



53<sup>rd</sup> Annual ASC International Conference  
April 5-8, 2017 | Seattle, Washington

ASSOCIATED SCHOOLS OF CONSTRUCTION

# CONFERENCE PROGRAM 2017



HOSTED BY THE  
UNIVERSITY OF WASHINGTON AND WASHINGTON STATE UNIVERSITY

# Program At-a-Glance

## Wednesday, April 5, 2017

12:00 - 5:00	<i>Registration - Fourth Floor Foyer</i>					
location	<b>Blue Mouse Brd Rm</b>	<b>First Hill</b>	<b>Belltown</b>	<b>Seattle 1</b>	<b>Pioneer</b>	<b>Capitol Hill</b>
1:00 - 4:30	Pre-Conference Board Meeting 8AM-1PM	Pre-Conference Workshop BIM in the Classroom	Pre-Conference Workshop Academic Leadership	Pre-Conference Workshop Asta Scheduling Training	Pre-Conference Workshop ACCE Accreditation Student Outcomes	Pre-Conference Workshop Facilities Mgmt Discussion
5:00 - 7:00	<b>Welcome Reception: Dean John Schaufelberger, UW and Dean Don Bender, WSU - Frolik on the 5th Floor</b>					



## Thursday, April 6, 2017

7:00 - 4:45	<i>Registration - Fourth Floor Foyer   Exhibits - Third Floor Foyer   Posters - Emerald Ballroom 3</i>							
7:00 - 8:00	<i>Breakfast - Emerald Ballroom 1</i>							
7:30-8:00	<i>Moderator Meeting - Belltown - Kamran Nemati</i>							
8:00 - 9:30	<i>Welcome, Opening Address WSU Provost Bernardo, and Keynote Speaker Dan Barrett, Sellen Constuction</i>							
9:30 - 9:40	<i>Networking Break - Third Floor Foyer</i>							
location	<b>Seattle 1</b>	<b>Seattle 2</b>	<b>Seattle 3</b>	<b>Emerald 2</b>	<b>Pioneer</b>	<b>Belltown</b>	<b>Capitol Hill</b>	<b>First Hill</b>
9:40 - 10:30	Paper Sessions						ABET Accreditation	Industry Relations
10:30 - 10:45	<i>Networking Break - Third Floor Foyer</i>							
10:45 - 11:55	Paper Sessions						ACCE Accreditation	Education
12:00 - 1:30	<i>Lunch, Regional Teaching &amp; Excellence in Teaching Awards, and Keynote Speaker (Howard S. Wright) - Emerald Ballroom 1</i>							
1:30 - 1:45	<i>Networking Break - Third Floor Foyer</i>							
location	<b>Seattle 1</b>	<b>Seattle 2</b>	<b>Seattle 3</b>	<b>Emerald 2</b>	<b>Pioneer</b>	<b>Belltown</b>	<b>Capitol Hill</b>	<b>First Hill</b>
1:45 - 2:45	Region 1	Region 2	Region 3	Region 4	Region 5	Region 6 & 7		International Region
2:45 - 3:00	<i>Networking Break - Third Floor Foyer</i>							
3:00 - 4:45	Paper Sessions							

## Friday April 7, 2017

7:30 - 4:15	<i>Registration - Fourth Floor Foyer   Exhibits - Third Floor Foyer   Posters - Emerald Ballroom 3</i>							
7:30 - 8:45	<i>Sigma Lamda Chi Breakfast - Emerald Ballroom 1</i>							
8:45 - 9:00	<i>Networking Break - Third Floor Foyer</i>							
location	<b>Seattle 1</b>	<b>Seattle 2</b>	<b>Seattle 3</b>	<b>Emerald 2</b>	<b>Pioneer</b>	<b>Belltown</b>	<b>Capitol Hill</b>	<b>First Hill</b>
9:00 - 10:15	Paper Sessions						Professional Development	Publications
10:15 - 10:40	<i>Networking Break - Third Floor Foyer</i>							
location	<b>Seattle 1</b>	<b>Seattle 2</b>	<b>Seattle 3</b>	<b>Emerald 2</b>	<b>Pioneer</b>	<b>Belltown</b>	<b>Capitol Hill</b>	<b>First Hill</b>
10:40 - 11:55	Paper Sessions						Mechanical & Electrical	International Development
12:00 - 1:45	<i>Lunch, Outstanding Educator, Outstanding Researcher, Best Paper and Best Poster Awards, and Keynote Speaker (Swinerton) - Emerald Ballroom 1</i>							
1:45 - 2:00	<i>Networking Break - Third Floor Foyer</i>							
	<b>Curriculum and Other Topics of Interest</b>							
location	<b>Seattle 1</b>	<b>Seattle 2</b>	<b>Seattle 3</b>	<b>Emerald 2</b>	<b>Pioneer</b>	<b>Belltown</b>	<b>Capitol Hill</b>	<b>First Hill</b>
2:00 - 3:00	BIM in the Classroom-Dossick	Safety Ken-Yu Lin	Scheduling Ahmed Aziz	Construction Law Greg Starzyk	Project Management	Trimble	Grad Program Curriculum	Information Technology
2:30	Bullitt Center Tour 1501 E Madison St, Seattle, WA 98122 Yong Kim (transportation <b>NOT</b> provided)							
3:00 - 3:15	<i>Networking Break - Third Floor Foyer</i>							
3:15 - 4:15	Estimating Software	Estimating Chris Lee	Mechanical	Capstone Rick Cherf	Temp Structures Kamran Nemati	Bluebeam Emily Heppard	Comparison of 4 Scheduling Softwares	Industry Advisory Committees
4.15 - 5:00	<i>Break</i>							
5:00 - 8:00	<b>BANQUET &amp; LIFE TIME ACHIEVEMENT AWARD CEREMONY - Tilicum Village</b>							

## Saturday, April 8, 2017

8:00 - 9:00	<i>Breakfast and ASC Business Meeting - Emerald Ballroom 1</i>							
9:00 - 11:00	<i>Post Conference Board Meeting - Blue Mouse Boardroom</i>							

# CONFERENCE COORDINATORS

## Welcome to the 2017 ASC Conference!

Welcome to the Pacific Northwest!

