2019 Federal Environmental Symposium

October 30-31, 2019

Theme: Federal Facilities Leading Environmental Change

National Institutes of Health

Natcher Conference Center, Bethesda, MD

The presence of non-governmental organizations and speakers at the 2019 Federal Environmental Symposium, and their presentations, does not constitute or imply the committee's, FedCenter's, or any of its member government entities', endorsement, recommendation, or favoring of such non-governmental organizations or speakers.

Table of Contents

Welcome Letter from Committee

Agenda

Tours

Tour/Workshop Descriptions

Abstracts

Exhibitors

Information on NIH

Committee Members

2021 Federal Environmental Symposium

Bios

Welcome Letter from Committee

Dear 2019 Federal Environmental Symposium Attendees,

The Planning Committee is excited to welcome you all to Bethesda, Maryland for our 2019 Federal Environmental Symposium. The Planning Committee is delighted to bring together expertise from the Federal, State, private and academia for the benefit of the Federal community.

First held annually at NIH Bethesda from 2002-2009 the Symposium provided an opportunity for federal environmental staff to share best management practices and network. Federal staff developed the content and presented information for the use of their peers. Later the event was retitled "GreenGov," managed by the Federal Environmental Executive (FEE) from 2010 – 2016. EPA and NIH recognized the need for sharing of BMPs again and proposed reigniting the event to support an ongoing need for federal environmental staff to network.

With this year theme, "Federal Facilities Leading Environmental Change," we want to offer a variety of presentations that will stimulate environmental changes and network to help each other resolve common problems. But also, to create the foundation for future conferences focus on the Federal sector.

We need to inform you that the presence of non-governmental organizations and speakers at the 2019 Federal Environmental Symposium, and their presentations, does not constitute or imply the FedCenter's, or any of its member government entities', endorsement, recommendation, or favoring of such non-governmental organizations or speakers.

The Planning Committee wish you all an enjoyable and productive conference. For those coming from outside of the DC metropolitan area, we hope you enjoy your stay.

Best regards,

2019 Symposium Committee

2019 Federal Environmental Symposium

October 30-31, 2019
NIH Natcher Conference Center
Theme: Federal Facilities Leading Environmental Change
Sponsored by: Federal Sector

