

10th Annual Energy/Facilities Connections Conference

Bricks and Mortar in a Wireless World

May 6-8, 2014 Enzian Inn • Leavenworth, Washington

WASHINGTON STATE UNIVERSITY EXTENSION ENERGY PROGRAM

www.energy.wsu.edu



Welcome to the Energy/Facilities Connections 2014 Conference Bricks and Mortar in a Wireless World

The Washington State University Energy Program would like to welcome you to the 10-year anniversary of the Energy/Facilities



Connections Conference. The theme this year – *Bricks & Mortar in a Wireless World* – speaks to the need to optimize efficiencies within our facilities through the use of technology and improved processes.

Let this conference be your platform to participate in discussions, ask key questions and develop professional relationships.

Carry the lessons you learn back into your own operations. I trust you will benefit greatly from your experience over the next few days. Enjoy the 10th Annual Energy/Facilities Connections Conference.

Sincerely,

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Jacob C. Fey, Director, WSU Energy Program



Partners: Northwest Energy Efficiency Council, University of Washington, and Wenatchee School District.

Monday, May 5, 2014				
4:30 - 9:00 p.m.	Registration Open			
5:00 - 7:00 p.m. Continental Room	Network Connections (Pre-conference Social Networking) Sponsored by URS Electronics			
	Tuesday, May 6, 20)14		
7:00 - 9:00 a.m.	Registration (Early registration also available Monday from 4:30 to 9:00 p.m.)			
Breakfast Activities 8:00 - 8:15 a.m.	Welcome and Introductions The EFC Experience – What to Expect			
8:15 - 9:00 a.m. Continental Room	Morning Keynote Presentation: Purposeful Passion: YOU Have a Choice Lander Medlin, Vice President of APPA			
Session 1 9:30 -10:25 a.m.	(Alpine) Tech of the Future – Making Technology Work for You Speakers: Eric Sundby and Jeremy Richmond (MacDonald-Miller Facilities Solutions) and Barry Holldorf (Highline Community College)	(Danube) LED Outdoor Lighting Applications Speaker: Eric Strandberg (Lighting Design Lab)		
10:25 - 10:40 a.m.	Break			
<mark>Session 2</mark> 10:40 a.m. – 11:35 a.m.	(Alpine) Speaking the CFO Language Speaker: Lander Medlin (APPA)	(Danube) Industrial Ethernet Network Security Speakers: Kevin Speed and Russell Smith (Phoenix Contact)		
Lunchtime Activities 11:45 a.m 1:20 p.m. Continental Room	EFC Innovations Award Winners: Portland Public Schools and Pateros School District <i>Entertainment provided by Wenatchee High School Choir and Drama Clubs</i>			
Session 3 1:25 - 2:20 p.m.	(Alpine) Utility Showcase Speakers: Andy Paul (Avista Corporation), Sheryl Anayas (Puget Sound Energy), Allison Grinczel (Snohomish County PUD)	(Danube) Understanding Fire Codes and Fire and Life Safety Systems Speaker: Mary Valladares (Office of the State Fire Marshal)		
Session 4 2:25 - 3:20 p.m.	(Alpine) High-Performance Building Envelopes Speaker: Dave Seifert (BCRA)	(Danube) The Potential Impact of Wireless Sensing on Improving Energy Efficiency Speaker: Andreas Savvides (Ameresco)		
3:20 - 3:35 p.m.	Break			
Session 5 3:35 - 4:30 p.m.	(Alpine) Flooring Choices You Won't Trip Over Speaker: Merle Kirkely (Beresford Company)	(Danube) Predictive Technologies for Equipment Reliability and Longevity Speaker: Tony Simon (WSU Energy Program)		
5:00 - 7:00 p.m.	Network Connections (After-hours Social Networking) Sponsored by Siemens Industry			