We have a great opportunity to learn, rekindle old friendships, and establish new relationships over the next few days. The theme of our conference is “Construction, Communication, and Collaboration.” We practice what we preach: this conference is being hosted by both Washington State University and the University of Washington. We thank you for attending and sincerely hope that you will enjoy your time here.

The keynote address and other presentations focus on the theme of working together within the context of the AEC community. We are especially pleased to have so many distinguished industry practitioners present to share their experiences with you.

The heart of the conference is the paper and poster presentations, but please be sure to attend the ASC meetings, curriculum sessions, and networking opportunities.

Our Friday night banquet consists of a boat cruise and dinner at the Native American themed Tillicum Village. This event honors our distinguished educator and provides a unique and entertaining perspective on our regional culture.

The host venue’s location was specifically chosen to allow for attendees to walk to the many attractions available nearby. Please make it a point to get to the Pike Place Market, Space Needle, and waterfront. See the hotel staff for other points of interest that are either a walk or a short Uber ride away.

From the faculty, students, and staff of Washington State University and the University of Washington, it is our pleasure to host you in our region. Please seek us out if we can be of any assistance.

**Bill Bender**

**David Gunderson**

## Welcome from the 2017 ASC President



Welcome to the Associated Schools of Construction 53rd Annual International Conference. Thank you to our Conference Chairs, Bill Bender, University of Washington and David Gunderson, Washington State University. They have spent many hours creating a conference program that is sure to meet everyone's expectations for a wonderful week of sharing ideas, networking, and strengthening and creating friendships.

The conference will provide a variety of workshops, poster presentations, and paper sessions led by a diverse faculty who are experts in the development and advancement of construction education. This is a great opportunity to hear about the work your colleagues are doing to promote excellence in curricula, teaching, research, and service.

The Opening Reception on Wednesday, April 5 begins at 5:00 PM at the Motif Seattle, providing an opportunity for networking and socializing. Throughout the week there will be Keynote Presentations, Paper Presentations, Committee Meetings, and Regional Meetings. On Friday, April 7 at 7:30 AM, the Sigma Lambda Chi Convention and Breakfast begins.

Friday evening the Banquet and Life-Time Achievement Award Ceremony will take place at Tillicum Village. The Tillicum Village is a Puget Sound area visitor attraction located on Blake Island just off the shore of Seattle, WA. Don't miss the ferry! For all the conference events, times, and locations, please see inside this program.

The strength of the ASC is derived from the dedication, commitment, and passion for advancing and developing construction higher education that all of our members share. The ASC Leadership, made up of the executive board, regional directors, and appointed officers, is the workhorse of our organization. Be sure to find the time to meet and thank this talented team of volunteers and join the leadership by serving on committees and participating at regional events.

Thank you for attending the ASC conference and bringing your expertise to this event. As leaders in construction you have the vision, the knowledge, and the experience to keep our members informed on emerging trends and future change in construction practices. With your support, the ASC will continue to be the most recognized organization dedicated to providing their membership with opportunities for professional development in research, education, and service. On behalf of the entire Board of Directors and Conference Committee, we wish you all a successful conference experience and a great time while you are in Seattle!

A handwritten signature in black ink that reads "Lori A. Brown". The signature is written in a cursive, flowing style.

Lori A. Brown  
President  
Associated Schools of Construction

# ASC BOARD OF DIRECTORS

## **President**

Lori A Brown  
California State University  
Phone: 530.898.3279  
[labrown2@csuchico.edu](mailto:labrown2@csuchico.edu)

## **1st Vice President**

David E Gunderson  
Washington State University  
Phone: 509.335.6294  
[dgunderson@sdsc.wsu.edu](mailto:dgunderson@sdsc.wsu.edu)

## **2nd Vice President**

Ben Farrow  
Auburn University  
Phone: 334.844.4586  
[farrocb@auburn.edu](mailto:farrocb@auburn.edu)

## **Secretary**

Lloyd Scott  
Dublin Institute of Technology  
Phone: 0035314023984  
[lloyd.scott@dit.ie](mailto:lloyd.scott@dit.ie)

## **Northeast Regional Director**

*Region 1*  
Michael J Emmer  
Roger Williams University  
Phone: 401.254.3864  
[memmer@rwu.edu](mailto:memmer@rwu.edu)

## **Southeast Regional Director**

*Region 2*  
Javier Irizarry  
Georgia Institute of Technology  
Phone: 4043857609  
[javier.irizarry@coa.gatech.edu](mailto:javier.irizarry@coa.gatech.edu)

## **Great Lakes Regional Director**

*Region 3*  
Mohamed A El-Gafy  
Michigan State University  
Phone: 517.432.6512  
[elgafy@msu.edu](mailto:elgafy@msu.edu)

## **North Central Regional Director**

*Region 4*  
Richard J Gebken  
Missouri State University  
Phone: 417.836.5270  
[richardgebken@missouristate.edu](mailto:richardgebken@missouristate.edu)

## **South Central Regional Director**

*Region 5*  
Heather Yates  
Oklahoma State University  
Phone: 405.744.8710  
[heather.yates@okstate.edu](mailto:heather.yates@okstate.edu)

## **Rocky Mountain Regional Director**

*Region 6*  
Scott Glick  
Colorado State University  
Phone: 970.491.1802  
[scott.glick@colostate.edu](mailto:scott.glick@colostate.edu)

## **Far West Regional Director**

*Region 7*  
Philip Barlow  
California Polytechnic State University  
Phone: 805.756.2797  
[plbarlow@calpoly.edu](mailto:plbarlow@calpoly.edu)