TIME	Day 1 - Wednesday							
8:00 -9:00	Registration							
9:00-9:05	**Welcome Remarks - Kenny Floyd, NIH**							
9:05-10:00	**Dr. Alfred Johnson**, Deputy Director for NIH Management and Chief Financial Officer **Alexandra Dapolito Dunn**, Assistant Administrator for EPA's Office of Chemical Safety and Pollution Prevention **Susan Bodine**, Assistant Administrator for EPA's Office of Enforcement and Compliance Assurance							
	Track 1 **Waste Reduction and Recycling** Track Moderator: Emily Prettyman **Room: F1/F2**	Track 2 **Sustainability I** Track Moderator: Sarah Jensen **Room: E1/E2**	Track 3 **Energy and Water Efficiency/Watersheds** Track Moderator: Diana Hirshfeld **Room: Balcony C**	Track 4 **Sustainable Federal Properties** Track Moderator: Karen Waldvogel **Room: Balcony A**	Track 5 **Environmental Resiliency** Track Moderator: Steve Bruno **Room: C1/C2**	Track 6 **Environmental Compliance** Track Moderators: Justin Young, Melanie Garvey **Room: Auditorium**	Track 7 **Protection of Natural Resources/ Best Environmental Practices** Track Moderators: John Galbraith, Dave Sperry, Sasha Tetzlaff **Room: D**	Track 8 **Environmental Management Systems (EMS)** Track Moderator: Steven Davis **Room: Balcony B**
10:00-10:15	Break	Break	Break	Break	Break	Break	Break	Break
Breakout Session 1 10:15-11:45	1.1 **Dumpster Diving 101: The Waste Game** **Angela Urban**, U.S. Army Corps of Engineers, Construction Engineering Research Laboratory	2.1 **Your Agency's First Solar Project** Session Moderator: Mike Sandler **Mike Sandler**, U.S. Department of Justice, Drug Enforcement Agency **Chandra Shah**, **Doug Gagne**, U.S. Department of Energy, National Renewable Energy Laboratory	3.1 **Contracting for Water & Energy Efficiency** **Clayton Johnson**, U.S. Department of Energy, Lawrence Berkeley National Laboratory	4.1 **Sustainable Solutions for Federal Landscapes** Session Moderator: Ray Mims **Ray Mims**, U.S. Botanic Garden **Maureen Alonso**, U.S. General Services Administration - Regional Horticulture **James Gagliardi**, Smithsonian Gardens **Lauren Mandel**, Andropogon & Associates	5.1 **Conducting Vulnerability Assessments & Building Federal Agency Preparedness Capacity** **Daniel Kreeger**, Association of Climate Change Officers	6.1 **Self-disclosing Violations to EPA: Why Do It and How** **Dominique Freyre**, U.S. Environmental Protection Agency, Federal Facilities Enforcement Office **Gary Jonesi**, **Phil Milton**, **David Smith-Watts**, U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance **Kenneth Duncan**, U.S. Army Corps of Engineers	7.1 **Stretching Our Capabilities and Focusing Our Competencies for Increased Oversight Effectiveness** Session Moderator: Karen Armijo **Darlene Rodríguez**, U.S. Department of Energy, Los Alamos Field Office **Tertia Speiser**, U.S. Department of Energy, Golden Field Office **Larry Palmer**, **Al MacDougall**, U.S. Department of Energy, Office of Enterprise Assessments National Training Center	8.1 **Risk Based EMS Auditing** Session Moderator: Catherine Johnson **Jody McClarin**, U.S. Department of Veterans Affairs, Veterans Health Administration
11:45 - 12:45	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
Breakout Session 2 12:45-1:15	1.2 **Waste Reduction Techniques** Session Moderator: Abigail Brake **Abigail Brake**, U.S. Army Corps of Engineers, Construction Engineering Research Laboratory **Terry Foecke**, U.S. Department of Energy, Los Alamos National Laboratory	2.2 **EPEAT Purchaser Award Winners: Best Practices on Procuring Sustainable Electronics** Session Moderator: Terrance Glover **Terrance Glover**, Green Electronics Council **Dawn Gunning**, U.S. Department of Homeland Security, Office of the Chief	3.2 **Leverage Procurement Data to Achieve Energy Savings and Improve Program Effectiveness** Session Moderator: Kevin Funk **Molly Morabito**, **Liyang Wang**, **Sravan Chalasani**, U.S. Department of Energy, Lawrence Berkeley National Laboratory	4.2 **Sustainability and New Facilities** **Sustainability in New Construction, Fort Yuma Health Care Center** **Richard Wermers**, **Michael Young**, U.S. Department of Health and Human Services, Indian Health Services **Blending Well With Green**	5.2 **The U.S. Climate Resilience Toolkit: Going Beyond Data to Data-based Answers to Decision Makers' Questions** **David Herring**, U.S. Department of Commerce, National Oceanic and Atmospheric Administration	6.2 **Environmental Management at Federal Facilities: U.S. Army Corps: Environmental Management Tools: FedCenter** **Steve Luzzi**, U.S. Army Corps of Engineers, Construction Engineering Research Laboratory	7.2 **Landscaping with Meadows: The Smart, Sustainable Alternative to Turf Grass** Session Moderator: Lori Levine **Janine Pollack**, **Darlene Squibb**, National Aeronautics and Space Administration, Goddard Space Flight Center	8.2 **Using EMS to Navigate Changing Environmental Priorities** **Laura Winter, Steven Davis**, U.S. Department of Justice, Drug Enforcement Administration