Wednesday, May 7, 2014

8:00 a.m.	A full breakfast is available in the Conti	nental Room with your Enzian reservation.	
Breakfast Activities 8:00 - 8:15 a.m. Continental Room	Morning Announcements		
Session 6 8:40 - 9:35 a.m.	(Danube) How a Proactive Approach Impacts a Facilities Management Organization Speaker: Jim McCain (South Salem General Repair)	(Alpine) The Evolution of Exterior Lighting Controls and Their Impact in Today's World Speakers: Andrew Williamson (McKinstry) and Mark Carter (Echelon)	
Session 7 9:40 - 10:35 a.m.	(Danube) Uninterruptable Power Supplies (UPS) – Detecting Problems Before They Happen Speaker: Scott Burgett (Eaton) (Alpine) Integrated Pest Management (IPM) Speaker: Carrie Foss (WSU Puyallup Resear and Extension Center)		
10:35 - 10:50 a.m.	Break		
<mark>Session 8</mark> 10:50 - 11:45 a.m.	(Danube) OPR – Managing the Link Between Design and Operations Speakers: Joel Davis, Doug Smith and Kevin David (MENG Analysis) (Alpine) Integrated Cleaning and Measurement (ICM) and Adenosine Triphosphate (ATP) Testing Devices Speaker: Allen Rathey (The Healthy Facilities Institute)		
Lunchtime Activities 11:50 a.m 1:20 p.m. Continental Room	Lunchtime Keynote Presentation: The Role of Technology in Today's Transportation System Lynn Peterson, Secretary, Washington State Department of Transportation Entertainment provided by Wenatchee High School Mariachi Azteca		
<mark>Session 9</mark> 1:25 - 2:20 p.m.	(Danube) Open Direct Digital Control (DDC) Networks Speaker: Greg Jourdan (Wenatchee Valley College)	(Alpine) Global Harmonization System Certification Class, Part One Speaker: Sue Brown (WSU Energy Program)	
Session 10 2:25 - 3:20 p.m.	(Danube) Employee Engagement – How to Tell Your Story Speaker: Ray Burton (McKinstry)	(Alpine) Global Harmonization System Certification Class, Part Two Speaker: Sue Brown (WSU Energy Program)	
Session 11 3:25 - 4:30 p.m. Continental Room	Hot Shop A hands-on training with demonstrations of useful, cutting-edge energy and facilities technologies.		
4:40 - 6:30 p.m. Continental Room	Hot Shop Reconnections (After-hours Networking Event) Sponsored by the MacDonald-Miller Facilities Solutions/Honeywell Team		

Keynote Speaker Leadership Track	Technical Track	Custodial Connections
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Thursday, May 8, 2014

7:00 a.m.	A full breakfast is available in the Continental Room with your Enzian Inn reservation		
Breakfast Activities 7:35 - 8:25 a.m. Continental Room	Morning Keynote Presentation: Managing Diversity Gene Woodard, Director of Custodial Services, University of Washington		
Session 12 8:30 - 9:25 a.m.	(Danube) Combined Heat & Power in Educational, Institutional and Critical Facilities Speaker: David Sjoding (WSU Energy Program)	(Alpine) Night-to-Day Cleaning, Lessons Learned Speaker: Jeff Teal (Community College of Spokane)	
Demonstrations 9:30 - 10:00 a.m.	(Alpine) Product Demonstrations for Everyone		
<mark>Session 13</mark> 10:05 - 11:00 a.m.	(Danube) Utility Bill Analysis – How to Improve Your Bottom Line Speakers: Tony Simon and Larry Covey (WSU Energy Program)	(Alpine) Infection Prevention and Control – How Preventive and Collaborative Measures Help Make Environments Safer, Healthier and More Profitable Speaker: Allen Rathey (The Healthy Facilities Institute)	
<mark>Session 14</mark> 11:00 - 11:55 a.m.	(Alpine) Custodial Connections Roundtable An open discussion for you to ask questions and make contacts		
12:00 Noon	Adjourned		

Keynote Speaker	Leadership Track	Technical Track	Custodial Connections
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Featured Speakers



Day One – Tuesday

E. Lander Medlin Executive Vice President of APPA

Lander Medlin is the Executive Vice President of APPA: The Association of Higher Education Facilities Officers. Representing more than 1,600 institutions of higher learning in the United States, Canada, and internationally, APPA serves the needs of facilities professionals in management, planning, and development of campus facilities and provides leadership on significant facilities issues.