## **International Regional Director**

*Region 8*  
Nick Morton  
Birmingham City University  
Phone: 0044.121.331.7502  
[nick.morton@bcu.ac.uk](mailto:nick.morton@bcu.ac.uk)

## **Treasurer**

Jay Christofferson  
Brigham Young University  
Phone: 801.422.6302  
[jay\\_christofferson@byu.edu](mailto:jay_christofferson@byu.edu)

## **Information Manager**

Maggie Glick  
Associated Schools of Construction  
Phone: 970.818.1041  
[info@ascweb.org](mailto:info@ascweb.org)

## **Webmaster**

Carlos M. Sterling  
The University of Southern Mississippi  
Phone: 601.520.2260  
[kableman26@yahoo.com](mailto:kableman26@yahoo.com)

## **Journal Editor**

Andrew P McCoy  
Virginia Tech  
Phone: 540.449.1861  
[apmccoy@vt.edu](mailto:apmccoy@vt.edu)

## **Proceedings Editor**

Tulio A Sulbaran  
The University of Southern Mississippi  
Phone: 601.266.6419  
[tulio.sulbaran@usm.edu](mailto:tulio.sulbaran@usm.edu)

## **Finance Manager**

Maggie Glick  
Associated Schools of Construction  
Phone: 970.818.1041  
[finance@ascweb.org](mailto:finance@ascweb.org)



# 2017 ASC LIFETIME ACHIEVEMENT AWARD



## Wesley "Wes" Crawford

The ASC is pleased to announce that Wesley "Wes" Crawford is the recipient of the 2017 Lifetime Achievement Award.

The following excerpts are taken from the many letters submitted to the ASC Board of Directors in support of Professor Crawford's nomination.

**"Professor Crawford's area of expertise is field engineering. His book, entitled "Construction Surveying and Layout: A Step-by-Step Field Engineering Methods Manual," with over 30,000 copies sold, has made a dynamic impact on the construction industry. I remember several occasions when contractors told me that students graduating from Purdue with Wes's class had the best possible professional preparation in the area of layout and field engineering."**

"In addition to being an outstanding professor who cares about educating his students and ensuring they are ready for the work place, Wes has maintained his ties to industry as well. He has worked summers for Peter Kiewit and Sons' on a number of occasions, as well as for other companies teaching us sound surveying techniques, and learning current workplace needs from us, as well as current methods that we may have developed outside academia. Further, Wes has visited his students doing internships with us, as well staying in touch and ensuring that their internships are productive. Wes' knowledge of the industry is further demonstrated by the books he has published and that Kiewit has bought and used to train our surveyors. That one of the largest construction companies in the United States and the largest heavy and highway contractor would use his books to train our own people is a huge compliment and testimony to his impact on students and on the industry."

"It is a pleasure to provide this letter in support of Wesley Crawford's nomination for the Associated Schools of Construction Lifetime Achievement Award. I have known Wes since my early years in construction education, and I can say that Mr. Crawford is a major contributor to construction education and the profession in general. He has earned the respect and admiration of his students and peers throughout his years of effective instruction and leadership. His passion brings education and the industry together to develop the next generation of construction professionals."

**"Wes' career has been devoted to successfully preparing students for work inside the construction industry. I am an example of how he has successfully done it, as are the many other Purdue Construction graduates that we have hired over the years."**

"Wesley Crawford has had several leadership roles and received various awards for excellence in teaching, including the first ever National Outstanding Educator award from the Associated Schools of Construction. He has held leadership roles in national construction education organizations including President of both the Associated Schools of Construction and Sigma Lambda Chi. Ultimately he became president of each of these two organizations, an accomplishment which required membership and leadership on many committees of the organizations. In addition, he has been on the Board of Directors for the Association of Honor Societies and President of Indiana Society of Professional Land Surveyors, Tecumseh Chapter."

## **ASC Lifetime Achievement Award**

Wesley G. Crawford, Purdue University

## **ASC Outstanding Educator Award**

*Region 3*

Blake Wentz, Milwaukee School of Engineering

*Region 7*

Gregory F. Starzyk, California Polytechnic State University, San Luis Obispo

*Region 8*

Sonya Meekel, Dublin Institute of Technology

## **ASC Outstanding Researcher Award**

*Region 2*

Baabak Ashuri, Georgia Tech

## **ASC Excellence in Teaching Award**

*Region 2*

Joseph Michael Burgett, Clemson University

*Region 3*

Lee Templin, Ferris State University

*Region 4*

Katie Z. Loughmiller, Kansas State University

*Region 5*

Ben F. Bigelow, Texas A & M University

*Region 6*

Michael Sessions, Brigham Young University

*Region 7*

Jinsung Cho, California State Polytechnic University, Pomona

*Region 8*

Edward John Kirke, Liverpool John Moores University

## **ASC Regional Teaching Award**

*Region 2*

Keith Rahn, Auburn University

*Region 3*

Chengyi Zhang, Eastern Kentucky University

*Region 4*

Curtis Bradford, University of Central Missouri  
Jacob A. Nelson, Missouri State University  
Jim Vaux, University of Nebraska – Kearney

*Region 5*

Matthew Reyes, University of Oklahoma  
George N. Eustace, Texas A & M University

*Region 6*

Justin Weidman, Brigham Young University

## **Best Paper Award**

*A Comparison of Realized Benefits of BIM Implementation on Commercial Building and Parking Garage Projects*

Jonathan W. Elliott, Colorado State University  
Svetlana Olbina, Colorado State University  
Manikandan Natesan, Colorado State University

## **Honorable Mention**

*Linking Contractor Planning and Risk Prediction to Project Performance*

Kristen Hurtado, Arizona State University  
Kenneth Sullivan, Arizona State University  
Anthony Perrenoud, University of Oklahoma  
Jake Smithwick, University of North Carolina at Charlotte