Breakout Session 3 1:15-1:45	**Lucy Aistis**, **Jaroslav Sebek**, U.S. Department of Health and Human Services, National Institutes of Health	Readiness Support Officer **David Harrity**, U.S. General Services Administration, Enterprise Infrastructure Operations		**Jeffery Williams**, U.S. Department of Defense, National Security Agency		6.3 **U.S. Army Corps: 25 Years of Team Guide Assessments** **Peter M. Heinricher**, U.S. Army Corps of Engineers, Construction Engineering Research Laboratory	7.3 **Joint DoD Agency - Georgia County Wastewater Treatment Partnership** **Gordon Taylor**, U.S. Air Force Life Cycle Management Center	8.3 **Implementing Multi-Site NIH Environmental Management System** Session Moderator: Paul Johnson **Bani Bhattacharya**, **Bill Steinmetz**, U.S. Department of Health and Human Services, National Institutes of Health
1:45 -2:00	Break	Break	Break	Break	Break	Break	Break	Break
Breakout Session 4 2:00-2:30	1.4 **Recycling Markets: How To Get The Most Value From Recycling** Session Moderator: Susannah Davidson **Susannah Davidson**, U.S. Army Corps of Engineers, Construction Engineering Research Laboratory **Jan Jackson**, **Jeannette Widman**, U.S. Department of Energy, Y-12 National Security Complex **Samuel McCord**, U.S. Department of Energy, Sandia National Laboratories	2.4 **Quantifying Cost Savings and Sustainability Benefits from Buying Sustainable IT Products** Session Moderator: Holly Elwood **Cate Berard**, U.S. Department of Energy, Office of Sustainable Environmental Stewardship **Jonathan Rifkin**, Green Electronics Council	3.4 **Pollution Prevention & Water Systems** **Kassidy Boorman**, **Philip Moss**, U.S. Department of Energy, Los Alamos National Laboratory	4.4 **High Performance Sustainable Existing Buildings** Session Moderator: Jeremey Alcorn **Jeremey Alcorn**, U.S. General Services Administration, Public Buildings Service **Keith Bryan**, Logistics Management Institute	5.4 **FEMP Resilience Tools and Services** **Leslie Nicholls**, **Skye Schell**, **Jay Wrobel**, **Rachel Shepherd**, U.S. Department of Energy, Federal Energy Management Program	6.4 **An EPA National Compliance Initiative: Reducing the Rate of Significant Noncompliance with Clean Water Act NPDES Permits** **Dominique Freyre**, U.S. Environmental Protection Agency, Federal Facilities Enforcement Office	7.4 **Emerging Tools for Monitoring and Managing Threatened and Endangered Species on Federal Lands** **Jinelle Sperry**, U.S. Army Corps of Engineers, Construction Engineering Research Laboratory	8.4 **Leveraging Your EMS for Energy Savings** Session Moderator: Una Song **Una Song**, **Danae Rupp**, U.S. Department of Energy, Office of Sustainable Environmental Stewardship **Jerrilyn Goldberg**, U.S. Department of Energy, Lawrence Berkeley National Laboratory
Breakout Session 5 2:30-3:00						6.5 **Above Ground Storage Tanks: What you Need to do to Comply** **Rachel Simkins**, U.S. Environmental Protection Agency, Region 3, Oil and Prevention Branch	7.5 **International Conservation of Migratory Birds through Research Collaborations - A Success Story** **James D. Ray**, U.S. Department of Energy, Pantex Plant	
3:00-3:15	Break	Break	Break	Break	Break	Break	Break	Break
Breakout Session 6 3:15-3:45	1.6 **Secure Recycling & Reporting Solutions For Electronic Assets & Ink Cartridges** Session Moderator: Dianne Shoaf **Ron Kecman**, U.S. Postal Service **Brett Apold**, ARCOA Group	2.6 **Environmental Alternatives for Rapidly Changing Military Settings** **Angela Urban**, **Christopher Ackerman-Avila**, **Heidi Howard**, U.S. Army Corps of Engineers, Construction Engineering Research Laboratory	3.6 **Nontargeted Approaches to Environmental Monitoring** **Brandon Parsons**, U.S. Department of Energy, Los Alamos National Laboratory	4.6 **Sustainable Labs** **Bani Bhattacharya, Jaroslav Sebek**, U.S. Department of Health and Human Services, National Institutes of Health	5.6 **DHS Resilience Framework** **Crystall Merlino**, U.S. Department of Homeland Security, Office of the Chief Readiness Support Officer **David Frenkel**, U.S. Department of Homeland Security, Immigration and Customs Enforcement **David Barber**, U.S. Department of Homeland Security, Federal Law Enforcement Training Centers **Michael Ahn**, U.S. Department of Homeland Security, Customs and Border Protection	6.6 **Underground Storage Tanks: The New UST Regulations** **James (Russ) Brauksieck**, U.S. Environmental Protection Agency, Office of Underground Storage Tanks	7.6 **College Underserved Community Partnership Program** **Michael Burns**, U.S. Environmental Protection Agency, Region 4, Office of the Regional Administrator	8.6 **Virtual Environmental Management Office (VEMO): The Air National Guard's Multi-Site Organizational EMS** **Kevin Shupe**, **Brooke Shaffer**, **Heather Sours**, National Guard Bureau
Breakout Session 7 3:45-4:15			3.7 **Seeking/Sharing Water Sustainability Solutions for Decentralized Systems of Supply and Wastewater** **Daryl Beardsley**, Municipal Board of Health, Sherborn, MA			6.7 **40 CFR 280 & The Exchange** **Robert Largent**, Army & Air Force Exchange Service		8.7 **Enabling Distributed Environmental Compliance Management** **Brent Allred**, Northrup Gruman Technology Services
Breakout Session 8 Tours 4:15-5:15	1.8 **NIH LEED Gold Lab Virtual Tour** Meeting Location: Auditorium **Tony Clifford**, Former Chief Engineer, U.S. Department of Health and Human Services, National Institutes of Health	2.8 **NIH Campus Tour: Sustainable Landscaping and Establishing Pollinator-friendly Habitats** Meeting Location: Main Entrance (south side) **Brandon Hartz**, U.S. Department of Health and Human Services, National Institutes of Health		4.8 **NIH Campus Recycling Program Tour** Meeting Location: Tent Area (north side) **Jaqie McGauley**, **Mansi Mehta**, U.S. Department of Health and Human Services, National Institutes of Health				

