTIONAL P.O. number (not eligible for early discount) __________________________

5. Hotel Reservations
   Please do not call the hotel directly. The special room rate below is available at The Vinoy
   Renaissance Resort through Tradeline only.
   ❑ Yes, please reserve a room for me. Arrival Date: ___________ Departure Date: ___________
   ❑ Single occupancy ($227/night +12% room tax) ❑ Double occupancy ($227/night +12% room tax)
   Special Requests**: __________________________________________________________
   ❑ No, I will not require a hotel reservation.

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cancellations received 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 within 5 days of the event.

*International Attendee Discount: A $250
discount will be applied to the 2-day full
conference registration fee for non-U.S.
residents travelling from outside of the U.S.

**Team Discount pricing above applies
to groups of 2 or more. For teams of 5 or
more please call Tradeline for additional
discount availability.

***All requests will be honored based
upon availability at hotel upon time of
arrival. Tradeline will inform the hotel of
your preferences but cannot guarantee any
special requests.

All room reservations are guaranteed.
For changes or cancellations, please
notify Tradeline at least 72 hours prior
to your scheduled arrival. No-shows and
cancellations within 72 hours of arrival are
subject to a charge equal to one night’s stay.
TRADELINE® 2019 Conferences

College & University Science and Engineering Facilities 2019
April 8-9 in St. Petersburg, Florida

Research Facilities 2019
April 11-12 in St. Petersburg, Florida

University Facilities 2019
May 6-7 in Scottsdale, Arizona

Animal Research Facilities 2019
September 30 – October 1 in Boston, Massachusetts

University Facilities for the Sciences and Advanced Technologies 2019
October 28-29 in Austin, Texas

Space Strategies 2019
November 7-8 in San Diego, California

Register with payment by March 8 and Save $200
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