Prior to joining the APPA staff in 1994, Lander was the Assistant Director for Administrative and General Services for the Department of Physical Plant at the University of Maryland, College Park. She also worked for the American Physical Society, in Washington, D.C. In addition, Lander serves as the Executive Director for the Governor's Science Advisory Council for the State of Maryland.



Day Two - Wednesday

Lynn Peterson Secretary of the Washington State Department of Transportation

Appointed Secretary of Transportation in February 2013 by Governor Jay Inslee, Lynn Peterson manages an agency of 6,600 employees that is responsible for 18,600 lane miles of highway, 3,700 bridges, general aviation airports, passenger- and freight-rail programs, and the Washington State Ferries system, which is the nation's largest.

As the Washington State Department of Transportation nears completion of the agency's largest construction program in its history (\$16.3 billion), Peterson brings a renewed focus on efficiencies, accountability and investing in a multimodal system.



Day Three – Thursday

Gene Woodard Director of the Custodial Services Division, University of Washington

Gene Woodard has served as Director of Custodial Services at the UW since 1985. Prior to that, he was Director of Environmental Services at Emanuel Hospital in Portland, Oregon.

Woodard has over 29 years of experience in custodial operations. His current responsibilities include leading a department of 325 employees who service approximately 11 million square feet in 175 buildings on the UW Seattle campus.

He is a past president of the International Executive Housekeepers Association (IEHA) 2000-02 and is a member of the International Sanitary Suppliers Association (ISSA).

Woodard has recently been featured on an ISSA short educational video on the subject of leading teams of cleaning professionals.

Day One – Tuesday, May 6

Session 1

Leadership Track **Tech of the Future – Making Technology Work for You**

Speakers: Eric Sundby and Jeremy Richmond (MacDonald-Miller Facilities Solutions) and Barry Holldorf (Highline *Community College*)

Synopsis: Rapid and dynamic developments in technology these days have reshaped how facilities leaders approach their day-to-day responsibilities. Discover how cutting-edge technology can bring a facility's operation into the future by optimizing its energy efficiency and maintenance effectiveness.

Technical Track LED Outdoor Lighting Applications

Speaker: Eric Strandberg (Lighting Design Lab)

Synopsis: With the remarkable recent improvements in LED technology, this is a great time to rethink exterior lighting. This presentation will examine key attributes of LEDs and compare them to incumbent light sources, while addressing key design issues that can impact exterior lighting design.

Session 2

Leadership Track Speaking the CFO Language Speaker: Lander Medlin (APPA)

Synopsis: Getting budget approval for energy and facility projects can be among the greatest challenges of facilities leaders, especially when the advantages of the project are not clearly explainable. This session will focus not only on how to present your proposal, but what language to consider, what aspects of the project

to focus on and what components may be less important. Join Lander as she shares the "water cooler" talk of CFOs and provides attendees with a peek into the world of non-facilities members of the management team in order to optimize communications.

Technical Track Industrial Ethernet Network **Security**

Speakers: Kevin Speed and Russell Smith (Phoenix Contact)

Synopsis: In today's highly connected world, office and industrial networks are more interconnected than ever before. Control networks are now exposed to many of the same security vulnerabilities that have historically plagued enterprise networks. This presentation will offer technical recommendations to better secure control system infrastructure while improving network reliability and allowing remote access and data exchange.

Session 3

Leadership Track **Utility Showcase**

Speakers: Andy Paul (Avista Corporation), Sheryl Anayas (Puget Sound Energy) and Allison Grinczel (Snohomish County PUD)

Synopsis: This year's EFC Utility Panel will take a different format to better meet the audience's needs. Instead of a typical classroom setup, audience members will have the opportunity to speak with their utility provider and hear about new programs and updates. One of the greatest needs of any facilities manager is money don't miss your chance to find out how to get it.

Note: All sessions subject to last-minute changes.