2019 Federal Environmental Symposium

Day 2 - Thursday

	Track 1 **Waste Reduction and Recycling** Track Moderator: Kenny Floyd **Room: F1/F2**	Track 2 **Sustainability I** Track Moderator: Shab Fardanesh **Room: E1/E2**	Track 3 **Energy and Water Efficiency/Watersheds** Track Moderator: Jose Jimenez **Room: Balcony C**	Track 4 **Sustainability II** Track Moderator: Cate Berard **Room: Balcony A**	Track 5 **Non-Federal Sustainability Best Practices** Track Moderator: Mansi Mehta **Room: C1/C2**	Track 6 **Environmental Compliance** Track Moderators: Justin Young, Melanie Garvey **Room: Auditorium**	Track 7 **Protection of Natural Resources/Best Environmental Practices** Track Moderators: John Galbraith, Dave Sperry, Sasha Tetzlaff **Room: D**	Track 8 **Environmental Management Systems (EMS)** Track Moderator: Debbie Rosano **Room: Balcony B**
Breakout Session 1 9:00-9:30	1.1 **Lithium Battery Recycling and Disposal** **Jordan Rivera**, U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration	2.1 **Sustainable Acquisition** Session Moderator: Vernell Thompson **Holly Elwood**, U.S. Environmental Protection Agency, Office of Chemical Safety and Pollution Prevention **Shabnam Fardanesh**, U.S. Department of Energy, Office of Environment, Health, Safety and Security **Vernell Thompson**, U.S. Department of Agriculture, Biopreferred Program	3.1 **Contracting for Water & Energy Efficiency** (repeat) **Clayton Johnson**, U.S. Department of Energy, Lawrence Berkeley National Laboratory	4.1 **DoD Sustainability Programs** Session Moderator: Linda Thompson **David Asiello**, U.S. Office of the Secretary of Defense **Cornell Sims**, Cardno	5.1 **State & Local Government Sustainability Best Practices** Session Moderator: Adriana Hochberg **Danielle Nkojo**, DC Department of Energy and Environment (DOEE) **Joan Kelsch**, Arlington County **Adriana Hochberg**, Montgomery County	6.1 **EPA's National Compliance Initiatives: Strategic Direction of the EPA's Federal Facility Enforcement Program** **Karin Leff**, U.S. Environmental Protection Agency, Federal Facilities Enforcement Office	7.1 **Bridging the Technical-to-Layperson Gap for Environmental Matters at the U.S. Postal Service** **Charlotte Parrish**, U.S. Postal Service	8.1 **Increasing the Accuracy of Employee Commuting Scope 3 Greenhouse Gas Data Using Software and Environmental Objectives** **Che Shu-Nyamboli**, U.S. Department of Energy, Sandia National Laboratories
Breakout Session 2 9:30-10:30						6.2 **New Developments in Regulating Hazardous Waste: RCRA's Hazardous Waste Generator Improvements Rule** Session Moderator: Kristin Fitzgerald **Kathy Lett**, **Mary Beth Sheridan**, **Brian Knieser**, U.S. Environmental Protection Agency, Office of Resource Conservation and Recovery	7.2 **Building Relationships and Cooperation with Partner Nations** **Linda Woestendiek**, U.S. Department of Defense - U.S. Southern Command	8.2 **Environmental Aspects: How and How Many** Session Moderator: Sara Austin **Anthony Nagel**, **Sara Austin**, U.S. Department of Energy, Hanford Site **Integrated Communication at Large Sites** **Michelle Oates**, U.S. Department of Energy, Hanford Site
10:30 -10:45	Break	Break	Break	Break	Break	Break	Break	Break
Breakout Session 3 10:45-11:15	1.3 **Electronics Property Management - Review of Current Policy, Reporting Procedures, & Bulletins** **Bob Holcombe**, U.S. General Services Administration - Property Management, Office of Government-wide Policy	2.3 **Army Medicine's Sustainability Program Adds Value to Operations** **COL John Evans**, **Elizabeth J. Keysar,** U.S. Army MEDCOM	3.3 **Net Zero Energy Warehouse** **Bill Blair**, **James Stancil**, U.S. Department of Health and Human Services, National Institutes of Health	4.3 **Federal Green Challenge Best Practices** Session Moderator: Ron Vance **Kent Foerster**, U.S. Environmental Protection Agency, Office of Sustainable Materials Management **Dianne Shoaf**, U.S. Postal Service	5.3 **Private Sector Sustainability Best Practices** Session Moderator: Peter Piergiovanni **Jeff King**, Hershey **Seth Goldman**, Co-founder & TeaEO Emeritus, Honest Tea and Executive Chair, Beyond Meat **Ramé Hemstreet**, Kaiser Permanente	6.3 **Introduction to the Final Rule on Management Standards for Hazardous Waste Pharmaceuticals and Amendment to the P075 Listing** Session Moderators: Kathy Lett, Mary Beth Sheridan **Kristin Fitzgerald**, **Laura Stanley**, **Brian Knieser**, U.S. Environmental Protection Agency, Office of Resource Conservation and Recovery	7.3 **Central Utility Plant Cooling Water Microbiological Treatment and Monitoring Program** **Don Guan**, **Ye Tao**, **Dr. Andrew Gomes**, U.S. Department of Health and Human Services, National Institutes of Health	8.3 **Environmental Management System Effective Implementation** Session Moderator: Christy Bixler **David Kumar**, U.S. Air Force **Christy Bixler**, U.S. Navy
Breakout Session 4 11:15-11:45			3.4 **Performance Contracting on the NIH Bethesda Campus** **Greg Leifer**, U.S. Department of Health and Human Services, National Institutes of Health				7.4 **Neutralizing Amines for Direct Steam Humidification Applications** **Don Guan**, **Ye Tao**, **Dr. Andrew Gomes**, U.S. Department of Health and Human Services, National Institutes of Health	