## **ASC Out-Going Leadership**

**Journal Editor**

David E. Gunderson, Washington State University  
2009 – 2015

**Director of Region 2**

Javier Irizarry, Georgia Institute of Technology  
2014-2017

**Director of Region 5**

Heather Yates, Oklahoma State University  
2014-2017

# CONFERENCE SCHEDULE

Wednesday April 5, 2017			
12:00 - 5:00	<i>Registration - Fourth Floor Foyer</i>		
	<b>Blue Mouse Boardroom</b>	<b>First Hill</b>	<b>Belltown</b>
1:00 - 4:30	Pre-Conference Board Meeting 8AM-1PM	Pre-Conference Workshop BIM in the Classroom Carrie Dossick & Anne Anderson	Pre-Conference Workshop Academic Leadership Richard Burt
5:00 - 7:00	<b>Welcome Reception: Dean John Schaufelberger, UW and Dean Don Bender, WSU - Frolik on the 5th Floor</b>		
Thursday, April 6, 2017			
7:00 - 4:45	<i>Registration - Fourth Floor Foyer   Exhibits - Third Floor Foyer   Posters - Emerald Ballroom 3</i>		
7:00 - 8:00	<i>Breakfast - Emerald Ballroom 1, Procore, Darryl Kysar</i>		
7:30 - 8:00	<i>Moderator Meeting - Belltown - Kamran Nemati</i>		
8:00 - 9:30	<i>Welcome, Opening Address WSU Provost Bernardo, and Keynote Speaker Dan Barrett, Sellen Constuction</i>		
9:30 - 9:40	<i>Networking Break - Third Floor Foyer</i>		
	<b>Track 1 (Education) Seattle 1</b>	<b>Track 2 (Education) Seattle 2</b>	<b>Track 3 (Practice) Seattle 3</b>
9:40 - 10:30	Paper Session 1 Moderators: Caroline Clevenger & Wei Wu	Paper Session 2 Moderators: Baabak Ashuri & Asregedew Woldesenbet	Paper Session 3 Moderators: Anthony Perronoud & Philip Barlow
	A Case Study in Developing an Integrated Project Delivery (IPD) Course  Ehsan Mousavi & Kevin Grosskopf	A Comparison between Mini-mester and Full Semester Achievement in a Construction Surveying Course Kenneth Williamson III	A Closer Look at How LEED Buildings Achieved Sustainability  Prateek Jain
	Design and Delivery of an Online Graduate Course in Risk Management Using Significant Learning and Just-in-Time Teaching Approach  Kamalesh Panthi & Mohamed F. Diab	Construction Management Academy Career Exploration Program: Strategy for Recruitment of Under-Represented Minority Groups  Edelmiro Escamilla & Mohammadreza Ostadalimakhmalbaf	Analyzing the Aging Housing Stock for Energy Consumption and Retrofit Using Assessor and Historical Utility Data  Nate Barry, Eric Holt & Scott Kelting
10:30 - 10:45	<i>Networking Break - Third Floor Foyer</i>		
10:45 - 11:55	Paper Session 7 Moderator: Clinton Aigbavboa	Paper Session 8 Moderator: Lloyd Crask	Paper Session 9 Moderator: Cristina Cosma
	Construction Faculty's Perception of the American Council for Construction Education's Bachelor Degree Student Learning Outcomes  Mohammed H. Mehany & Richard Gebken	ASC Student Competition: Team Preparation and Benefits to the Careers of Participants Now Employed in the Construction Industry  David Carns & P. Warren Plugge	Payment Clauses for Subcontractors Vary With States  Khalid Siddiqi & Juan Franco
	Opportunities of CM Curriculum Improvement through ABET Student Learning Outcomes  Aiyin Jiang et al	Advisory Board Feedback on Construction Education Learning Outcomes  Caroline Clevenger et al	Virtual Reality-based Personalized Learning Environment for Repetitive Labor-intensive Construction Tasks Sudip Subedi et al
12:00 - 1:30	<i>Lunch, Regional Teaching &amp; Excellence in Teaching Awards, and Keynote Speaker (Howard S. Wright) Emerald Ballroom 1</i>		
1:30 - 1:45	<i>Networking Break - Third Floor Foyer</i>		
	<b>Track 1 (Education) Seattle 1</b>	<b>Track 2 (Education) Seattle 2</b>	<b>Track 3 (Practice) Seattle 3</b>
1:45 - 2:45	Region 1 Meeting	Region 2 Meeting	Region 3 Meeting
2:45 - 3:00	<i>Networking Break - Third Floor Foyer</i>		
3:00 - 4:45	Paper Session 13 Moderator: Michalle Herrmann	Paper Session 14 Moderator: Mike Jackson	Paper Session 15 Moderator: Edward Keeter
	GPA and Construction Competition Participation as Indicators for Future Career Success of XXXXX Construction Management Students Josh Gleason et al	The Development of a Blended Learning Model to Deliver Construction Science Teaching Tim Lees	Integration of Geotagged Photos with BIM  Pavan Meadati & Parminder Juneja
	Impact of Participation in the ASC Students' Competition on Students' Motivation to Learn  Euysup Shim	Project IMPACT: Developing a Manufactured Construction Workforce through Contextualized Training Arefeh Mohammadi & Kevin Grosskopf	Building Information Modeling Implementation for Facilities Management on U.S. University Campuses Jason Lucas & Sai Eshware Addagalla
	Student Learning through the Competition Experience  Sonya Keekel & Angela Kilby	The Technology Conundrum: Faculty Perspectives of Opportunities and Challenges when Implementing Technology in a Thomas Leathem & Emily McGlohn	Lessons Learned from a BIM-Enabled, Multi- Disciplinary Global Team Student Project  Anne Anderson et al
	Selection of communication media by design and construction personnel for problem- solving Luciana de Cresce El Debs & Mark Shaurette		



