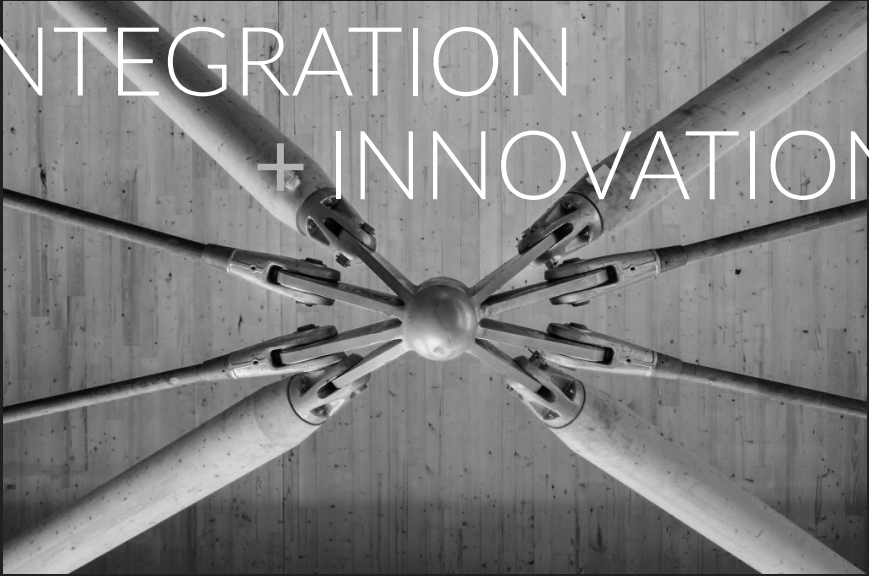


# INTEGRATION + INNOVATION



2019 BTES CONFERENCE

UMASS AMHERST | JUNE 19 - 22

## Integration + Innovation

*"The cross pollination of disciplines is fundamental to truly revolutionary advances in our culture."*

*Neil deGrasse Tyson*

Following on the alliterative themes of recent BTES conferences, we have selected Integration and Innovation as the theme for the 2019 gathering. Innovation can begin with conjecture, with a searching for more effective solutions, or with an application to currently unknown or unarticulated needs. Innovation scholarship examines the personal intellectual habits that support new ideas, such as openness and exploratory behavior, as well as the circumstances behind the places in which creativity flourishes, such as support for cross-disciplinary fertilization and access to resources. The 2019 BTES conference will explore the role of technology education and curriculum in cultivating these intellectual habits in our students (and ourselves) and in creating the organizational spaces in which the future of practice will be shaped. Sessions will seek exemplary proposals of research and pedagogical applications that explore innovative practices and integrative thinking in the academy and profession.

These intertwined themes of innovation and integration are deeply embodied in the host site, the award-winning John W. Oliver Design Building at the University of Massachusetts. Named one of the Best Buildings of 2017 by the Wall Street Journal, the 87,000 square foot building counted a number of superlatives at its opening, among them, the most technologically advanced cross-laminated timber building in the country. However, while we are delighted by these accolades and the building's warm appeal, it is the organizational potential that the site embodies that makes it a fitting site for the 2019 BTES Conference.

Housing the university's architecture, building and construction technology, landscape architecture, and regional planning programs, the collective effort to realize the Design Building was launched to "represent the thoughtful integration of human creativity and ecological sensitivity that is the foundation of our professions."

The Design Building is a fitting backdrop for the sharing of BTES members' own innovative research and pedagogies. The structure is a testament to faculty ingenuity, political acumen, and creative collaboration: some of the building technologies employed, such as the layered composite floor system of concrete, timber, and steel mesh, were researched and developed by faculty right on campus. Moving from invention to application involved garnering the political support of a former congressman and the MA State Legislature, who ultimately activated the shift from the status quo steel frame to a demonstration project for new and innovative wood construction technologies through an Environmental Bond Bill. To deploy these innovations spatially, the architects and engineers collaborated closely with code officials to shape new codes while creating a building that is now a primary teaching tool for our students—from its exposed glulam and cross-laminated timber (CLT) frame, to its visible mechanicals and interdisciplinary teaching spaces.

Caryn Brause  
Peggi L. Clouston  
Naomi Darling

## Opening Plenary Session



### **From Innovation to Implementation: Bio-Based Building Technologies from UMass Amherst**

In early 2017, the University of Massachusetts Amherst opened the John W. Olver Design Building – a 4 story structure that demonstrates leading-edge mass timber technologies. The building features an exposed glued-laminated timber column-and-beam frame, mass timber lateral force-resisting systems, and hybrid cross-laminated timber concrete floor systems informed, in part, by the presenters' own wood mechanics research group. This presentation will highlight the innovative structural use of wood in the building and discuss recent and ongoing research projects within the Building and Construction Technology (BCT) program at UMass on developing novel bio-based composites through numerical and experimental techniques.

## Plenary Speakers



### **Peggi Clouston, PEng, MASc, PhD**

*Associate Professor, Wood Mechanics and Timber Engineering, UMass Amherst*

Dr. Clouston has been working in the field of timber engineering for almost 30 years. As a Professor at the University of Massachusetts Amherst, she teaches structural timber design and material mechanics to students of architecture, engineering, and construction technology. Author of more than 80 publications, she conducts research on the structural behavior and efficient use of mass timber and bio-based composite materials. Current research topics include: cross laminated timber (CLT) panels from low-value eastern wood species, wood-concrete composite floor systems, computational modeling of structural composite lumber, and laminated veneer bamboo connections. Dr. Clouston has been a registered professional engineer (EGBC) since 1992. She is Associate Editor of the ASCE Journal of Materials in Civil Engineering and serves on numerous federal peer review panels and committees.