11:45 -12:45	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch	Lunch
Breakout Session 5 12:45-1:15	1.5 **America Recycles Day** **Ron Vance**, U.S. Environmental Protection Agency, Office of Resource Conservation and Recovery	2.5 **Best Practices on Building the Federal Electric Vehicle Infrastructure** **Stephanie Gresalfi**, U.S. General Services Administration, Office of Fleet Management **Tom Budinger**, U.S. Department of Justice, Federal Bureau of Investigation	3.5 **Water Efficiency in Federal Facilities** **Kate McMordie Stoughton**, U.S. Department of Energy, Pacific Northwest National Laboratory	4.5 **Federal Food Initiatives and Efforts** Session Moderator: ToiAyna Thompson **Lee Cliburn**, U.S. Department of Agriculture, Agricultural Marketing Service **Lana Suarez**, U.S. Environmental Protection Agency, Office of Resource Conservation and Recovery	5.5 **Sustainability Best Practices from Academia** Session Moderator: Nina Morris **Jason Mathias**, Johns Hopkins University **Mark Stewart**, University of Maryland **Nina Morris**, University of Virginia	6.5 **Permitting Internal Combustion Engines for Electrical Energy Generation in the State of Maryland** **William Paul**, **Mario Cora**, **Alex Paulos**, Maryland Department of Environment	7.5 **Novel Central Plant Environmental Optimization Technologies** **Don Guan, Ye Tao**, **Dr. Andrew Gomes**, U.S. Department of Health and Human Services, National Institutes of Health	8.5 **Implementing EMS at Leased USAF Industrial Facilities (GOCOs)** **Gordon Taylor**, U.S. Air Force Life Cycle Management Center
Breakout Session 6 1:15-1:45								8.6 **Part II , Baseline Surveys** **Gordon Taylor**, U.S. Air Force Life Cycle Management Center
1:45 - 2:00	Break	Break	Break	Break	Break	Break	Break	Break
Breakout Session 7 2:00-2:30	1.7 **How to Recycle in Federal Facilities** **Ron Vance**, U.S. Environmental Protection Agency, Office of Resource Conservation and Recovery	2.7 **Partnering with Industry to Build the USG EV Infrastructure** **Natalia Mathura**, Pepco **Sam Saxena**, U.S. Department of Energy, Lawrence Berkeley National Laboratory	3.7 **Using Peracetic Acid as a Disinfectant** **Martin Donahue**, **Mark Hughes**, U.S. Department of Energy, Princeton Plasma Physics Laboratory	4.7 **Executing Onsite Distributed Energy Projects** Session Moderator: Chandra Shah **Chandra Shah**, U.S. Department of Energy, National Renewable Energy Laboratory **John Bollinger**, U.S. Department of Commerce, National Institute of Standards and Technology **Elisabeth Pinsker**, U.S. General Services Administration		6.7 **Combined Heat and Power-Meeting JSC's Energy Demands for Mission Support** **John Herrmann**, National Aeronautics and Space Administration, Johnson Space Center		8.7 **Reflections from DOE Sites on Implementing EMS for 15 Years: Best Practices** Session Moderator: Una Song **Una Song**, U.S. Department of Energy, Office of Sustainable Environmental Stewardship **Morgan Gerard**, U.S. Department of Energy, Los Alamos National Laboratory **Michelle Oates**, U.S. Department of Energy, Hanford Site **Joseph Pillittere**, U.S. Department of Energy, West Valley Demonstration Project
Breakout Session 8 2:30-3:00						6.8 **The Benefits of Using Landfill Gas at NASA Goddard Space Flight Center** **Ouattara Fatogoma, Kathleen Moxley**, National Aeronautics and Space Administration, Goddard Space Flight Center		
3:00-3:15	Break	Break	Break	Break	Break	Break	Break	Break
Breakout Session 9 Tours & Workshop 3:15-4:15	1.9 **Micro Turbine Generator Tour** Meeting Location: Main Entrance (south side) **Paul Cammaroto**, Mechanical Engineer, U.S. Department of Health and Human Services, National Institutes of Health	2.9 **NIH Campus Tour: Sustainable Landscaping and Establishing Pollinator-friendly Habitats** Meeting Location: Main Entrance (south side) **Brandon Hartz**, U.S. Department of Health and Human Services, National Institutes of Health				6.9 **Ask the Inspector (ATI) Workshop** **Wilbur Martínez**, EPA Region III (RCRA) **Michael Prescott**, EPA Contractor (CAA) **Garth Connor**, EPA Region III (CWA) **Andrew Seligman**, EPA Region III (CWA) **Kelly E. Crawford**, DC Department of Energy & Environment **Joyce Johnson**, EPA Region VI		
Breakout Session 10 Workshop *cont.* 4:15-5:15								

