PORTS® ’19
Pittsburgh, Pennsylvania | September 15-18, 2019
Connect. Innovate. Transform.
Wyndham Grand | Pittsburgh, Pennsylvania
#ports19 | www.portscconference.org
Schedule-at-a-Glance  
(Subject to Change)

*Events in Bold take place in the Exhibit Hall

**Sunday, September 15**
- 6:30 – 10:00 a.m. Registration Open – Grand Ballroom Foyer
- 8:00 a.m. – 5:00 p.m. Short Courses – See page 4
- 10:00 – 11:00 a.m. Registration Closed
- 1:00 – 5:00 p.m. Exhibitor Move-in – Grand Ballroom
- 10:00 – 11:00 a.m. Registration Open – Grand Ballroom Foyer
- 11:00 a.m. – 6:30 p.m. Student and Young Professionals Reception – King’s Garden 1-2, Sponsored by The Port of Oakland
- 4:30 – 5:30 p.m. Student and Young Professionals Reception – King’s Garden 1, Sponsored by The Port of Oakland
- 5:30 – 7:30 p.m. Exhibits Open – Grand Ballroom
- 5:30 – 7:30 p.m. Welcome Reception – Grand Ballroom

**Monday, September 16**
- 6:30 – 11:30 a.m. Registration Open – Grand Ballroom Foyer
- 7:00 – 8:00 a.m. Speaker Breakfast – King’s Garden 1
- 8:30 – 10:00 a.m. Concurrent Technical Sessions – See Technical Grid pages 9-10
- 10:00 – 10:30 a.m. Morning Refreshment Break – Grand Ballroom
- 10:00 a.m. – 4:00 p.m. Exhibits Open – Grand Ballroom
- 10:30 – 11:10 a.m. Commercial Showcase – Brigade
- 10:30 a.m. – 12:00 p.m. Concurrent Technical Sessions – See Technical Grid pages 11-12
- 11:30 a.m. – 1:00 p.m. Registration Closed for Lunch
- 12:00 – 1:30 p.m. Lunch – Grand Ballroom
- 12:00 – 2:00 p.m. Awards Luncheon – King’s Garden 1, Sponsored by WSP USA
- 1:30 – 5:30 p.m. Registration Open – Grand Ballroom Foyer
- 2:00 – 2:40 p.m. Concurrent Technical Sessions – See Technical Grid pages 11-12
- 2:00 – 3:30 p.m. Concurrent Technical Sessions – See Technical Grid pages 11-12
- 3:30 – 4:00 p.m. Afternoon Refreshment Break – Grand Ballroom
- 4:00 – 5:30 p.m. Concurrent Technical Sessions – See Technical Grid pages 11-12
- 6:00 – 10:00 p.m. Gala Social Event – Carnegie Science Center

**Tuesday, September 17**
- 6:30 a.m. – 12:00 p.m. Registration Open – Grand Ballroom Foyer
- 7:00 – 8:00 a.m. Speaker Breakfast – King’s Garden 1
- 8:00 a.m. – 4:00 p.m. Exhibits Open – Grand Ballroom
- 8:00 – 8:30 a.m. Continental Breakfast – Grand Ballroom, Sponsored by HDR
- 8:30 – 10:00 a.m. Concurrent Technical Sessions – See Technical Grid pages 11-12
- 10:00 – 10:30 a.m. Morning Refreshment Break – Grand Ballroom
- 10:30 – 11:10 a.m. Concurrent Technical Sessions – See Technical Grid pages 11-12
- 11:30 a.m. – 1:00 p.m. Registration Closed for Lunch
- 12:00 – 2:00 p.m. Lower Monongahela Lock and Dam Tour – Sponsored by COWI
- 12:00 – 1:30 p.m. Lunch – Grand Ballroom
- 1:30 – 5:30 p.m. Concurrent Technical Sessions – See Technical Grid page 13-14
- 2:00 – 5:00 p.m. Exhibitor Move-out – Grand Ballroom
Welcome to PORTS® ’19!

Together, we will look to the future of port engineering with the theme “Connect. Innovate. Transform.”

Welcome to Pittsburgh, PA, where, for the first time, the Ports conference will be held in an inland port. Even in our country’s infancy, the marine transportation system was a major component in the success of the United States. President George Washington’s personal vision of America included a navigable trade route between the Eastern United States ports and the Ohio River Valley in which Pittsburgh lies. Our nation’s future continues to be built on maritime trade and its continual innovation.

Welcome to the fifteenth triennial PORTS conference, where national and international leaders of the port engineering industry gather for:

- Presentations of peer-reviewed papers on various aspects of port engineering, selected for their new and innovative insights, materials, technologies and delivery methods
- Four- and eight-hour short courses taught by industry experts for in-depth training
- Technical tour of the Lower Monongahela Lock and Dam Project led by US Army Corps of Engineers Pittsburgh District
- Fun and interactive Gala at the Carnegie Science Center
- Networking with colleagues, clients and vendors in centrally-located exhibit hall
- Walk to nearby social events from the downtown location including restaurants, sporting events, museums, and other outings

What’s new this year?

- Innovative Track E sessions addressing a diverse group of non-technical port engineering topics, including panel presentations on Government Advocacy, Public-Private Partnerships for ports, PIANC MARCOM Working Group updates, and the USACE Pittsburgh District’s program.
- Expanded Student and Young Member program including the new “Port Engineering 101” course, especially focused for early-career port engineers, but equally applicable to mid-career engineers transitioning into the port industry, or senior-level managers who have port engineering oversight duties.