### **Alexander Schreyer, MASc, Dipl.Ing**

*Program Director, Building and Construction Technology, UMass Amherst*

As Director of the Building and Construction Technology program and faculty in ECO and Architecture at the University of Massachusetts Amherst, Professor Schreyer has been teaching classes in digital design, BIM (Building Information Modeling), and building materials and systems for over 15 years to a varied audience of students and professionals coming from construction, engineering and architecture backgrounds. He is the author of "Architectural Design with SketchUp," co-author of "Fundamentals of Residential Design," and he has published various extensions for SketchUp. In addition, Professor Schreyer's background encompasses structural engineering, wood science and heavy-timber construction. He teaches and conducts research in structural wood systems and regularly speaks at national and international conferences.

## Opening Keynote Timber



### Yugon Kim

*Founding Partner, IKD, Cambridge, MA*

Yugon is a founding partner at IKD, director of TSKP Studio Boston, and a faculty member at the Rhode Island School of Design. Prior to establishing IKD, he was with the Renzo Piano Building Workshop for over 6 years, spending two at their home office in Genoa, Italy before overseeing the construction of the extension building of the Isabella Stewart Gardner Museum in Boston, MA. Yugon Kim has a long history of working with timber, having most recently led the team to develop the material and construction of the first ever Hardwood CLT(HCLT) structure in the United States. He curated and designed the exhibition Timber City which was on view at the National Building Museum in Washington, DC, advocating the use of mass timber construction in urban settings. This exhibition expanded upon his 2015 exhibition Urban Timber at the Boston Society of Architects Space.

### Keynote Description:

With its smaller carbon footprint, timber construction should be considered alongside steel and concrete to build both low and mid-rise projects. With buildings in the U. S. accounting for 38% of all carbon emissions and with population growth on the rise, we must reconsider how we construct our buildings. Climate change can be combated in two ways –by reducing carbon emissions and by removing carbon from the atmosphere – and timber is unique in that it is the only building material that can do both. Recent innovations in timber technology is paving the way for timber once again to become integral to the fabric of cities, at this pivotal moment in time.” Yugon Kim will introduce recent innovations in timber technology, and through his own research demonstrate the wide range of benefits for timber-based construction. He will focus primarily on his ongoing research of the material development of the first commercially pressed Hardwood CLT that lead to the construction of the first hardwood CLT project in the United States using grade 3 common mix species hardwoods.

## Closing Keynote Critical Questions for the Future of Sustainability



### Michelle Addington

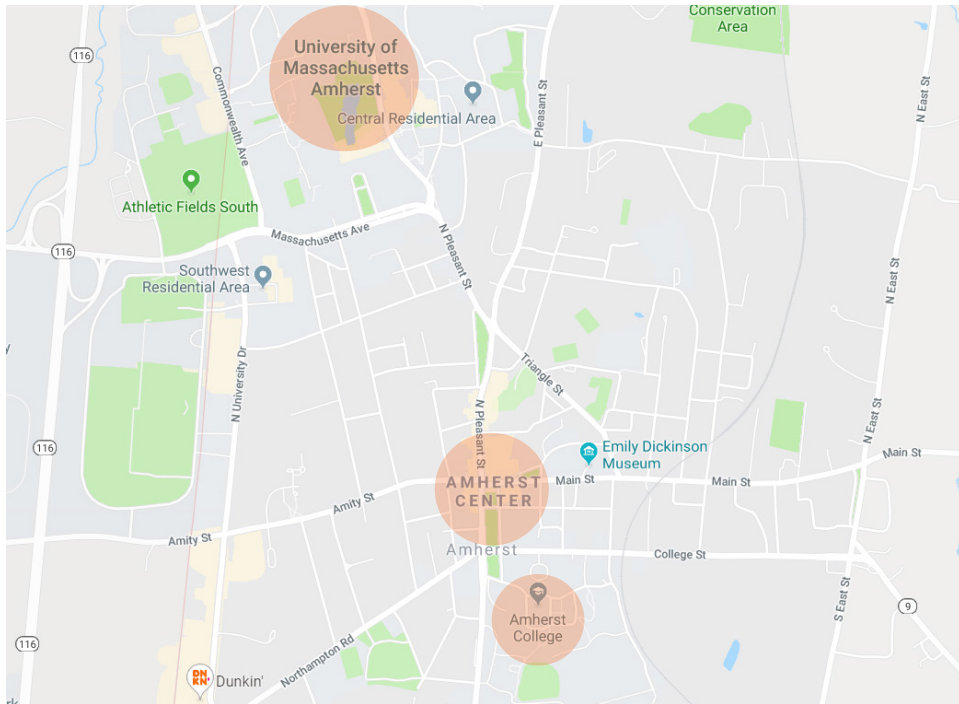
*Dean, School of Architecture  
University of Texas at Austin*

Michelle Addington is dean of The University of Texas at Austin School of Architecture, where she holds the Henry M. Rockwell Chair in Architecture. Formerly, she served as Gerald Hines Chair in Sustainable Architectural Design at the Yale University School of Architecture and was jointly appointed as a Professor at the Yale University School of Forestry and Environmental Studies. Originally educated as a mechanical/nuclear engineer, Addington worked for several years as an engineer at NASA/Goddard Space Flight Center and for E.I DuPont de Nemours before she studied architecture. Her books, chapters, essays, journal papers, and articles address topics ranging from fluid mechanics to the History of Technology to smart materials, and she has consulted on projects as diverse as the Sistine Chapel and Amazon rain forest.