Technical Track Understanding Fire Codes and Fire and Life Safety Systems

Speaker: Mary Valladares (Office of the State Fire Marshal)

Synopsis: Avoid getting burned when it comes to making fire safety preparations. Mary will share educational stories as they pertain to fire code changes, discuss the basics of sprinkler and fire alarm systems. and provide insight and guidance regarding fire extinguishers.

Session 4

Leadership Track High-Performance Building Envelopes Speaker: Dave Seifert (BCRA)

Synopsis: Learn about the what, why, when and how of high-performance building envelopes. Discover factors that can cause building envelopes to fail. Learn about critical design features that can help reduce energy loss and enhance envelope life, which can reduce the lifetime costs of building ownership.

Technical Track The Potential Impact of Wireless **Sensing on Improving Energy** Efficiency

Speaker: Andreas Savvides (Ameresco)

Synopsis: Energy information awareness is rapidly gaining momentum across North America. loin Andreas as he describes how the effective use of wireless sensing systems can be applied to harvest actionable information to enhance energy efficiency. Starting from the building portfolio level and drilling down to individual sub-meters and sensing points, new information processing tools can be applied to identify savings opportunities, prioritize projects and track progress. The presentation will draw examples from

recent case studies to demonstrate how the convergence of networking and wireless systems is prompting information-driven energy efficiency.

Day Two – Wednesday, May 7

Session 6

Leadership Track

How a Proactive Approach Impacts a Facilities Management Organization Speaker: Jim McCain

(South Salem General Repair)

Synopsis: For Jim, reactive maintenance is like having facilities staff extinguish fires all day. If your facility is stuck in the rut of reactive maintenance, how do you move to a more proactive operational culture? Join Jim as he discusses why preventive maintenance is crucial and learn how to engage decision makers in supporting this model.

Technical Track

The Evolution of Exterior Lighting Controls and Their Impact in Today's World Speakers: Andrew Williamson (McKinstry) and Mark Carter (Echelon)

Synopsis: Exterior lighting controls used to be on and off, be it by switch, sensor or time clock. This session will discuss advances and integration of lighting controls and their impact on operations and maintenance of today's lighting options.

Session 7

Technical Track Uninterruptable Power Supplies (UPS) – Detecting Problems Before They Happen Speaker: Scott Burgett (Eaton)

Synopsis: Wireless networks offer network designers many advantages over wired networks. However, they still require a reliable power source to operate effectively. As a result, the trend of wireless networking is contributing significantly to recent trends in the design and application of UPS by creating higher efficiency designs in smaller rack-mount UPS and implementing the replacement of legacy systems that will improve efficiency and reliability.

Custodial Connections Integrated Pest Management (IPM)

Speaker: Carrie Foss (WSU Puyallup Research and Extension Center)

Synopsis: Integrated pest management touches our lives in our homes, offices and schools. Indoors and outdoors, managing pests is a concern whenever people and pests live in close proximity. Learn what integrated pest management means and how to begin implementing it at your facility.

Session 8

Leadership Track OPR – Managing the Link Between Design and Operations

Speakers: Joel Davis, Doug Smith and Kevin David (MENG Analysis)

Synopsis: Learn why the OPR (Owner Project Requirements) is the missing link between design and operations, wishful thinking and proven results, and code minimum and high performance. Join the MENG Analysis team as they reveal how integrating project management, design delivery, operations and the OPRs can bridge the gap between facility design and long-term operations. The OPR is required for most building projects funded by the State of Washington but is rarely used in practice, which is often the reason for performance disappointments.

Session 5

Leadership Track Flooring Choices You Won't Trip Over Speaker: Merle Kirkely (Beresford Company)

Synopsis: With so many options in the flooring industry these days, making the best choice to optimize effectiveness and longevity can be tricky. Let Merle guide you through a slew of issues to consider when choosing a floor covering product and new developments in the floor covering industry.

Technical Track Predictive Technologies for Equipment Reliability and Longevity

Speaker: Tony Simon (WSU Energy Program)

Synopsis: Have you ever had a piece of equipment suddenly fail or break down without warning? It happens more than we'd like. Join Tony as he provides insights into technologies that can help identify mechanical problems before sudden failure. Topics will include condition-based maintenance and how predictive maintenance technologies can give your maintenance team an edge in keeping operations running in tip-top shape.