Download the PORTS® ’19 App

Whether you want to personalize your schedule, check out the PORTS® ’19 exhibitors, or take notes about a presentation, the PORTS® ’19 App is your go-to mobile experience!

- Download the free eventScribe App from the Apple App Store or Google Play Store (search for “eventscribe” to find)
- Install, then open the app.
- “Search for an Event” with “PORTS’19”
- Choose your login option: Attendees can use your PORTS® ’19 username and password to log in and create your personal experience. You can also create an account if you do not already have one.

Elizabeth Collins Burkhart, P.E., D.PE, M.ASCE
PORTS® ’19 Organizing Chair

PORTS® ’19 Steering Committee

Organizing Chair: Elizabeth Burkhart, P.E., D.PE, M.ASCE, Collins Engineers, Inc.
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Gala/Social Chair: Imee Osantowski, P.E., M.ASCE, COPRI President, Port of Oakland (retired)
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Local Chair: Mike Wagner, P.E., M.ASCE, Urban Engineers, Inc.

Conference Staff

Tom Chase, Director, COPRI
Sean Herpolsheimer, Coordinator, COPRI
Lucy King, CMP, Senior Manager, Geo-Institute & COPRI Conferences
Sean Scully, Senior Manager, ASCE Sponsorship and Exhibit Sales

Other Sponsor Contributions

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Program Overview

Sunday, September 15

Student and Young Professionals Reception
4:30 – 5:30 p.m., King’s Garden 1-2
Sponsored by

PORT OF OAKLAND

Students and Young Professionals, get a head start on the conference and connect just before the Welcome Reception. Hosted by the Conference Organization Committee, come meet the current and future leaders of the Port Engineering community.

Welcome Reception
5:30 – 7:30 p.m., Grand Ballroom

Kick off PORTS® ’19 with friends, colleagues, young professionals, and distinguished award winners in the Exhibit Hall. Visit and talk with our exhibitors and sponsors as we begin another successful PORTS conference.

Don’t miss this special opportunity to catch up with old friends and colleagues or make new contacts with similar interests to attend. Business dress.

Monday, September 16

Opening Plenary
8:30 – 10:00 a.m., King’s Garden
Sponsored by

WELCOME REMARKS FROM PIANC USA
PRESIDENT: Major General Scott A. Spellmon
Deputy Commanding General for Civil and Emergency Operations, U.S. Army Corps of Engineers; President, PIANC USA

Maj. Gen. Scott Spellmon exercises oversight of the Corps’ civil works activities, which includes conducting research and development, as well as planning, designing, building, operating and maintaining the nation’s water resource civil infrastructure. Spellmon is also responsible in coordinating all emergency response missions and preparatory activities for civil disasters in support of FEMA and state and local authorities.

KEYNOTE ADDRESS: Helen A. Brohl
Executive Director of the U.S. Committee on the Marine Transportation System (CMTS), former PIANC USA Commissioner, and 2016 Woman of the Year in Maritime Policy by the Organization of American States

Helen Brohl is the first executive director of CMTS partnership under which 25 Federal agencies collaborate to address US waterways, ports, and intermodal connections. Under her direction, the first-ever National Strategy for the Marine Transportation System (MTS) was developed and approved. She is focused on issues including Federal infrastructure financing and investment, system performance measures, navigation technology integration and coordination, and integration of marine transportation issues into the President’s Ocean Policy and National Export Initiatives. She was instrumental in the development of the CMTS Strategic Action Plan for Research and Development in the MTS, the CMTS response to the National Ocean Policy, the CMTS National Strategy for e-navigation, and marine transportation policy for the U.S. Arctic.

PORTS® ’19 Student Paper Competition
10:30 a.m.–5:00 p.m., See room locations below.

Join us as we welcome five student presenters from across the globe to participate in the PORTS® ’19 Student Paper Competition. Spread out among technical sessions on Monday, September 16, these exceptional student members will share their presentations on these exciting topics:

Cascading Seismic and Tsunami Actions in a Pile-Supported Quay, Claudia Reis, Ph.D., S.M.ASCE, Commonwealth 2

Bayesian Damage Prediction of Berm Breakwaters in the Arctic, Maria Pontiki, MS, S.M.ASCE, Benedum

Extending the Service Life of Mooring Cells, Zach J. Usselton, S.M.ASCE, Commonwealth 2


Measuring Sea Surface Gravity Waves Using Smartphones, Matheus de Paula Vieira, S.M.ASCE; Pedro Guimarães, Commonwealth 2

A panel of judges will choose the top three papers and award cash prizes during the PORTS® ’19 Awards Luncheon on Tuesday, September 17, 12:00 – 2:00 p.m.

Short Courses
Sunday, September 15

All short courses take place on Sunday, September 15 and require an additional ticket. Attendees must be registered for the conference (full or daily) in order to register for the short courses.