### Keynote Description

As we stand by while we speed past climate change's warming limit of 2° C, after having already passed the 400 ppm CO2 threshold a few years ago, we must step back to question the value and ultimate effectiveness of the strategies our discipline has been so wedded to over the last three decades. Unquestionably, there have been enormous strides in analysis and simulation, in the development of new technologies and materials, and in the collective commitment to bring sustainability to the design of the built environment. As much as these strides have advanced our field, they have not only been unable to reduce emissions, they have not even been capable of stemming the continuing rise in emissions. This presentation will look back at the questions and frameworks that may have led us astray, and pose alternatives that may help us right our course in the future.

## AMHERST LOCATION MAP



**Dine arounds** are located in Amherst Center. Amherst Center is approximately a 20 minute walk from the Design Building, a 30 minute walk from Hotel UMass, and a 35 minute walk from the North D Campus Apartments.

**Bikeshare:** A regional bikeshare program has 5 locations on campus. All 540 bikes are pedal electric-assisted. [www.valleybike.org](http://www.valleybike.org)

**Rail Trail:** The 100 mile Mass Central Rail-Trail runs through Amherst. The Norwottuck section is accessible from the UMass campus. Daily rentals with helmets available in Amherst Center at Laughing Dog Bicycles.

**Half and Full Day Hikes:**  
Holyoke Range State Park, Amherst  
Mt Sugarloaf State Reservation, Amherst  
Monadnock State Park, Jaffrey, NH  
Mt Greylock State Reservation, Lanesborough

**Dine Around Locations**  
(2 tables of 8 at each location - it's a small town!)

**Formosa** \$\$ (7:00)  
62 Main Street

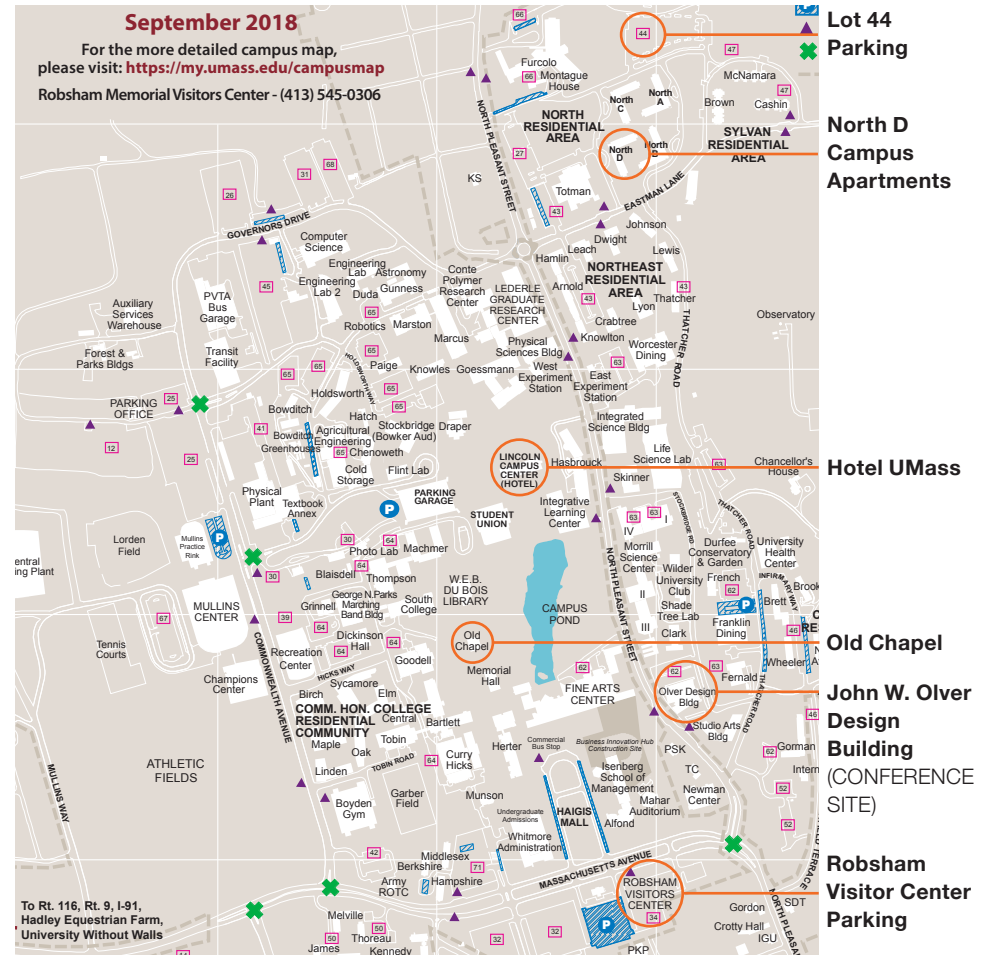
**Osteria Vespa** \$\$\$ (7:00)  
28 Amity Street

**30 Boltwood** \$\$\$ (7:00)  
Prix Fixe Menu  
30 Boltwood Avenue

**Johnny's Tavern** \$\$ (7:15)  
30 Boltwood Walk

**Thursday night after dinner gathering spot**  
**High Horse** (9:00-ish)  
24 North Pleasant Street  
Upstairs bar section