Custodial Connections

Integrated Cleaning and Measurement (ICM) and Adenosine Triphosphate (ATP) Testing Devices

Speaker: Allen Rathey (The Healthy Facilities Institute)

Synopsis: Integrated Cleaning and Measurement[™] (ICM) is an open-source system in which "best practices" are defined by scientific measurement of cleaning outcomes. Join Allen as he leads you into the world of ICM: its significance, implementation process and measurement methods. Let ICM assist you in improving the value of your cleaning operations to your organization.

Session 9

Technical Track Open Direct Digital Control (DDC) Networks

Speaker: Greg Jourdan (Wenatchee Valley College)

Synopsis: Discover practical scenarios of open DDC networks, and learn how communications among DDC controllers and DDC systems can optimize energy efficiency. This discussion will address HVAC DDC system architecture; open system interconnection models; DDC topologies and protocols; and BACnet, LonWorks and Niagara/ Tridium networks. Greg will also address common solutions to upgrade existing HVAC DDC systems, the advantages and disadvantages of open systems, and how to integrate DDC building automation systems.

Custodial Connections

Global Harmonization System (GHS) Certification Class, Part One

Speaker: Sue Brown (WSU Energy Program)

Synopsis: The Globally Harmonized System (GHS) of Classification and Labeling of Chemicals has already been incorporated into federal OSHA's Hazard Communication Standard. As a result, you may see new labels on shipped containers of chemicals that display the GHS pictograms and information. Material Safety Data Sheets (MSDSs) are starting to be phased out and replaced by Safety Data Sheets (SDSs). Learn about these updates and regulations while acquiring this certification.

Session 10

Leadership Track Employee Engagement – How to Tell Your Story

Speaker: Ray Burton (McKinstry)

Synopsis: Whether engagement is targeted at conserving energy or building facilities support, keeping occupants aware of the role of facilities is a critical aspect of successful operations. This session calls for audience interaction and participation, so bring your own success and horror stories to share with the group and join in for some hard-hitting cross-talk and idea sharing.

Custodial Connections GHS Certification Class, Part Two

Speaker: Sue Brown (WSU Energy Program)

Synopsis: Part two of the Global Harmonization System Certification Class. (See the Part One synopsis for more details.)

Session 11

Hot Shop A hands-on training with demon-

strations of useful, cutting-edge technologies in energy and facilities management.

Day Three – Thursday, May 8

Session 12

Leadership Track Combined Heat & Power in Educational, Institutional and Critical Facilities

Speaker: David Sjoding (WSU Energy Program)

Synopsis: Join the discussion about smaller-scale CHP systems and their effectiveness in a variety of education, district energy, hospital, recreational, wastewater treatment, 24/7 facilities and office building settings. This session will address advances in the physical CHP units and examine factors that should be considered in these applications.

Custodial Connections

Night-to-Day Cleaning – Lessons Learned

Speaker: Jeff Teal (Community College of Spokane)

Synopsis: Hear about how the Community Colleges of Spokane moved its custodial services from graveyard shift to day shift. From the planning process to implementation, discover what was done, successes, lessons learned, and current status.

On Wednesday, stick around after Session 11 for **Hot Shop Reconnections** – from 4:30 to 6:30 p.m. – for sponsored appetizers and beverages and additional opportunities to visit the tables you found most relevant and interesting.

Custodial Connections Product Demonstrations

Session 13

Technical Track Utility Bill Analysis – How to Improve Your Bottom Line

Speakers: Tony Simon and Larry Covey (WSU Energy Program)

Synopsis: If looking at your utility bill leaves you confused or you haven't even seen them, this is the session for you. Learn how to analyze your utility bill, discover tools to help reduce your energy consumption, and gain insight to help you eliminate unnecessary costs and regain control of your utility bill situation.