Large Floating Structure Design
8:00 a.m. – 12:00 p.m., Sterlings 1

Dredging 101
8:00 a.m. – 12:00 p.m., Sterlings 3

Vessel Mooring and Berthing
8:00 a.m. – 5:00 p.m., Commonwealth 1

Waterfront Inspection, Testing, and Rehabilitation for Waterfront Facilities
8:00 a.m.–5:00 p.m., Commonwealth 2

Planning, Design, and Implementation of Automated Terminals
1:00 – 5:00 p.m., Sterlings 1

Grant Writing Workshop – Transportation, Infrastructure and Resiliency Funding Opportunities at Ports
1:00 – 5:00 p.m., Sterlings 2

Theory and Design of Floating Wave Attenuators
1:00 – 5:00 p.m., Sterlings 3

PORTS® ’19 Student Paper Competition
10:30 a.m.–5:00 p.m., See room locations below.
Government Affairs Panel
10:30 a.m. – 12:00 p.m., Commonwealth 1, Track 1E

Ports are greatly affected by public policy. Policy drives project prioritization, funding, and authorization, as well as the global movement of the freight which passes through ports.

As port professionals, we need not only understand the policies affecting current and future port activities, but also how to influence policy on federal, state, and local levels.

This government affairs panel discusses important questions:

1. How does advocacy work in a world where freight movement is increasing but the decision-makers and funders are increasingly politically divided?

2. We have bipartisan agreement that infrastructure is good for the country. How do we (literally) build on that agreement?

**Moderator:** Erik Stromberg, A.M.ASCE, Executive Director of the Center for Advances in Port Management, Lamar University

**Panelists:**
- Jennie Granger, Deputy Secretary for Multimodal Transportation, PennDOT
- Mary Ann Bucci, Executive Director, Port of Pittsburgh Commission
- Peter Stepchaich, Chairman & CEO, Campbell Transportation Company, Inc. & Chairman, Waterways Council
- Natalie Mamerow, Senior Manager, Federal Government Relations, American Society of Civil Engineers

Public-Private Partnerships for Port Facilities Panel
1:30 – 3:00 p.m., Commonwealth 1, Track 2E

Are Public-Private Partnerships the only way to finance much needed waterway and port improvements? Are there other perspectives and potential partners that can help you meet your goals? This diverse panel will offer unique and informative perspectives on financing projects and building partnerships to move your capital programs forward.

**Moderator:** Norma Jean Mattei, Ph.D., P.E., F. ASCE, Past President of ASCE, Commissioner on the Mississippi River Commission and Professor at the University of New Orleans

**Topics and Panelists:**
- Inland Waterway Reliability and Capacity Improvements led by Bob Beduhn, P.E., ASCE Alternative Finance Subcommittee Chair, Civil Works Director, HDR Engineering Inc.
- Port Operator Perspectives led by Chris Ragucci, CEO, Worldwide Terminals, LLC
- International Perspectives led by David Baxter, Consultant, International Infrastructure Development and PPP Advisor
- Extracting Value from Resiliency Improvements led by Raed EL-Farhan, Ph.D., Senior Vice President, The Louis Berger Group

PIANC Working Groups Update
3:30 – 5:00 p.m., Commonwealth 1, Track 3E

Four Technical Commissions (InCom, MarCom, EnviCom & RecCom) cover different areas of waterborne transport infrastructure, and they supervise the work carried out by our experts in the respective Working Groups on subjects of interest.

MarCom co-operates with other Commissions when issues can be seen to have a broader perspective, for example when they also have an environmental or inland impact and where relevant cross-commissions issues are concerned such as Working with Nature, Climate Change or approach to target countries. MarCom also co-operates and communicates with other international organizations such as IMO, IAPH, IALA, IHMA, IAHR, IMPA, WODA, etc.

Several Working Groups are underway within MarCom’s purview. This session provides an overview of the active PIANC MarCom Working Groups.

**Presenter:** Ron Heffron, P.E., D.PE, M.ASCE, Principal U.S. Representative for the PIANC Maritime Technical Commission (MarCom)

EnviCom is responsible for dealing with both broad and very specific navigation sustainability and environmental risk-related issues of interest to PIANC that crosscut all PIANC areas, partner activities. With strategic initiatives, Working Groups and networking activities, EnviCom proactively develops and provides environmental guidance, supports the waterborne transport infrastructure sector’s sustainability goals, and implements PIANC goals. In this regard, EnviCom pursues new or continues existing activities in topics like working with nature environmental risk management, dredging in environmental sensitive areas, sustainable ports, climate change adaptation, carbon management, and resilience.

This session includes a presentation of the work of EnviCom Working Group 214 on Beneficial Use of Dredged Materials.

**Presenters:**
- Victor Magar, Ph.D., P.E., Principal, Ramboll
- Donald Hayes, Ph.D., P.E., Research Environmental Engineer, Environmental Laboratory, U.S. Army Research and Development Center
Tuesday, September 17

Continental Breakfast
8:00 - 8:30 a.m., Grand Ballroom
Sponsored by HDR

Port Engineering 101
Part 1 | 8:30 – 10:00 a.m., Commonwealth 1, Track 4E
Part 2 | 10:30 a.m. – 12:00 p.m., Commonwealth 1, Track 4E

What you need to know being a Port Engineer!

This four-hour technical short course provides an overview for new technical professionals working in the port and maritime industry, especially those in port authorities, public agencies, consulting firms, and contractors. All conference attendees are welcome.