## UMASS CAMPUS MAP



### Conference Venues:

**John W. Olver Design Building**  
551 N Pleasant St

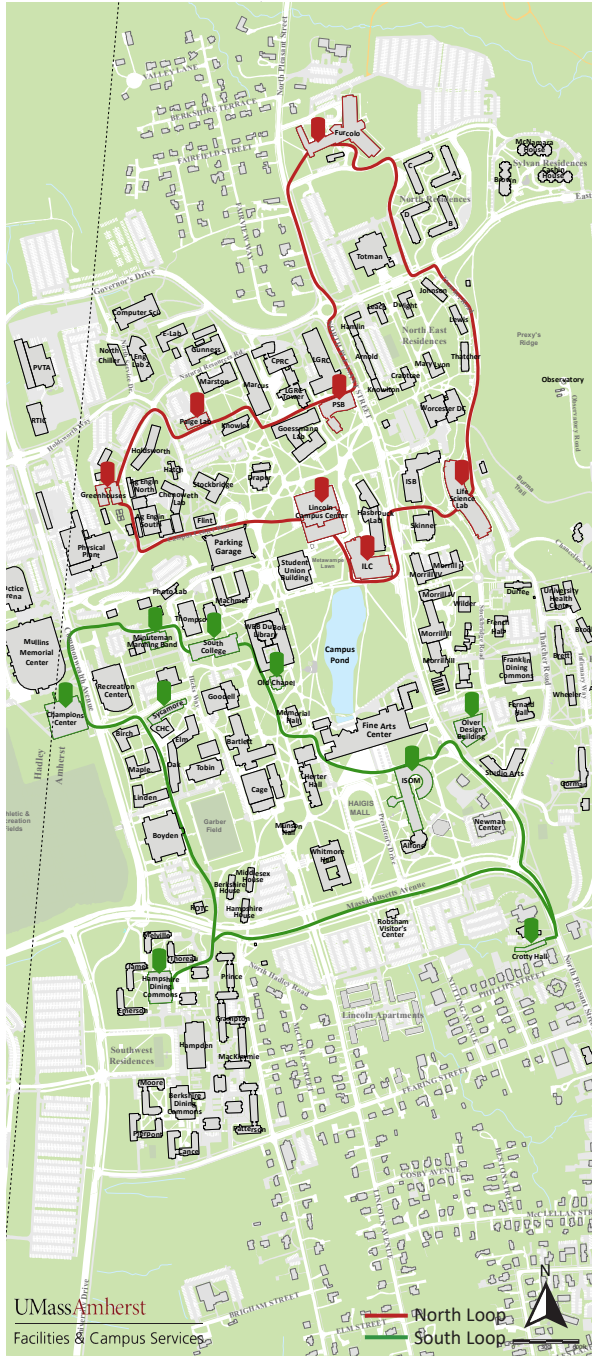
**Old Chapel**  
144 Hicks Way

### Conference Accommodations

**Hotel UMass**  
1 Campus Center Way

**North D Campus Apartments**  
52 Eastman Lane

**Robsham Visitor Center Parking**  
300 Massachusetts Ave



**Visit the UMass Amherst Green Buildings using the Self Guided Tour**

Access the map by going to [umass.edu/cp/maps-tours](http://umass.edu/cp/maps-tours) in your web browser or by scanning the QR code below.



Choose a path: North, South, or All

As you tour the campus, use the app to read a short building description. Click the "More Info" link to access each individual building's website and read about the sustainable design features.

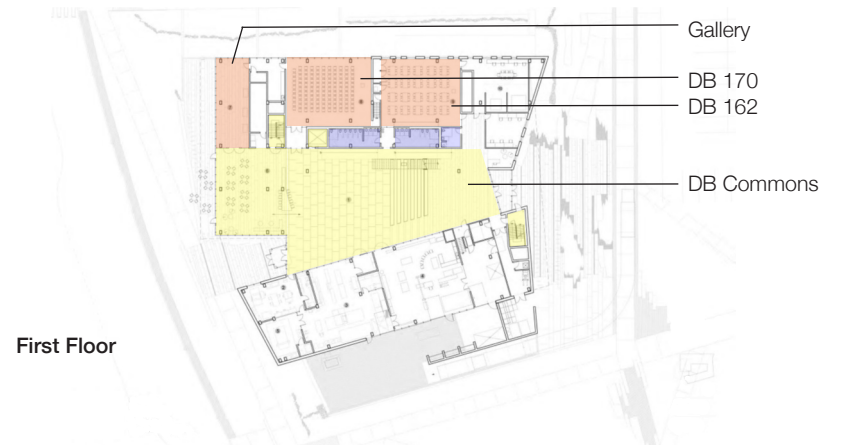
For more info about Campus Planning, visit [umass.edu/cp](http://umass.edu/cp).