# CONFERENCE SCHEDULE

Wednesday, April 5 (continued)					
12:00 - 5:00	<i>Registration - Fourth Floor Foyer</i>				
	<b>Seattle 1</b>	<b>Pioneer</b>	<b>Capitol Hill</b>		
1:00 - 4:30	Pre-Conference Workshop Asta Scheduling Training Curt Corrigan	Pre-Conference Workshop ACCE Accreditation Student Outcomes Tom Leathem	Pre-Conference Workshop Facilities Management Discussion Michael Bown		
5:00 - 7:00	<b>Welcome Reception: Dean John Schaufelberger, UW &amp; Dean Don Bender, WSU - Frolik, 5th Floor</b>				
Thursday, April 6 (continued)					
7:00 - 4:45	<i>Registration - Fourth Floor Foyer   Exhibits - Third Floor Foyer   Posters - Emerald Ballroom 3</i>				
7:00 - 8:00	<i>Breakfast - Emerald Ballroom 1, Procure, Darryl Kysar</i>				
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9:30 - 9:40	<i>Networking Break - Third Floor Foyer</i>				
	<b>Track 4 (Practice) Emerald 2</b>	<b>Track 5 (Practice) Pioneer</b>	<b>Track 6 (Practice) Belltown</b>	<b>Committee Meetings Capitol Hill   First Hill</b>	
9:40 - 10:30	Paper Session 4 Moderator: Joe Burgett and Scott Glick	Paper Session 5 Moderator: Wesley Collins & Mohammed H. Mehany	Paper Session 6 Moderator: Rodolfo Valdes-Vasquez & Tulio Sulbaran	ABET Accreditation	Industry Relations
	Comparing Cooling of Hot Mix and Warm Mix Asphalts  Jongchul Song & Syed Owais Ahmed	Investigating Causes of Delay in U.S. Construction Projects  Mohammad Soroush Tafazzoli & Pramen Prasad-Shrestha	Improving Student Estimating Accuracy through Hands-On Learning: A Case Study Wesley Collins & Lauren Redden		
	Finite Element Analysis to Evaluate the effect of Freeze- Thaw Cycles in Low Temperature Resistance in Asphalt Pavements Cristina Martin Linares & Chun-Hsing Ho	A Decision Support Framework for Extension of Time Claims  Hendrik Prinsloo & Timus Maritz	An Evaluation of Engineer's Estimates for Transportation Projects: A Michigan Case Study  Mohamed El-Gafy & Amine Ghanem		
10:30 - 10:45	<i>Networking Break - Third Floor Foyer</i>				
10:45 - 11:55	Paper Session 10 Moderator: Jonathan Elliot	Paper Session 11 Moderator: Michael Emmer	Paper Session 12 Moderator: Clifton Farnsworth	ACCE Accreditation	Education
	An Analysis of Construction Overhead Expenses During the "Great Recession"  Jake Smithwick et al	Labor Productivity Frontier: A Case Study of Two Crews  Nirajan Mani et al	An Organizational Construction Ethics Maturity Model: The Integration of Process and Values  Steven McCrary & Lynn Godkin		
	A Case Study Focused on General Contractors Doing More Self- Performed Work David Gunderson & Justin Reginato	Identifying the Global Performance of the Construction Industry  Alfredo Rivera et al	Expert System for Construction Scheduling Decision Support Based on Travelling Salesman Problem Tulio Sulbaran		
12:00 - 1:30	<i>Lunch, Regional Teaching &amp; Excellence in Teaching Awards, and Keynote Speaker (Howard S. Wright) Emerald Ballroom 1</i>				
1:30 - 1:45	<i>Networking Break - Third Floor Foyer</i>				
	<b>Track 4 (Practice) Emerald 2</b>	<b>Track 5 (Practice) Pioneer</b>	<b>Track 6 (Practice) Belltown</b>	<b>Committee Meetings Capitol Hill   First Hill</b>	
1:45 - 2:45	Region 4 Meeting	Region 5 Meeting	Region 6 & 7 Meeting		Int'l Region Meeting
2:45 - 3:00	<i>Networking Break - Third Floor Foyer</i>				
3:00 - 4:45	Paper Session 16 Moderator: Jeff Kim	Paper Session 17 Moderator: Sangwook Lee	Paper Session 18 Moderator: Hendrik Prinsloo	Program Chair Roundtable	Research
	Carbon Dioxide Equivalency as a Sustainability Criterion for Bridge Design Alternatives  Vaishak Gopi et al	The Effective Return on Investment for the Contractor Building a High Performance Versus Code Compliant Single Family Dwelling  Shima Clarke & Edward Gregory	Considerations for Mixed-Use Development for Construction Managers  Jamie Metzinger		
	Implementation of LEED NC (v.2009 and v.4) and Its Effect on Costs in the U.S. Construction Industry  Rachel Mosier et al	Perceived Value of Energy Conservation Investments in Residential Construction  Jessica Napier & Salman Azhar	Punch List Items Relationships on a Hospitality Project  Seong Jin Kim et al		
	LEED-PtD Pilot Credit: Trajectories for PtD  Suchismita Bhattacharjee	Social Sustainability Indicators in Mass Housing Construction  Ali Karji & Asregedew Woldeesenbet	The Cost Effectiveness of Alpha SPF Roofs: Casa View Elementary School Roofing Case Study Dean Kashiwagi et al		