This course will benefit you if you are:
• An entry-level engineer who needs to become familiar with the many facets of analysis/design of port infrastructure;
• A mid-career engineer seeking to transition into port engineering; or
• A senior-level manager who has assumed responsibilities over port engineering but are new to the topic.

Port Engineering 101 will present the technical facets of designing, assessing, and maintaining port structures, including:
• Port Economics
• Container Terminal Operations
• Vessel Terminology & Particulars
• Port Structures
• Typical Design Considerations & Construction Materials
• Seismic Considerations
• Geotechnical Considerations
• Construction Documentation

Awards Luncheon
12:00 – 2:00 p.m., King’s Garden
Sponsored by

LUNCHEON MISTRESS OF CEREMONIES: Imee Osantowski, P.E., M.ASCE, President, COPRI 2018-2019
Board of Governors

WELCOME REMARKS FROM ASCE PRESIDENT: Kancheepuram (Guna) N. Gunalan, Ph.D., P.E., D.GE., F.ASCE, ASCE President 2020

K.N. Gunalan [Guna] has 30 years of experience in civil and construction industry. He has served in a number capacities including management of small, medium and large multi-national consulting firms. He is a senior manager with the experience and skill sets to manage large complex infrastructure projects. He has provided technical advice on civil, structural, geotechnical, pavement and materials issues on a variety of projects around the country and overseas. His collaborative approach for result oriented outcomes supported by his demeanor and strong communication capabilities have contributed to a number of successful Programs/Projects ranging in size from a few thousand dollars to over three billion dollars.

LUNCHEON ADDRESS: Leslie S. Richards, PennDOT Secretary of Transportation, Chairwoman of the Pennsylvania Turnpike Commission, and Chairwoman of the Pennsylvania Public Private Partnership board

Secretary Leslie Richards was appointed by Governor Tom Wolf in 2015. She is responsible for one of the largest multimodal transportation systems in the US, which includes the Ports of Philadelphia, Erie, and Pittsburgh. Under her direction, Pennsylvania has embarked on a program of innovation and adoption of technology, including the extensive use of Public Private Partnerships to address infrastructure funding and reliability challenges, an early partnership with Waze, the implementation of a metric-driven infrastructure investment approach, the inauguration of IdeaLink 20/20, and the development of the new PennDOT 20-20 strategic vision which includes the innovative PennDOT Connects.

AWARDS AND HONORS
Awards and honors bestowed at this event include:
- Student Paper Competition
- Service to the ACOPNE Award
- ACOPNE Outstanding Practitioner in Coastal, Ocean, Port and Navigation Engineering Award
- ACOPNE Diplomates Induction
- COPRI Project Excellence Awards
- Orville T. Magoon Sustainable Coasts Award
- John G. Moffatt-Frank Nichol Harbor and Coastal Engineering Award
- Kenneth M. Childs, Jr., Practitioner’s Award

Program Overview (continued)

Student and Young Professionals Networking
4:00 - 5:30 p.m., Commonwealth 1, Track 7E
Sponsored by

Get ready for an exciting, interactive panel discussion with leading professionals from across the country. It’s your time to connect, innovate, and transform! Don’t miss out! You’re the generation that will innovate and transform our industry for the benefit of prosperity around the globe. See you there!

Panelists:
- Colonel Aaron Barta, Commander, Los Angeles District U.S. Army Corps of Engineers
- Tom Kim, P.E., HDR, Inc.

There will also be a breakout networking session with the panelists, other industry experts, and students and young professionals like you!

Gala Social Event
6:00 – 10:00 p.m., Carnegie Science Center
1 Allegheny Ave, Pittsburgh, PA 15212

Our gala at the Carnegie Science Center will bring out the kid in all of us! We’ll get our hands wet as we explore our river environment in the H2Oh! Exhibit, tackle the new Ropes Challenge, explore the USS Requin (SS 481) submarine, visit Mr. Rogers’ [miniature railway] Neighborhood, and shoot baskets and play air hockey against robots in roboworld. Enjoy the fun and casual evening to mingle with friends and explore the Works Theater with its cocktails mixed with liquid nitrogen.

Recipient of the 2003 National Award for Museum Service, Carnegie Science Center inspires and entertains people of all ages by connecting science and technology with everyday life. The hands-on approach to science in the real world takes visitors on an entertaining and educational adventure. The Science Center is located near the conference hotel on Pittsburgh’s North Shore along the banks of the Ohio River and is accessible to persons with disabilities.

Bus Schedule
Buses will depart from the Liberty Avenue Entrance of the Wyndham Grand Pittsburgh at 5:45 p.m and 6:30 p.m.

Buses will begin departing from Carnegie Science Center at 8:45 p.m. and will make loops until the final pickup at 10:00 p.m.

www.portsconference.org
Wednesday, September 18

Sustainable Infrastructure – What’s the Plan?
10:30 a.m. – 12:00 p.m., Commonwealth 1, Track 9E

The Pittsburgh District is responsible for 23 locks and dams, more than any other district in the U.S. Army Corps of Engineers.

Lenna Hawkins, the Deputy District Engineer for the Pittsburgh District, will provide an overview of the past, present and future economic importance of the valuable river resource. With the external influences to include legislative, environmental, cultural and progressive weather extremes, what’s the plan for its future?