Third Floor



Second Floor



First Floor

**8:00 – 9:00am Conference Registration & Breakfast**

Location: Commons, John W. Olver Design Building

**9:00 – 10:15am Welcome, Introductions, and Opening Plenary**

Location: Design Building 170

*From Innovation to Implementation: Emerging Bio-Based Building Technologies from UMass, Amherst*

Peggi Clouston and Alex Schreyer

**10:15 – 10:30am: Coffee Break**

**10:30 – 12:00pm: Morning Paper Sessions**

**MATERIALS + CONSTRUCTION**

Location: DB 162, Moderator: Lisa Huang

*Mbesese Build: An Experimental Experience*

Kevin Dong and Thomas Fowler, California Polytechnic State University

*Developing Evidence-based Tools and Resources for Material Selection*

Erin Carraher and Luke Leither, University of Utah

*Material Design Integration*

Roger Hubeli, Syracuse University

**ENERGY + SYSTEMS**

Location: DB 221, Moderator: Tom Leslie

*Integration of Building Energy Modeling (BEM) and Building Information Modeling (BIM): Workflows and Case Study*

Mahsa Farid Mohajer, University of Massachusetts Amherst

*Energy Use Intensity as a Driver for Building-Envelope Design*

Scott Murray, University of Illinois at Urbana-Champaign

*Blown Away: a Case Study in Modulated Airflow through Digital Modeling and Fabrication*

Liane Hancock, Thomas Cline, Adam Feld and Yonas Niguse, University of Louisiana Lafayette

**PEDAGOGY**

Location: DB 225 Moderator: Robert Dermody

*Expanding Strategies towards Architectural Design and Building Technology Integration*

Carolina Manrique, University of Idaho

*Integrative Design and the Problem of Fragmented Knowledge*

Dustin Albright, Clemson University

*In Spite of Pragmatics: The Pursuit of Both/And for Integrated Architectural Solutions*

Hans C. Herrmann and Jacob Gines, Mississippi State University

**12:15 – 1:30pm Lunch + Optional Building Tour**

Location: Commons, John W. Olver Design Building

**1:30 – 3:00pm: Afternoon Paper Sessions**

**MATERIALS + CONSTRUCTION**

Location: DB 162, Moderator: Hans Hermann

*Timber 4.0: Open Source Systems as a Democratic Tool for Designing and Building*

Ulrich Dangel, The University of Texas Austin

*Trans-Disciplinary Detail in Mass Timber*

David Kennedy, Auburn University

*Concrete: Computation and Optimization*

Nik Nikolov, Lehigh University

**COMPUTATIONAL DESIGN + ANALYSIS**

Location: DB 221, Moderator: Shelby Doyle

*CRM Manufacturers in Architecture*

Dana K. Gulling, North Carolina State University

*Situated Learning Through Robotics Processes*

Shahin Vassigh, Florida International University

*A Framework for Performance-Based Facade Design: Approach for Multi-Objective and Automated Simulation and Optimization*

Mahsa Minaei, University of Massachusetts Amherst

**STRUCTURES**

Location: DB 225, Moderator: Deborah Oakley

*Teaching Structures Online: Finding Opportunities for Tangible Engagement*

Dustin Albright, Clemson University

*ISA: Precedent Studies in Arch Structures III*

Kristopher Palagi, Louisiana State University

*Technical Provocations: Material Inventions, Structural Assemblies, and Environmental Responses as Precursors and Design Prompts*

Lisa Huang and Bradley Walters, University of Florida

**3:15 – 4:15pm Project/ Poster Pecha Kucha**

Location: Design Building 170

Exhibit, Coffee, and Snacks in the Design Building Gallery

*BENCH: Biorhythmic Evaporative-cooling Nano-TeCH*

Alethia Ida, University of Arizona

*The Corner: Tectonic Intersections of the Architectural Environment*

Chad Schwartz, Kansas State University

*"Completing the Cycle" with Hardwood CLT: Innovation in material development and utilization*

Edward Becker, Virginia Tech

*Design/Lift: An Extra Concrete Beam in a Park*

Federico Garcia Lammers, South Dakota State University

3:15 – 4:15pm Project/ Poster Pecha Kucha continued

Location: Design Building 170  
Exhibit, Coffee, and Snacks in the Design Building Gallery

*Phenomenology and Performance*

Jerry Stivers, Oklahoma State University

*Truss-ting History*

Joshua Friedman, Northeastern University

*WATeRVASE: Wind-catching Adaptive Technology for a Roof-integrated Ventilation*

*Aperture System and Evaporative-cooling*

Maryam Moradnejad, University of Arizona

*Methods to Monitor and Simulate Existing Residences*

Wendy Meguro, University of Hawaii

*High-Tech Timber See Saw*

Conrado Araujo, University of Massachusetts Amherst

4:15 – 5:15 pm: You Pick Session

**TAD Executive Editors: How to Prepare an Article for a Journal**

Location: DB 162, Presenter: Andrzej Zarzycki, NJIT, TAD Editorial Board

**Campus Walking Tour – Brutalist Bonanza and more**

Location: meet by front door to Design Building Commons  
Host: Carl Fiocchi, UMass Amherst

**BTES Board Meeting**

Location: DB 221

5:30 – 6:30 pm Opening Keynote

Location: Design Building 170

*Timber*

Yugon Kim

Founding Partner IKD, Cambridge, MA

7:00 – 9:00 pm: Dine Arouds in Downtown Amherst

9:00 pm-ish: Meet up at High Horse, Downtown Amherst

**SCHOLARWORKS DIGITAL PROCEEDINGS**

<https://scholarworks.umass.edu/btes/>

Your work is discoverable in Google Scholar. You can improve the Google rank of your submission by putting its title, formatted as a link, on your personal or departmental webpage at your institution.