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	<b>Track 1 (Education) Seattle 1</b>	<b>Track 2 (Education) Seattle 2</b>	<b>Track 3 (Practice) Seattle 3</b>
9:00 - 10:15	Paper Session 19 Moderator: Keith Rahn & Yupeng Luo	Paper Session 20 Moderator: Nirajan Mani & Heather Yates	Paper Session 21 Moderator: Giovanni Migliaccio
	Integrating Composition Skills within Constructicon Curricula: A Pilot Study  John Killingsworth et al	A University-based Summer Camp to promote Construction Technology Career for High School Students  Armando Carrasquillo et al	Challenges with BIM Implementation: A Review of Literature  Andrew Criminale & Sandeep Langar
	Investigating Relationships Between Admission Criteria and Performance in a Construction Management Program  Yong-Woo Kim & Bill Bender	A Preliminary Review of Building Information Modeling (BIM) Tertiary Education in the Province of Ontario  Christopher Willis & Tulsı Regmi	Challenges in the Building Information Modeling (BIM)/3D Trade Coordination Process  Qian Chen & Hongsen Shi
	Construction Management Curriculum Transformation through Project-Based Learning; Part 1 of a Progressive Case Study  Bradley Benhart et al	Investigating Students' Perception Using Construction Management Simulations  Saeed Rokooei et al	4D Scheduling: A Visualization Tool for Construction Field Operations  Alexandra Romigh et al
10:15 - 10:40	Networking Break - Third Floor Foyer		
	<b>Track 1 (Education) Seattle 1</b>	<b>Track 2 (Education) Seattle 2</b>	<b>Track 3 (Practice) Seattle 3</b>
10:40 - 11:55	Paper Session 25 Moderator: Mohammadreza Ostadalimakhmalbaf	Paper Session 26 Moderator: Lauen Redden	Paper Session 27 Moderator: Nipesh Pradhananga
	SAT and ACT Scores as Predictors of Undergraduate GPA Scores of Construction Science and Management Students  Joel Ochieng Wao et al	Lessons Learned in Helping Develop and Use a Quality of Assessment Rubric for Construction Program Learning Outcomes Assessment  C. Ben Farrow et al	A Comparison of Realized Benefits of BIM Implementation on Commercial Building and Parking Garage Projects  Jonathan Elliott et al
	Sustainability Principles within a Construction Education Curriculum Based on Student Learning Outcomes  Keith Rahn	Comparing Construction Managers and Civil Engineers Based on the Occupational Outlook Handbook  Richard Burt & Audrey Tinker	The Challenges of Using BIM in Construction Dispute Resolution Process  Zohreh Soltani et al
	Sustainable Behavior and Social Responsibility among College Students  Younghan Jung et al	Industry and Academic Partnerships to Improve Construction Education  Daphene Koch & Lauren Evans	BIM Practices of Commercial MEP Contractors  Clifton Farnsworth et al
12:00 - 1:45	Lunch, Outstanding Educator & Researcher, Best Paper & Best Poster Awards; Keynote (Swinerton)- Emerald Ballroom 1		
1:45 - 2:00	Networking Break - Third Floor Foyer		
	<b>Curriculum and Other Topics of Interest</b>		
	<b>Seattle 1</b>	<b>Seattle 2</b>	<b>Seattle 3</b>
2:00 - 3:00	BIM in the Classroom - Carrie Dossick	Safety Ken-Yu Lin	Scheduling Ahmed Aziz
2:30 pm	Bullitt Center Tour 1501 E Madison St, Seattle, WA 98122 Yong Kim (transportation <b>NOT</b> provided)		
3:00 - 3:15	Networking Break - Third Floor Foyer		
3:15 - 4:15	Estimating Software	Estimating - Chris Lee	Mechanical
4.15 - 5:00	Break		
5:00 - 8:00	<b>BANQUET &amp; LIFE TIME ACHIEVEMENT AWARD CEREMONY - Tilicum Village</b>		
Saturday April 8, 2017			
8:00 - 9:00	Breakfast and ASC Business Meeting - Emerald Ballroom 1		
9:00 - 11:00	Post Conference Board Meeting - Blue Mouse Boardroom		