Presenter: Lenna C. Hawkins, P.E., PMP, Deputy District Engineer, Executive Office, U.S. Army Corps of Engineers, Pittsburgh District

Technical Tour

Lower Monongahela Lock & Dam Tour
12:30 – 5:30 p.m., Commonwealth 1

Sponsored by COWI

U.S. Army Corps of Engineers staff will give a tour of the Lower Mon Project. The Lower Mon Project replaced the nearly 100-year-old fixed-crest dam at Braddock Locks and Dam with a gated dam, will remove Locks and Dam 3 in Elizabeth, PA, and construct two new larger locks (Charleroi Locks) at Locks and Dam 4 in Charleroi, PA.

Col. Andrew J. Short, Commander of the Pittsburgh District

Col. Andrew J. Short will lead a discussion about inland navigation as seen through the Locks and Dams 2, 3 and 4, Monongahela River (Lower Mon) Construction Project for all conference attendees at the conference hotel. Charleroi Locks and Dams construction work is one phase of the $2.7 billion Lower Monongahela Construction mega-project. Funding limitations have stretched the construction of this project from 10 years to more than 30 years. Col. Short and his team will share the challenges and victories in maintaining river traffic through ongoing construction and in communications with stakeholders, which have been strengthened. They will also share issues and lessons learned constructing a project with a limited funding stream and over an extended construction period.

Col. Short’s presentation will be followed by boarding of the busses and a tour of ongoing construction at Charleroi Locks and Dam (L/D 4) on the Monongahela River for conference attendees who have pre-registered for the technical tour. Attendees should wear sleeved shirts, long pants, and closed-toe shoes.

Tour Schedule
12:30 – 1:15 p.m. Introduction and Overview by Pittsburgh District Commander in the Commonwealth 1 room at the Wyndham Grand Pittsburgh. All conference attendees are welcome to this presentation.

1:15 – 1:30 p.m. Buses Load and Depart from the Liberty Avenue Entrance of the Wyndham Grand Pittsburgh

1:30 – 5:30 p.m. Tour (pre-registration required) Your ID will be checked prior to boarding the bus for the tour. Everything must match what you previously submitted to gain admittance to the tour.

Below: Charleroi Locks & Dam. Locks and dam along the Monongahela River at Charleroi, PA, USA.
Monday, September 16, 2019

6:30 a.m. – 4:00 p.m.  Registration (closed 11:30 a.m. – 1:00 p.m. for lunch)
7:00 – 8:00 a.m.  Speaker Breakfast – King’s Garden 1
7:00 a.m. – 5:00 p.m.  Speaker Ready Room – King’s Plaza
8:30 – 10:00 a.m.  Opening Plenary – King’s Garden
10:00 – 10:30 a.m.  Morning Refreshment Break – Grand Ballroom
10:00 a.m. – 4:00 p.m.  Exhibit Hall Hours – Grand Ballroom
10:30 a.m. – 12:00 p.m.  Technical Sessions

1A: Environmental
Moderator: Frank G. Davidson, III, P.E., S.E., ENVSP
Waterfront Stormwater Treatment Design for Any Commodity Anywhere Laura Weiden, P.E.; Ross W. Dunning, P.E.; Ben Fuentes, P.E.
Industrial Stormwater Treatment on a 200-acre Container Terminal, Elias Beckwith, P.E.; Scott Adamek, P.E.; Layli Wachter
Impacts of Implementing Zero Emission Container Handling Equipment on a Container Terminal, Perry Simpson, P.E., MSGC, M.ASCE, Douglas Thiessen, D.P.E.; Peikka Ranta, MScEWB

1B: Port Engineering (Geotechnical and Geosciences)
Moderator: Monique A. Anderson, P.E., M.ASCE
Geotechnical Issues Encountered and Overcome in the Development of Colombia’s Gateway Port, Thomas J. Shaler, Jr., P.E.
Uncharted Territory: Challenges and Success in the Terminal 5 Berth Modernization Test Pile Program, Joanna Hingle, P.E., SE; Brian E. Kelly, P.E.; Paul Meyer, P.G.; Doug Lindquist, P.E., P.G.

1C: Port Engineering (Structural)
Moderator: Daniel O’Connor, P.E., M.ASCE
A Look into Premature Failure of Vertically Welded Pipe Piles, Matthew Yeeden, P.E., S.E.; Lukas Harris
Increasing Lift Height and Improving Ship to Shore Gantry Cranes Inside an Active Container Yard, Edward H. Stehmeyer, III, P.E.
New PIANC Guidelines for Oil & Gas Marine Terminal Design & Assessment, Ron Hettman, P.E., D.P.E., M.ASCE

1D: Port Engineering (Extreme Events - Seismic)
Moderator: Michael Wagner, P.E., M.ASCE
Cascading Seismic and Tsunami Actions in a Pile-Supported Quay, Claudia Reis, Ph.D., S.M.ASCE
Combined Kinematic and Inertial Seismic Analysis of Marine Structures, Julie A. Galbraith, P.E.; M. Ali Naeem, P.E.; William M. Bruin, P.E., D.P.E.

1E: Government Affairs Panel
Moderator: Erik Stromberg, A.M.ASCE
We All Agree That Infrastructure Is Good For The Country. How Do We Build On That Agreement? Jenise Granger, AICP, Mary Ann Bucci, Peter Stephanich, Natalie Marinerow

See more details on page 5.