8:00 – 9:00am Conference Registration & Breakfast

Location: Commons, John W. Olver Design Building

9:00 – 10:15 am BTES Board and Conference Attendees Meeting

Location: Design Building 170

Sinead McNamara, Syracuse University, BTES President

**Ed Allen Medal Launch**

Robert Dermody, Roger Williams University

10:15 – 10:30am: Coffee Break

10:30 – 12:00pm: Morning Paper Sessions

**MATERIALS + CONSTRUCTION**

Location: DB 162, Moderator: Chad Schwartz

*Synchronic and Diachronic Labor: Deconstructing Eladio Dieste's Ruled Surfaces*

Federico Garcia Lammers, South Dakota State University

*Intuition Before Integers: Integrating Building Technology Into the Design Studio*

James Leach and Kristin Nelson, University of Detroit Mercy

*Folding in Research*

Roger Hubeli, Syracuse University

**ENERGY + SYSTEMS**

Location: DB 221, Moderator: Carmen Trudell

*Steel Structures that Breathe: Two Extensively Glazed Buildings that Integrate Natural Ventilation within Structural Members*

Patrick Charles, Roger Williams University

*Partners in Light: How Plastics Enabled Fluorescent Lighting and the Modern Office*

Thomas Leslie, Iowa State University

*Scaling Up Passive Energy to Suburban Developer Housing*

Craig Griffen, Thomas Jefferson University

*Microclimates at the Sixth Facade*

Abby Reed, Northeastern University

**LANDSCAPE TECHNOLOGIES**

Location: DB 225, Moderator: Brian Osborn

*The Geographical Dimensions of Patent Innovation: History, Precedents, Praxis, and Pedagogy, in an Expanded Field of Landscape Technology*

Richard L. Hindle, UC Berkeley

*Urban Food Systems: Applying Life Cycle Assessment in Built Environments and Aquaponics*

Alex Ianchenko and Gundula Proksch, University of Washington

*Reducing Building Water Use Intensity (WUI): Tools for Academia and Practice*

Courtney Crosson, University of Arizona



12:15 – 1:30pm Lunch

**Mentoring Sessions organized by Robert Dermody**  
**Librarian Consultations**  
Erin Jerome, Open Access & Institutional Repository Librarian,  
University of Massachusetts Amherst  
Location: Commons, John W. Olver Design Building

**STRUCTURES**

Location: DB 162, Moderator: Ulrich Dangel

*Lines of Action: Investigating How Behaviors of Structural Systems Can Be an Informing Agent of Architectural Design*

Sean Burns, Ball State University

*A Student-Centered Active Learning Approach to Teaching Structures in a Bachelor of Architecture Program*

Marjorie Callahan, University of Oklahoma

*Exposed! The Impact of Structural Materiality on the Design of Architecture*

Terri Meyer Boake, University of Waterloo

*Maps, Videos, and Structures: Visualizing Structural Concepts through Media-Based Assignments*

Marci Uihlein, University of Illinois at Urbana-Champaign

**DESIGN/BUILD**

Location: DB 221, Moderator: Clifton Fordham

*Big Glue! Testing the Scalability of Adhesives in Architecture and Design*

Emily White and Erik Sapper, California Polytechnic State University

*Design-Build for Discovery: Applied Research on the Construction Site*

Mary Hardin, The University of Arizona

*Structures for Relief & Resiliency: Enhancing Creative Applications of Technical Acumen through Constrained Conditions*

Rob Whitehead, Iowa State University

**COMPUTATIONAL DESIGN + ANALYSIS**

Location: DB 225, Moderator: Erin Carraher

*Classroom as Laboratory: Engaging Architecture Students in Hands-on Building Science Research*

Gabrielle Brainard, Pratt Institute

*Automated Comprehensiveness: Sectional Practices and the Misuse of Revit*

Jessica Garcia Fritz, South Dakota State University

*Comprehensive BIM Integration For Architectural Education Using Computational Design Visual Programming Environments*

Roger Schroeder, SUNY Alfred State College of Technology

3:00 – 3:15pm: Coffee Break

3:15 - 4:45pm: Afternoon Paper Sessions

**PEDAGOGICAL INNOVATION**

Location: DB 162, Moderator: Patrick Tripeny

*Testing is Teaching Too: Transitioning a Large-Lecture Course from Summative to Formative Exams*

Brian Osborn and Carmen Trudell, California Polytechnic State University

*Writing-in-Action: Teaching Technical Writing through the Lens of the Reflective Practitioner*

Chris Cospo, Ferris State University

*Open Pedagogy for Teaching Structures*

Robert J. Dermody, Roger Williams University

**DESIGN/BUILD DISCUSSION: The Lore, Lessons, and Limits of Building Experience: Challenging Design-Build as Educational Panacea for Architects**

Location: DB 221, Moderators: Rob Whitehead and Shelby Doyle, Iowa State University

**LANDSCAPE/PEDAGOGY**

Location: DB 225, Moderator: Courtney Crosson

*Bridging the Gap Between Architecture and Engineering: a Transdisciplinary Model for a Resilient Built Environment*

Michelle Laboy and Annalisa Onnis-Hayden, Northeastern University

*Water and Land in Flux: Pedagogy for Design Innovations that Inhabit Water*

Niloufar Emami, Louisiana State University

*Transdisciplinarity & Innovation: Smart Materials in Landscape Architecture Education*

Carolina Aragón, University of Massachusetts Amherst

*Applying Nature's Solutions to Architectural Problems*

Jay Yowell, Oklahoma State University

5:00 – 6:00pm

**Cocktail Reception**

Location: UMass Old Chapel

6:00 – 7:00pm

**Closing Keynote**

*Critical Questions for the Future of Sustainability*

Michelle Addington

Dean, School of Architecture, University of Texas at Austin

7:00 – 9:00 pm

**Dinner and Awards Presentations**

Patrick Tripeny, University of Utah

2019 Emerging Faculty Award

Shelby Doyle, Iowa State University

2019 Book Award

Dana Gulling, NC State University, For *Manufacturing*

*Architecture: An Architect's Guide to Custom Processes, Materials, and Applications*