Custodial Connections

Infection Prevention and Control – How Preventive and Collaborative Measures Help Make Environments Safer, Healthier and More Profitable

Speaker: Allen Rathey (The Healthy Facilities Institute)

Synopsis: Prevention is better than cure, and this session will show you why, while making the case that better cleaning is the main avenue to reduce infections. It will also outline safer disinfection strategies and show how cooperative efforts with other departments can reduce illness and the need for harsh disinfectants.

Session 14

Custodial Connections Custodial Roundtable

Be sure to take the Conference Survey online: www.energy.wsu.edu/ efcsurvey2014

EFC Innovations Award

The EFC Innovations Award, given out at the annual Energy/Facilities Connections Conference, recognizes the innovative solutions you have implemented, provides an opportunity for others to learn from your success, and encourages the cross-pollination of ideas.

Eligibility

- Public, nonprofit and tribal organizations are eligible.
- Attendance at an EFC event is not required.
- Innovations must be facilities-related, such as fresh ideas about maintenance, custodial services, new construction and renovation, security, grounds maintenance, and emergency preparedness.

If you are not sure if your innovation applies, please contact the EFC Planning team: 360-956-2057 or *plantops@energy.wsu.edu* (add "EFC Innovations Award" in the subject line).

Submission Details

- Submission forms are available at the EFC registration table or online: www.energy.wsu.edu/PublicFacilitiesSupport/ PlantOperations/EFCInnovationsAward.aspx.
- There is no limit on the number of case studies an organization can submit.
- Submissions are accepted all year, but to be eligible for the 2015 EFC conference, the submission deadline is Monday, March 2, 2015.

Award Details

Winners of the EFC Innovations Award will receive:

- A plaque,
- One free registration for the 2015 EFC Conference, and
- An article that highlights your organization and innovation in the Plant Operations Support Consortium's newsletter *Shop Talk*.

The Plant Operations Support Consortium is a

self-sustaining, membership-based organization within the Washington State University Energy Program.

Our mission is to connect facilities professionals – from state agencies, schools, higher education, ports, tribes, nonprofits, utilities and municipalities – with a wealth of technical information and expertise.

We are your on-call team of experts, ready to offer solutions and suggestions on subjects including:

- Energy efficiency
- Facility management assistance
- Custodial operations support
- Technical assistance and consultation
 - No-fault effectiveness assessments
 - Equipment brokering

Talk to us about becoming a member!

Washington State University Energy Program

Plant Operations Support Consortium

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Who We Are

The **Washington State University (WSU) Energy Program** is a self-supported department within the University. Partnering with a wide range of agencies, organizations, institutions and businesses, our energy experts identify energy challenges and develop solutions based on worldclass research. Operating much like a consulting firm, we provide training and technical assistance to help our customers meet evolving energy challenges in the Pacific Northwest, across the U.S. and around the world.

The Plant Operations Support Consortium

includes members from throughout the region:

K-12 Schools

Bridgeport Camas Centralia Delta, British Columbia Enumclaw ESD 101 ESD 114 ESD 121 Federal Way Forest Ridge School of the Sacred Heart Highline Hoguiam Inchelium North Thurston Odessa Olympia Orcas Island Orondo Pateros Portland, Oregon Reardan-Edwall Renton San Juan Island Selkirk Wenatchee Wishkah Valley

Universities/Colleges

Bates Technical College Bellevue College Clark College Columbia Basin College Community Colleges of Spokane Edmonds Community College Everett Community College Highline Community College Lake Washington Institute of Technology Olympic College Peninsula College Pierce College Seattle Central **Community College** South Puget Sound Community College The Evergreen State College Washington State University **Energy Program** Wenatchee Valley College

Municipalities

City of Edmonds City of Hoquiam City of Puyallup City of Tumwater Clark County Jefferson County Lakehaven Utility District Lewis County Pierce County Library System Skamania County Snohomish County Thurston County Whatcom County

Miscellaneous

Hopelink Multicare System Sound Transit Squaxin Island Tribe

State Agencies

Corrections Ecology Health Licensing Natural Resources Parks & Recreation School for the Blind Social & Health Services State Patrol Transportation Veteran's Affairs