Technical Sessions:

12:00 – 1:30 p.m.  Exhibit Hall Luncheon – Grand Ballroom

Port Engineering Publications from ASCE

Seismic Design of Piers and Wharves. 2014/90 pp. This standard uses displacement-based design methods to establish guidelines for the design of piers and wharves to withstand the effects of earthquakes.

Mooring of Ships to Piers and Wharves Mooring Analysis 2014/136 pp. Today’s larger, complex ships, with greater wind exposure and deeper drafts, pose particular mooring challenges to designers, captains, and pilots.

Waterfront Facilities Inspection and Assessment. 2015/304 pp. This Manual of Practice provides guidance on eight different types of inspection and explains how to match inspection types to project needs.

Visit the ASCE Bookstore in the Grand Ballroom Foyer or www.asce.org/booksandjournals.
Monday, September 16, 2019 (continued)

1:30 – 3:00 p.m.  
**Technical Sessions**

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<td><strong>2A: Environmental (Innovative Programs)</strong></td>
<td><strong>2B: Port Engineering (Inspection, Rehabilitation and Redevelopment)</strong></td>
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<td><strong>2D: Port Engineering (Extreme Events - Seismic Retrofit)</strong></td>
<td><strong>2E: Public Private Partnerships for Port Facilities Panel</strong></td>
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3:00 – 3:30 p.m.  
**Afternoon Refreshment Break – Grand Ballroom**

3:30 – 5:00 p.m.  
**Technical Sessions**

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<td><strong>3B: Port Engineering (Seismic Design of Bulkheads, Innovative Solutions)</strong></td>
<td><strong>3C: Landside Connections, Rail Design of Bulkheads, Innovative Solutions)</strong></td>
<td><strong>3D: Port Engineering (Coastal, Sea Level Rise)</strong></td>
<td><strong>3E: PIANC MARCOM Working Groups Update</strong></td>
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10  | Connect. Innovate. Transform.
### Tuesday, September 17, 2019 (continued)

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<tr>
<th>Track A</th>
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<th>Track D</th>
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<tbody>
<tr>
<td>6A: Navigation &amp; Waterways, Dredging</td>
<td>6B: Port Engineering (Design Standards for Piers and Wharves)</td>
<td>6C: Port Planning and Operations (Master Planning)</td>
<td>6D: Port Engineering (Coastal)</td>
<td>6E: Ethics, Engineers and Experts: Who Is Your Master</td>
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<tr>
<td><strong>Moderator:</strong> Thomas McCollough, P.E., M.ASCE</td>
<td><strong>Moderator:</strong> Omar A. Jaradat, Ph.D., P.E., D.P.E., M.ASCE</td>
<td><strong>Moderator:</strong> Andrew Cairns, P.E., D.P.E., PWP</td>
<td><strong>Moderator:</strong> Kirk F. Riden, P.E.</td>
<td><strong>Instructors:</strong> Michael Ports, P.E., Ph.D., WRE, D.NE, BCEE, FEVRH, F.ASCE; Kenneth Goodwin, CP, M.ASCE</td>
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<tr>
<td><strong>SMART Planning Requires Smart Modeling - Getting the Most Value for Your Ship Simulation Dollar,</strong> Dennis W. Webb, PEDNE; Timothy Shelton, P.E.; Keith Martin</td>
<td><strong>Canadian Design Requirements for Marine LNG Facilities,</strong> Martin L. Etxebarria, P.E.; D.P.E (Ret); Pooya Jain, P.E., S.E.</td>
<td><strong>Port of Long Beach Land Use Study,</strong> Harald M. Gogaj, ENVSVP; Tracy Fiddell, P.E.; Matt Fiezio, Tony Chan, Ph.D.</td>
<td><strong>CFD Wave Loading and Response Analysis for Large Interconnected Floating Systems,</strong> Chad L. Mortari, P.E.; Scott Fincel, P.E., M.ASCE; Richard Riley, Nathan A. Watters, P.E.</td>
<td><strong>Panelists:</strong> Col. Aaron Barta; Tom Kim, P.E.; William M. Bruin, P.E., D.P.E., M.ASCE; Charlie Roberts, P.E., D.P.E., M.ASCE; Monique A. Anderson, P.E., M.ASCE</td>
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**Technical Program (continued)**

- **12:00 – 2:00 p.m.** Awards Luncheon – King’s Garden
- **2:00 – 3:30 p.m.** Technical Sessions
- **3:30 – 4:00 p.m.** Afternoon Refreshment Break – Grand Ballroom
- **4:00 – 5:30 p.m.** Technical Sessions
- **6:00 – 10:00 p.m.** Gala Social Event at the Carnegie Science Center
### Wednesday, September 18, 2019

<table>
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<td>6:30 a.m. – 2:00 pm</td>
<td>Registration</td>
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<tr>
<td>7:00 – 8:00 a.m.</td>
<td>Speaker Breakfast – King’s Garden 1</td>
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<tr>
<td>7:00 a.m. – 5:00 p.m.</td>
<td>Speaker Ready Room – King’s Plaza</td>
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<tr>
<td>8:00 a.m. – 2:00 p.m.</td>
<td>Exhibit Hall Hours – Grand Ballroom</td>
</tr>
<tr>
<td>8:30 – 10:00 a.m.</td>
<td>Technical Sessions</td>
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</tbody>
</table>

#### Track A | Sterlings 1-2
- **Moderator:** Joseph Galloway, P.E., M.ASCE
- **Port Engineering (Extreme Events - Seismic)**
- 3-Dimensional Nonlinear Static Analysis for Waterfront Structures with Torsional Response Under Seismic Loading, Pooja Jain, P.E., S.E.; Jim Hogan, Stuart Stringer, P.E.; Thomas McCollough
- Seismic Design Standards for Nonstructural Components and Nonbuilding Structures in MOEEMS, Rakesh K. Goel, Ph.D., P.E.
- An Integrated Assessment of Hazard Vulnerability and Resilience to Seaports, Jean Hur, Ph.D., P.E.; Abdallah Shafieezadeh, Ph.D., M.ASCE; Zhenhua Chen, Ph.D.