2019 Student Scholarship

Giovanni Florenca, University of Idaho

## Wednesday June 19 Pre-Conference Workshop

### Location

Bensonwood  
6 Blackjack Crossing  
Walpole, NH 03608

### Location

Bensonwood  
25 Production Ave  
Keene, NH 03431



### Bensonwood Walpole Factory Tour

**Speakers:** Chris Carbone, PE (Bensonwood Company Steward)

Learn the uses and applications for Mass Timber. Participants will be able to discuss processing types and their advantages over other construction systems. Participants will also be able to evaluate the cost benefits of mass timber now and in the future. This course will demonstrate one of the important construction methods to be considered for mass timber and lend participants the ability to discern between the main types and variety of mass timber products.

### Bensonwood Keene Factory Tour

**Speakers:** Jay Lepple (Bensonwood Company Steward and Team Leader)

Learn how digital fabrication and lean manufacturing techniques are applied to the construction of panelized enclosures. By following the flow of digital information from computer aided design to computer aided manufacturing, attendees will see how the panels are built with precision and minimal waste. The course will demonstrate how fabricating components in a controlled environment helps to control variables and result in a better product.

## Saturday June 22 Post-Conference Workshops

### Location

Trimble Technology Lab  
UMass Amherst

### Location

R.W. Kern Center  
Hitchcock Center  
Bechtel Environmental Classroom



### Technology in AEC Education: From 3D Modeling to Coding to Laser Scanning

**Speakers:** Alexander Schreyer and Ian Warner (Trimble)

This workshop explores the notion that a technology-centric AEC professional world requires technology as a core component of higher education teaching and learning. UMass is home to the Trimble Technology Lab, which provides our students and faculty with a solution to this demand and serves as a central entity where exchange about various projects is possible. In this half-day workshop, a trainer from Trimble will team up with Alexander Schreyer, Senior Lecturer, and Director of the Trimble Technology Lab, for an overview of technologies like laser scanning and GPS-based navigation and how they can be used in AEC education.

### Living Buildings Tour

**Speakers:** Naomi Darling, Reid Bertone-Johnson (Bechtel Environmental Classroom), Jonathan Wright (Wright Builders, Inc.), Helen McGunnigle (R W Kern Center – student ambassador), Jessica Schultz (Hitchcock Center),

The field trip will take participants to three projects that have attained Living Building Challenge Certification: The Bechtel Environmental Classroom at the Ada & Archibald MacLeish Field Station of Smith College and The Hitchcock Center for the Environment and The Kern Center, both on the Hampshire College campus. At each site, participants will have the opportunity to hear about the daily operation of the Living Buildings and get a full tour including all back of house and mechanical rooms. Jonathan Wright was the contractor on the two buildings on the Hampshire Campus and will be able to speak about some of the specific challenges and rewards of the LBC during the construction process.



**Public University, Public Good**

As a public university, and the first in New England with a public Master of Architecture program, we maintain a focus on an affordable and rigorous architectural education that promotes the public good, and gives access to the widest range of students.

**Truly Interdisciplinary**

Our program was built from the ground up to draw on world-class faculty from the departments of Architecture, Building & Construction Technology, and Landscape Architecture & Regional Planning, who share our building, as well as Civil Engineering, Art & Architecture History, and Studio Arts. This collaborative spirit led Design New England to call us a design education “powerhouse.”

**Innovations in Learning**

Students take advantage of our faculty’s expertise in design thinking, architectural history and theory, high-performance buildings and resilient design, digital fabrication, community engagement, historic preservation, and adaptive reuse.

**A Spectacular New Home**

Named one of the Best Buildings of 2017 by the Wall Street Journal, our new 87,000 square foot building is the most technologically advanced cross-laminated timber building in the country. Your design studies will take place in our interdisciplinary studios, classrooms, workshops, computing, and fabrication labs, and you’ll enjoy our cafe and gallery.

For more information, visit: <http://www.umass.edu/architecture/>



The Department of Architecture prepares students for a rapidly evolving and complex profession and nurtures each student’s critical abilities and creative potential. Our goal is to provide a rigorous and well-rounded education that will prepare students to enter into the broad professional arena.

Our interdisciplinary course of study involves faculty and students from architecture, landscape architecture, regional planning, studio art, art history, building construction and wood technology, engineering, environmental sciences, computer science, and management. Our integrated curriculum of design studios and topical seminars in history, theory, and technology culminates with an independent Master’s Thesis.

**The Department of Architecture offers the following NAAB-accredited degree programs:**

- Three-Year M. Arch for candidates with baccalaureate degrees in any area of study
- Two-Year M. Arch for candidates with pre-professional degrees in architectural studies who may be considered for advanced standing

**Dual Degrees:**

Qualified students can earn a second masters degree in landscape architecture, regional planning, or historic preservation, typically with one additional year of study.

**STEM Designation:**

The Master of Architecture is designated as a STEM program granting enrolled students the opportunity to extend their F-1 visas and gain a STEM OPT extension.



The Building and Construction Technology (BCT) Program provides students with an unrivaled university education, preparing them for rewarding careers in construction management, sustainable building systems, and building materials technology. The program is part of the Department of Environmental Conservation, the College of Natural Sciences, and the School of Earth and Sustainability at UMass Amherst and offers a B.S. major, a minor, as well as a thesis M.S., professional M.S., and a Ph.D. degree.