# CONFERENCE SCHEDULE

Friday, April 7 (continued)					
7:30 - 4:15	<i>Registration - Fourth Floor Foyer   Exhibits - Third Floor Foyer   Posters - Emerald Ballroom 3</i>				
7:30 - 8:45	<i>Sigma Lamda Chi Breakfast - Emerald Ballroom 1</i>				
8:45 - 9:00	<i>Networking Break - Third Floor Foyer</i>				
	<b>Track 4 (Practice) Emerald 2</b>	<b>Track 5 (Practice) Pioneer</b>	<b>Track 6 (Practice) Belltown</b>	<b>Committee Meetings Capitol Hill      First Hill</b>	
9:00 - 10:15	Paper Session 22 Moderator: Nick Morton	Paper Session 23 Moderator: Rachel Mosier	Paper Session 24 Moderator: Svetlana Olbina	Professional Development	Publications
	Fall-Related Construction Fatalities: An Analysis of Fatalities Investigations Report  Kamalesh Panthi et al	UAVs in Construction  Mark Tatum and Junshan Liu	Production Planning Using Location Based Management and 'Takt' Time: A Postmortem and Premortem  Somik Ghosh & Matthew Reyes		
	Sloped Roof Fall Protection: A Case Study of the Development of a Portable Fall Protection Anchor Device  Robert Bugg & Paul Holley	Potential Unmanned Aerial Systems Based Operations within a Dept. of Trans.: Findings from a Focus Group Study  Javier Irizarry et al	Linking Contractor Planning and Risk Prediction to Project Performance  Kristen Hurtado et al		
	Determining Safety Frontier for Repetitive Labor-intensive Operations: A Theoretical Approach  Nipesh Pradhananga et al	A Comparison of Unmanned Aerial Vehicle Regulations in the United States and Europe  Michele Herrmann	Research Opportunities for Construction Industry Project Level Productivity Management Tools  Thomas Mills & Somik Ghosh		
10:15 - 10:40	<i>Networking Break - Third Floor Foyer</i>				
	<b>Track 4 (Practice) Emerald 2</b>	<b>Track 5 (Practice) Pioneer</b>	<b>Track 6 (Practice) Belltown</b>	<b>Committee Meetings Capitol Hill      First Hill</b>	
10:40 - 11:55	Paper Session 28 Moderator: Ken-Yu Lin	Paper Session 29 Moderators: Tom Rogers & Bolivar Senior	Paper Session 30 Moderators: Jongchul Song & Anne Marie Sowder	Mechanical and Electrical	International Development
	Prevention through Design (PtD) in AEC Programs: Educators' Perspective  Somik Ghosh et al	The Introduction of the Best Value Approach Across Europe  Dean Kashiwagi & Isaac Kashiwagi	Benchmarking Snapshot in the Operation and Maintenance of Constructed Facilities  Jake Smithwick et al		
	Evaluation of Self-Modifications to Hand Tools in the Construction Industry  Eric Wetzel et al	Assessment of Qualitative Factors Influencing Contractors Tender and Project Success in an Emerging Economy  Ayodeji Oke et al	Identifying the Weights Assigned to the Key Bidding Factors by Different Groups of Construction Companies  Duygu Akalp & Mehmet Ozbek		
	Construction accident tort cases: mathematical and economic modelling approach  Rita Yi Man Li et al	Professionals' Impressions Regarding the Saudi Arabian Procurement and Contracts System  Ahmed Alofi et al	Industries Perceived Value and Utilization of Succession Planning Practices in the Construction Industry  Anthony Perronoud & Kenneth Hines		
12:00 - 1:45	<i>Lunch, Outstanding Educator &amp; Researcher, Best Paper &amp; Best Poster Awards; Keynote (Swinton)- Emerald Ballroom 1</i>				
1:45 - 2:00	<i>Networking Break - Third Floor Foyer</i>				
<b>Curriculum and Other Topics of Interest</b>					
	<b>Emerald 2</b>	<b>Pioneer</b>	<b>Belltown</b>	<b>Capitol Hill</b>	<b>First Hill</b>
2:00 - 3:00	Construction Law Greg Starzyk	Project Management	Trimble	Grad. Program Curriculum	Information Technology
2:30 pm	Bullitt Center Tour 1501 E Madison St, Seattle, WA 98122 Yong Kim (transportation <b>NOT</b> provided)				
3:00 - 3:15	<i>Networking Break - Third Floor Foyer</i>				
3:15 - 4:15	Capstone - Rick Cherf	Temp Structures Kamran Nemati	Bluebeam Emily Heppard	Comparison of 4 Scheduling Softwares	Industry Advisory Committees
4.15 - 5:00	<i>Break</i>				
5:00 - 8:00	<b>BANQUET &amp; LIFE TIME ACHIEVEMENT AWARD CEREMONY - Tilicum Village</b>				
Saturday, April 8 (continued)					
8:00 - 9:00	<i>Breakfast and ASC Business Meeting - Emerald Ballroom 1</i>				
9:00 - 11:00	<i>Post Conference Board Meeting - Blue Mouse Boardroom</i>				

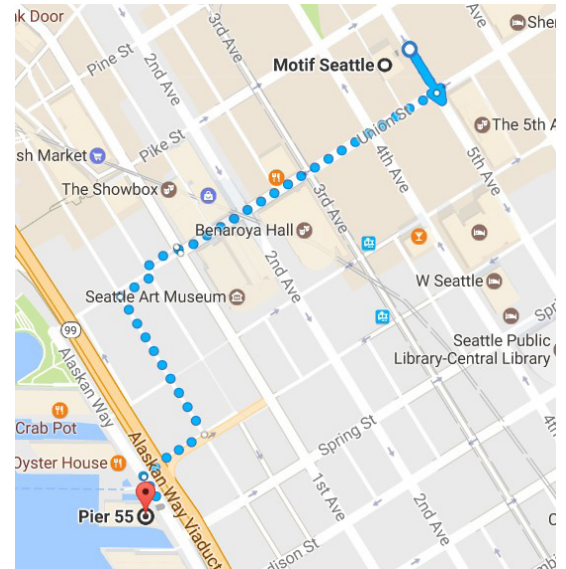
## Tillicum Village Cruise, Dinner and Show

We hope all of you can join us for this year's banquet and Lifetime Achievement Award Ceremony at Tillicum Village.

From Pier 55, we'll board an Argosy Sightseeing Cruise and sail to nearby Blake Island State Park. There we'll enjoy a Northwest flavor-inspired buffet featuring traditionally prepared fire-roasted fish and experience a Northwest Native American storytelling show.

### MENU

Steamed Clams in Nectar  
Traditional Alder Fire Roasted Fish  
Signature Northwest Stew  
Wild Grain Harvest Rice  
Warm Whole Grain Tillicum Bread  
Field Greens Salad  
Polenta with Wild Mushroom Ragout  
Fresh Fruit Salad  
Blackberry Crisp  
Fountain sodas, hot tea, and drip coffee



### GETTING THERE

We encourage you to take the scenic half-mile walk down to the waterfront and meet us at Pier 55.