#### Track B | Sterlings 3
- **Moderator:** Noah J. Elwood, P.E., M.ASCE
- Precast Counterfort Seawall Simplifies Road Widening Project in USVI, V.K. Kumar, P.E., S.E., M.ASCE; Jyotirmoy Sircar, P.E., M.ASCE; Justin Berglund
- Wings over Washington Foundation Design, Louis Klimasney, P.E., S.E.

#### Track C | Benedum
- **Moderator:** Chris Cornell, P.E., S.E., M.ASCE
- Dynamic Planning for Flexible Port Infrastructure After Panama Canal Expansion: A Real Case Study, Oscar I. Soto Reyes, M.Sc; Poomarn Taneja; Ben-Jaap Pielage; Maurits van Schuylenburg
- Optimized Design Addresses Site and Constructability Challenges for Container Wharf in Iraq, Carlos E. Osparra, Ph.D., P.E., M.ASCE; V.K. Kumar, P.E., S.E., M.ASCE; Jyotirmoy Sircar, P.E., M.ASCE; Victor Dempsey, B.Eng, LIM, C.Eng, MICE, MCIArb
- Planning, Design, and Construction for Expansion of PSA’s Panama Hub Port, Ricardo McNiel, MEng; Manfred Zinselung, P.E., S.E., M.ASCE; David Taylor, C.Eng, MICE
- Forecasting Squat of Post Panamax Container Ships in PortMiami’s Entrance Channel, Gordon Thomson, P.E., DCE; Wim van der Molen, P.Eng; Ph.D.; David Taylor, C.Eng, MEng; Doug Scott, P.Eng.; Ph.D.; Jan Nikkula

#### Track D | Commonwealth 2
- **Moderator:** Thomas A. Ward, P.E., Ph.D., WIRE, D.NE, BCCEE, PEWRI, F.ASCE; Kenneth Goodwin, CP, A.M.ASCE
- Simplified Planning Tool to Determine Staffing and Consultants Needs, Lincoln Lo, P.E.; Ramanjit Brar, P.E.
- Bringing Design Build Procurement to Port Development, Keith Abraham; Nigel Nixon, P.E.
- How a Collaborative Design Assist Approach Rebuilds Tribe’s Fishing Port While Operating, Edward DeBroeck, R.Eng, M.ASCE; Tessa Gardner-Brown, AICP; Donald Oates, P.E., P.Eng., D.P.E., DBIA; Jacob Zacharda, Brian Ward

#### Track E | Commonwealth 1
- **Moderator:** Michael Ports, Ph.D., P.E., M.ASCE

### Board Certification in Port Engineering

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For more information about board certification, visit [www.acopne.org](http://www.acopne.org).
Wednesday, September 18, 2019 (continued)

10:30 a.m. – 12 p.m. Technical Sessions

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<th>Track A</th>
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12:00 – 1:30 p.m. Exhibit Hall Luncheon – Grand Ballroom

12:30 – 5:30 p.m. Lower Monongahela Lock and Dam Tour, Commonwealth 1

Build Your Future in Port Engineering

Ports and harbors are exciting places to practice civil engineering. Unfortunately, few universities teach courses in port engineering; and fewer still offer degree programs. As a result, most port engineers learn their craft on the job or through continuing education, building on their training in structural, geotechnical, coastal, or other related engineering specialties.

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ACO  
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ACO provides systems for professional surface water drainage, efficient cleaning, and the controlled discharge or reuse of water.

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Aquaveo  
www.aquaveo.com  
Our software solutions provide engineers tools for modeling groundwater and surface-water in the areas of hydrology and hydraulics to help complete demanding water resources projects.

514  
Atlantic Track  
www.atlantictrack.com  
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205  
Bedford Technology  
www.plasticboards.com  
Bedford Technology is the leading manufacturer of structural recycled plastic lumber for commercial marine applications. Our products withstand extreme environments and are built to last.

113  
DHI Water & Environment  
www.dhigroup.com  
DHI is a software development and engineering consulting firm specializing in hydraulic and hydrological modeling software.

103  
COWI  
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Port and harbor engineering services, including underwater investigation, structural and geotechnical design, berthing analysis, dredging design, permitting, construction support, resident engineering, and coastal engineering services.

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Crofton Industries  
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Denso North America  
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311  
DHI Water & Environment  
www.dhigroup.com  
DHI is a software development and engineering consulting firm specializing in hydraulic and hydrological modeling software.

215  
Bellingham Marine  
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307  
Carmel Corrosion Systems  
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CCS produces protection pile wraps, customer designed against corrosive marine environments. Easy installation on piles, risers, dolphins, used inland, offshore and deep sea.