BCT students enjoy an applied, project-based learning environment while receiving a strong technical and scientific foundation for their future careers. The curriculum combines courses in the sustainable built environment, construction management, building systems, materials, design, and business, all guided by principles of resource efficiency and environmental sensitivity.

In addition to on-campus programs in Amherst, we now also offer continuing education and graduate courses and programs at the new Mount Ida Campus of UMass Amherst in Newton, MA.

The BCT program conducts research in the areas of building systems, bio-based building materials science and engineering, advanced mass timber structures, building energy consumption, and impact of the built environment on climate change. We are equipped with extensive physical and mechanical testing and computing laboratories, library resources, and fabrication shops.

For more information, visit: [bct.eco.umass.edu](http://bct.eco.umass.edu)



Five Colleges, Incorporated is a nonprofit educational corporation established in 1965 to promote the broad educational and cultural objectives of its associated institutions: four private, residential liberal arts colleges and the Amherst campus of the state university. The consortium is an outgrowth of successful collaborations launched in 1914 in educational extension services among nearby colleges and universities and more elaborate collaborations launched in the 1950s among Amherst College, Mount Holyoke College, Smith College, and the University of Massachusetts Amherst, in areas of library subscriptions, joint faculty appointments, public radio, history of science and astronomy. It was expanded in 1966 with the addition of Hampshire College.

Five Colleges, Incorporated promotes and administers long-term forms of cooperation that benefit faculty members, staff members and students. These include:

- Shared use of educational and cultural resources and facilities, including a joint automated library system, open cross registration, and open theater auditions;
- Joint departments and programs;
- Inter-campus transportation.
- Their proximity to one another in the Connecticut River Valley of western Massachusetts favors Five College collaboration, as does their commitment to the liberal arts and to undergraduate education. Five Colleges, Incorporated is a longstanding member of the Association for Consortium Leadership (ACL) [www.national-acl.org](http://www.national-acl.org), a national organization of consortia and consortium leaders.

## BTES Board of Directors

President: Sinead Mac Namara, Syracuse University  
 President-elect: Carmen Trudell, Cal Poly San Luis Obispo  
 Past President: Erin Carraher, University of Utah  
 Secretary: Chad Schwartz, Kansas State University  
 Treasurer: Clifton Fordham, Temple University

Ulrich Dangel, The University of Texas at Austin  
 Robert Dermody, Roger Williams University  
 Patrick Doan, Virginia Tech  
 Hans Herrmann, Mississippi State University  
 Ming Hu, University of Maryland  
 Anne Nichols, Texas A&M University

## History

The Building Technology Educators' Society (BTES) was formed to provide an opportunity for faculty members in Schools and Colleges of Architecture teaching in the areas of structures, construction, and technology an opportunity to meet and share teaching ideas, pedagogies, and research. The first official BTES conference took place at the College of Architecture at the University of Maryland in August 2006. The organization legally incorporated as a 501(c)(3) nonprofit organization in March 2008.

## Mission

The BTES is an organization of architectural educators, passionate about teaching the technology of building design and construction. The mission of BTES is to promote and publish the best pedagogic practices, relevant research, scholarship, and other creative activity to facilitate student learning, advance innovation, and enhance the status of building technology disciplines in the profession at large.

## Membership

The BTES maintains regular membership of 100+ faculty representing schools and colleges across the continent and around the globe. The organization is inclusive of full as well as part-time and adjunct faculty from accredited degree programs as well as community colleges and trade schools. As part of its five-year strategic plan, the organization has a goal to increase membership through expansion of representation to all ACSA member programs.

## BTES seeks to:

- promote and share the best architectural technology teaching practices among all who are concerned with effective teaching in these subject areas
- foster critical discourse and the scholarship of teaching on issues related to pedagogic theory in architectural technology through peerreviewed publications of its work for public dissemination
- enhance the mentoring process among faculty, students, and practitioners for the enrichment of all involved and for the preservation and propagation of accumulated experience and wisdom
- stress the issues concerning technology in architectural curricula to help influence change when necessary in the related accreditation process
- support the continued betterment of the profession by serving as a point of contact for the discussion of issues related to building technology with the design professions and building industry at large
- bring issues of concern to affiliated entities in the academy, profession industry, and associated regulatory agencies, and
- facilitate connections among like-minded individuals for collaborative research.

## 2019 Conference Organizers

Caryn Brause Associate Professor, Department of Architecture, University of Massachusetts Amherst

Peggi L. Clouston Associate Professor, Building and Construction Technology Program, University of Massachusetts Amherst

Naomi Darling Assistant Professor of Sustainable Architecture, Mount. Holyoke College // University of Massachusetts Amherst

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### Login instructions for the wireless network:

- In the WiFi settings on your phone/computer/tablet select the UMASS network
- Open up a web browser (IT suggests using Safari or Firefox)
- Manually type in the address bar: <http://www.umass.edu>
- Either a page telling you that this site is unsecure will present itself OR the UMass wireless login page will appear
- If it is a page telling you the website is unsecure, click "More Details" or "Advanced" at the bottom and click on the link to visit the page anyway
- You should then be on the UMass wireless network login page
- Enter the credentials below  
Guest ID: 43598885  
Password: 89067815

*(IT recommends that you save the guest ID and password in your browser to shorten the process for future logins)*

- The UMass home page should load and from this point you can type in any search query/website name you wish to visit

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