Tours

Day 1- 4:15pm- 5:15pm

NIH LEED Gold Lab Virtual Tour- *Tony Clifford- Former Chief Engineer, U. S. Department of Health and Human Services, National Institutes of Health.*

NIH Campus Tour: Sustainable Landscaping and Establishing Pollinator-friendly Habitats- *Brandon Hartz, U.S. Department of Health and Human Services, National Institutes of Health.*

NIH Campus Recycling Program Tour- *Jacqie McGauley and Mansi Mehta, U.S. Department of Health and Human Services, National Institutes of Health.*

Day 2- 3:15pm-4:15pm

NIH Campus Tour: Sustainable Landscaping and Establishing Pollinator-friendly Habitats- *Brandon Hartz, U.S. Department of Health and Human Services, National Institutes of Health.*

NIH Clinical Center Dual Purpose Micro Turbine Generator Tour- *Paul Cammaroto- Community Liaison Office, Greg Leifer, Energy Engineer, U.S. Department of Health and Human Services, National Institutes of Health.*

Ask the Inspector Workshop (3:15pm-5:15pm) - *Wilbur Martinez, EPA Region III (RCRA), Michael Prescott, EPA Contractor (CAA), Garth Connor, EPA Region III (CWA), Andrew Seligman, EPA Region III (CWA), Kelly E. Crawford, DC Department of Energy & Enivronment.*

2019 Environmental Symposium Tours /Workshop Descriptions

NIH Clinical Center Dual-Purpose Micro Turbine Generator

(Day 2, 3:15PM – 4:10PM)

CRC Pressure Reducing Steam Turbine Electric Generator
NIH has installed equipment in the Clinical Research Center (CRC) that is a perfect example of a sustainable practice. At the CRC, a Pressure Reducing Steam Turbine Electric Generator was installed in 2017. It provides 638 Kilowatts of power and produces an annual energy output of approximately 2,817,400 Kilowatt-hours or approximately 300,000 dollars' worth of electricity per year. The unit is normally operated during the cooler months of the year when the steam flow to the building is sufficient to efficiently generate electricity. The Steam Turbine serves two purposes: 1) It is used as a parallel steam path with the Steam pressure reducing station, and, 2) it produces electricity from a process that once had no other purpose other than to reduce steam pressure.

NIH Campus Recycling Tour

(Day 1, 4:15PM – 5:15PM)

The NIH Bethesda campus recycled 7,640 tons of material in 2018! The NIH Environmental Policy identifies our commitment to pollution prevention and sustainable practices, while reducing resource consumption through integrated waste management.

The NIH offers its 310-acre campus community a full-scale recycling program for various wastes present in all aspects of campus operations. This recycling tour offers a look into the hub of NIH's recycling operations and an opportunity to see various processing, packing, and storage of materials to be recycled. Learn how the NIH meets various recycling mandates while also promoting voluntary recycling initiatives that are innovative and sustainable.

Please note: This walking tour will require a five-minute walk from the Building 45 loading dock to Building 25, walking up about four stairs, and about five minutes of machinery noise to showcase material processing. Closed-toe shoes are required for this tour.