414  
ConeTec  
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Exhibit Hall Floor Plan

Exhibit Hall Hours

Sunday, September 15
1:00 – 5:00 p.m. Exhibitor Move-in  
5:30 – 7:30 p.m. Exhibits Open  
5:30 – 7:30 p.m. Welcome Reception

Monday, September 16
10:00 a.m. – 4:00 p.m. Exhibits Open  
10:00 – 10:30 a.m. Morning Refreshment Break  
Sponsored by S.T. Hudson Engineers, Inc.  
12:00 – 1:30 p.m. Exhibit Hall Lunch  
3:00 – 3:30 p.m. Afternoon Refreshment Break  
Sponsored by Matt MacDonald

Tuesday, September 17
8:00 a.m. – 4:00 p.m. Exhibits Open  
8:00 – 8:30 a.m. Continental Breakfast,  
Sponsored by HDR  
10:00 – 10:30 a.m. Morning Refreshment Break  
Sponsored by McLane Engineering Group  
12:00 – 2:00 p.m. Exhibit Hall Closed for Lunch  
3:30 – 4:00 p.m. Afternoon Refreshment Break

Wednesday, September 18
8:00 – 2:00 p.m. Exhibit Hall Open  
8:00 – 8:30 a.m. Continental Breakfast,  
Sponsored by Moffatt & Nichol  
10:00 – 10:30 a.m. Morning Refreshment Break  
12:00 – 1:30 p.m. Exhibit Hall Luncheon  
2:00 – 5:00 p.m. Exhibitor Move-out
Exhibitors (continued)

204 Eaglelift
www.eaglelifting.com
EagleLift is an Engineering Contractor specialized in lifting and stabilizing seawalls, roadways, foundations, and sewer infrastructure that are affected by unstable soils using high-density polyurethane.

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EBDG provides naval architecture, marine engineering and analysis services to port communities and waterfront developers from offices in Seattle, New Orleans, Ketchikan, and New York.

418 ESL
www.eslwinc.com
ESL Power Systems, Inc. specializes in the design and manufacturing of safety-interlocked power solutions for port/terminal and container ship applications across the globe.

213 Esri
www.esri.com
Manage, plan, analyze, map, monitor and communicate from one technology platform. Seize the power of location with Esri’s ArcGIS Platform.

303 Fugro
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Fugro is the world’s leading, independent provider of site characterization and deep foundations testing for large constructions, infrastructure and natural resources.

504 Gantrex
www.gantrex.com
Gantrex is the leading provider of runway components for STS and Overhead Cranes. Our solutions include crane rail, pad, clips and concretesupported rail products.

312 Giken Ltd
www.giken.com
Giken has been a pioneer in the Press-in Piling Technology, which enables driving of steel and tube piles with very low noise and no vibration.

501 Goettle
www.goettle.com
Richard Goettle, Inc. is a design-build geotechnical construction firm specializing in deep foundations, earth retention systems, marine structures, and ground modification for over 60 years.

208 Hayward Baker, Inc.
www.kellerfoundations.com
Hayward Baker, North America’s leader in geotechnical solutions, offers solutions for ground improvement, earth retention & sharing, foundation repair & underpinning, liquefaction mitigation, deep foundations, and groundwater control.

319 HDR
www.hdrinc.com
With experience designing harbor improvements, integrating resiliency planning and providing new-terminal program management, our custom maritime project teams create value through our multidisciplinary approach. Knowledgeable coastal and structural engineers use 3D and 3D models to plan and design port expansion and rehabilitation projects.

111 Headed Reinforcement Corp
www.hrc-usa.com
High Performance Reinforcement Products for Structural Integrity and Constructability.

214 HUESKER/PROSERVE
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105 Jacobs
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212 Junttan USA
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211 L.B. Foster Company
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Manson Construction Co. is a leading heavy civil marine contractor with a fleet of heavy marine equipment that includes 60 specialized vessels and over 50 barges. Our services include dredging, waterfront construction, bridge building, heavy lifts, and offshore work. Manson takes great pride in having a reputation for doing quality work that meets or exceeds the owner’s specifications and budget requirements and is completed safely and on time.

219 Marine Fenders International
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Marine Fenders International is a global leader in marine fenders system, composite resilient buoys, composite boats, coated timber piles, Port Security Barrier systems and elastomer technology.

305 Marine Solutions
www.marinemarin.com
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513 Marunishi America Corporation
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Marunishi is the North American distributor of Filter Units, durable mesh bags that are filled with rock and deployed quickly and easily for erosion control.

318 McLaren Engineering Group
www.mgmca.com
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317 Menard
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115 Mitsubishi Chemical Advanced Materials
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207 Moffatt & Nichol
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218 Matt MacDonald
www.mattmac.com
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412 Neenah Foundry
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TIDAL WRAP is a Canadian manufactured marine piling protection system that incorporates a combined range of products to combat corrosion in intertidal and fully submerged zones.

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Recently, COPRI recognized the lack of training resources for engineers looking to enter or advance in port engineering and created the Port Engineering Certificate in response. Offered by ASCE Continuing Education and COPRI’s Ports and Harbors Committee, and taught by Board Certified Port Engineers entirely online, the registrations and reviews of the initial courses have exceeded our expectations and demonstrate the need for these courses.

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