**Boarding begins at 4:30 p.m.**

**Sailing time is 5 p.m.**

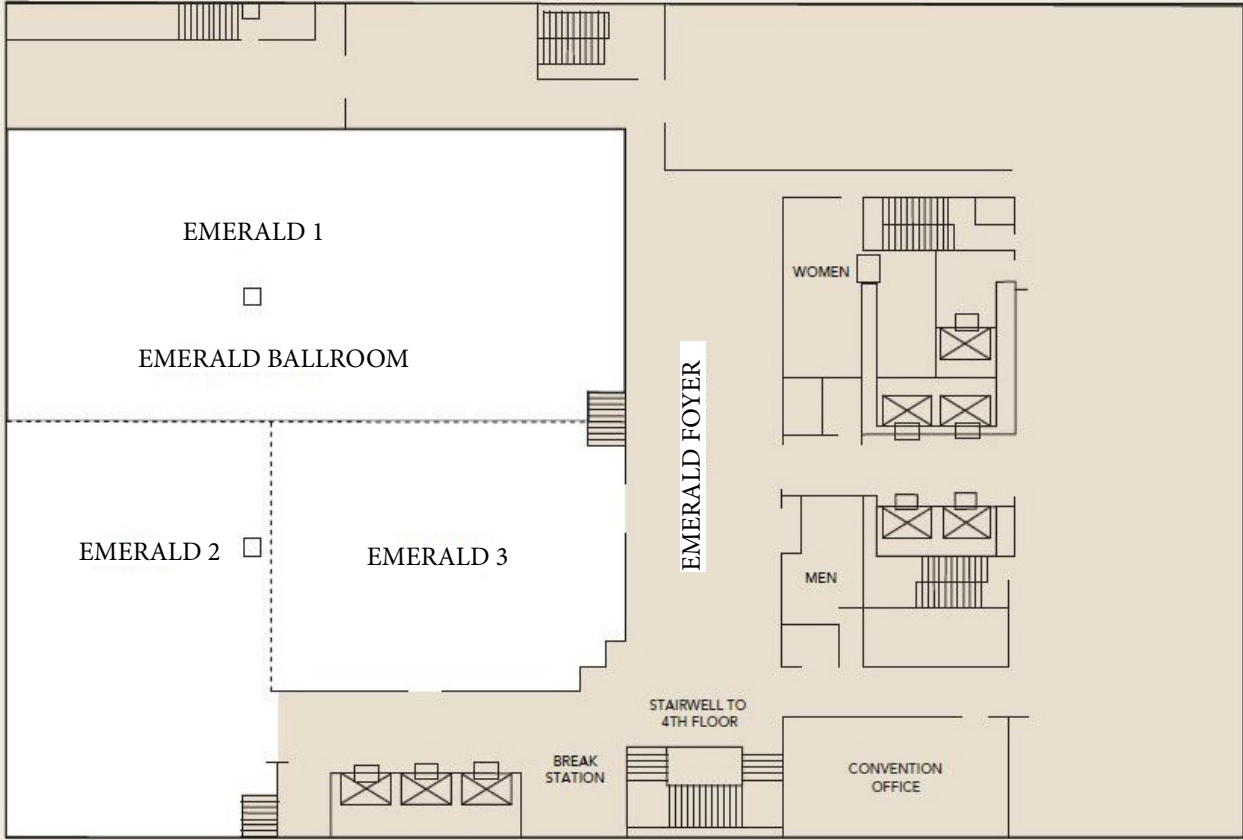
*There will also be a shuttle running between the Motif Lobby to Pier 55 from 4:15 p.m. to 4:45 p.m.*



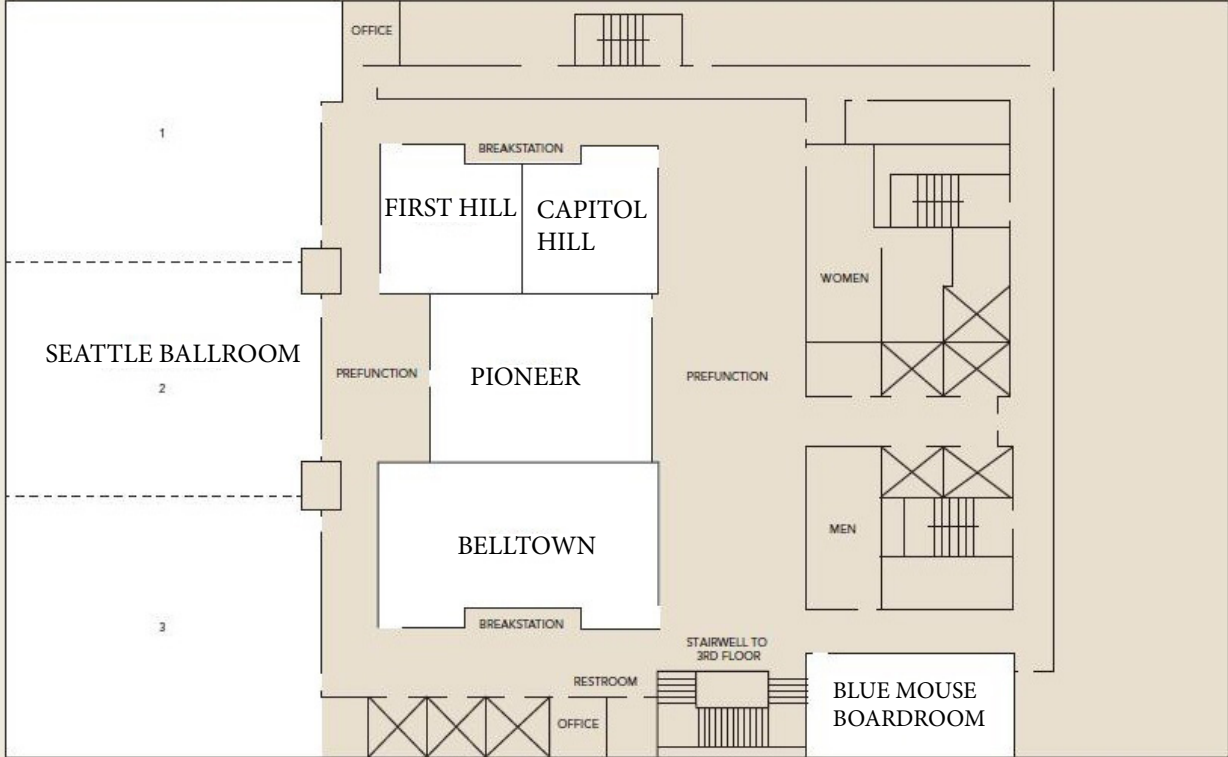


# CONFERENCE VENUE MAPS

## Third Floor



## Fourth Floor









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