NIH Sustainable Landscaping and Establishing Pollinator-Friendly Habitats

(Days 1, 4:15PM – 5:15PM; Day 2, 3:15pm-4:15pm)

Come on a tour of the National Institute of Health (NIH) campus grounds with NIH Landscape Architect Brandon Hartz PLA LEED AP. Mr. Hartz will provide guidance on establishing wildlife-friendly and pollinator-friendly habitat along with tours of sustainable landscaping on various campus sites. The NIH Bethesda campus is an interesting and ever evolving case study in land stewardship. Mr. Hartz will share his successes and challenges in trying to responsibly steward the NIH Bethesda campus for the long-term benefit of staff, patients, visitors, and natural wildlife, including pollinators. Many of the successes to be shared were borne from no cost or low-cost maintenance initiatives and could practicably be implemented on a more widespread basis on other federal lands.

NIH LEED Gold Lab Virtual Tour

(Day 1, 4:15PM - 5:15PM)

Learn about the green features in Building 35A Porter Phase II, a LEED Gold Lab building, and how they compare with Phase I built 10 years earlier. You will also receive a brief overview of campus wide

environmental initiatives summarized in a Green Features booklet. The tour will be virtual via power point which will cover a variety of green measures implemented on the NIH campus. Tony Clifford, former director of Engineering Services and NIH Chief Engineer 2003-2019 leads the presentation and can share his wealth of knowledge working at the NIH over 50 years.

Ask the Inspector Workshop

This workshop known as "Ask the Inspector Workshop" is intended for federal personnel who are involved in environmental compliance activities. This training concept will provide a framework to help identify and manage potential compliance issues affecting the federal sector. The panel is formed by experienced compliance inspectors ready to address your questions. This panel will cover the following areas: Clean Water Act (CWA), Clean Air Act (CAA), Underground Storage Tanks (RCRA-I), Spill Prevention, Control and Countermeasure (SPCC), and Hazardous Waste (RCRA-C).

"PFAS Meet and Greet"

We are hosting a closed-door, federal agency participation-only, meeting which will provide an opportunity for federal agency staff to meet other federal agency staff who are working on PFAS topics. The PFAS Meet and Greet may assist in future collaboration. This is a closed-door meeting by invitation only. For more information please contact Melanie Garvey at 202-564-2579 or via e-mail at Garvey.Melanie @epa.gov.

Time: 8:00 to 8:45 a.m. on Thursday, October 31, 2019

“Mercury in Labs Meeting”

Mercury has been in used for many years at our labs. Cleaning a mercury spill or remodeling a lab presents some technical challenges. The purpose of this closed-door meeting is to share information and remediation practices. But also, to identify other players within the federal sector dealing with this issue. This is a closed-door meeting by invitation only. For more information please contact Kenny Floyd at 240-461-2136 or via e-mail at kenny.floyd@nih.gov.

Time: Noon to 12:45 a.m. on Thursday, October 31, 2019

Abstracts

Day 1

Breakout Session 1

1.1 ***Dumpster Diving 101: The Waste Game***

Why waste? No one thinks about waste. Even the word itself leads us to immediately discard it. It is typically not until the trash can is overflowing, or immediately in our face in some other unpleasant way, that we start to take notice. Executive Order 13834, Efficient Federal Operations prioritizes the need to reduce waste, cut costs and enhance resiliency to accomplish agency missions. In support of these goals I have performed waste assessments at U.S. Army installations throughout the world. This is a problem-solving training workshop that will introduce federal attendees to waste assessments through hands-on interaction with waste. The focus will be on waste assessment methods specifically designed for installations and federal facilities. A strong component of this session will also be the avenues for reuse and recycling of the different types of waste streams and how to initiate public-private partnerships to reach waste reduction goals. There are three phases to the training workshop: Dumpster Diving, Waste Analytics, and Market Matters. Prior to each phase, attendees will receive a brief presentation on the relevancy to federal facilities and how to implement in real life as the game progresses. 1) Learn how to categorize by waste type. 2) Identify waste generation trends by building types. 3) Determine waste intensity factor by usage type (i.e. square footage and/or per person). 4) Identify specialized diversion opportunities (local and national scale). Note: This game was written and created by Angela Urban (2018). All contents cannot be copied without authorization of the author.

2.1 ***Panel Theme:*** **Your Agency's First Solar Project**

This presentation will discuss how to overcome the initial obstacles to move forward with a renewable energy and/or performance contracting project. What stars need to align for a project to gain momentum? How can you move your idea from "that would be nice if we had the resources" to "this is a priority for our agency"? The session will explain how energy performance contracting can finance a project with no money down that pays for itself. The session will include an overview of the typical project implementation phases and best practices based on implemented solar projects and strategies for evaluating and making the business case for an onsite solar project.

3.1 ***Contracting for Water & Energy Efficiency***

Federal buyers are required to purchase energy efficient products by statute and executive order. In addition, energy-efficient procurement offers substantial energy and financial savings potential throughout the federal government. This training will offer federal contracting officers with a concise introduction to the process of procuring energy-efficient products and will include actionable guidance as it applies throughout the contracting process. Specifically, this training will cover the benefits of energy-efficient product procurement; federal requirements to purchase energy-efficient products; covered product categories subject to efficiency requirements in product and service contracts; how to write compliant contracts that effectively communicate efficiency requirements to vendors; how to verify the delivery of energy-efficient products; and how to utilize FEMP and ENERGY STAR web material to support these activities.

4.1 ***Panel Theme:*** **Sustainable Solutions for Federal Landscapes**

As new federal facilities are built or existing ones renovated a substantial impact can come from the implementation of sustainable landscape design and practices. This presentation will be of interest to building managers, those that oversee landscapes, and other land managers. The presentation will highlight federal landscapes that are beautiful, sustainable using reduced landscape maintenance through practices such as decreased or no mow, landscape practices for the reduction in potable water and fertilizer use, how the use of plantings can lower building energy demands. The presenters will also illustrate innovative storm water management (through the use of rain gardens and cisterns), landscapes that support pollinator habitat in urban areas composting, and other Best Management Practices.

5.1 ***Conducting Vulnerability Assessments & Building Federal Agency Preparedness Capacity***

Course participants will receive an introduction to available information sources and tools and a template to help assess an agency's climate risks and current resilience. Attendees will learn how to define climate-related hazards and differentiate their impacts, develop a systems perspective on their agency's current vulnerabilities and strengths, and evaluate the most critical vulnerabilities for their organization. The session will also include findings from a 2016-2019 research project conducted on behalf of the U.S. Department of Homeland Security to evaluate workforce capacity to engage in climate preparedness with respect to critical infrastructure sectors, and related Federal agency oversight and operations. Learning objectives will include: clarifying relevant terminology; understanding the basics of risk analysis framework and risk management approaches (i.e. defining criticality, prioritizing vulnerabilities), and incorporating climate change into risk analysis activities, strategies and portfolios; learning about vulnerability assessments and natural catastrophe modeling, and the resources necessary to undertake vulnerability assessment work; grasping timeframes and frequency of different climate hazards, aligning these with decision making processes, and effectively communicating about these issues; and, building an organization-wide strategy for elevating workforce readiness to integrate climate preparedness into decision-making and planning.

6.1 ***Panel Theme:*** **Self-disclosing Violations to EPA: Why Do It and How**

On May 15, 2018, EPA announced renewed support of the Audit Policy and the Agency's automated self-disclosure portal. Under EPA's 2000 Audit Policy, facilities (both federal and non-federal) that voluntarily discover, promptly disclose, and expeditiously correct violations of environmental law are eligible for significant mitigation of gravity-based penalties. In December 2015, EPA introduced the e-disclosure portal, which allowed EPA to receive and automatically process self-disclosures of civil violations of environmental law. Through ongoing dialogues with representatives of several federal agencies, EPA understands that many federal agencies are reluctant to submit environmental disclosures to EPA for a myriad of reasons. The goal of this session is to present relevant background information on the Audit Policy, including incentives for disclosing, explain how disclosures are handled in the e-disclosure portal, dispel misconceptions about disclosing environmental violations, and demonstrate how to utilize the e-disclosure portal for first time users.

7.1 ***Panel Theme:*** **Stretching Our Capabilities and Focusing Our Competencies for Increased Oversight Effectiveness**

A panel discussion on applying a risk-based oversight approach and application towards resource allocation and oversight decisions at the management level. The panel will explore the DOE Technical Qualification Program functional area oversight process and supporting training, as well as efforts to benchmark best practice efforts across the Complex. Panelists include: Darlene Rodriguez, Landlord & Stewardship Programs for Mission Assurance & Infrastructure, NNSA Los Alamos Field Office (NA-LA) Larry Palmer, Program Manager, Federal Technical Capabilities Program and Safety Leadership Training, Office of Enterprise Assessments National Training Center (EA-50) Al MacDougall, Program Manager, DOE Oversight Training, Office of Enterprise Assessments National Training Center (EA-50).

8.1 ***Risk Based EMS Auditing***

The Veterans Health Administration implemented ISO 14001 Environmental Management Systems (EMS) in 2005 to meet E.O. mandates and continues to use the current ISO standards in managing their environmental legal requirements. Their national program includes oversight of medical center environmental programs by regional managers who conduct annual outside party audits and provide monitoring of follow up actions to continually improve their programs. Changes in EO mandates and ISO standards provided the opportunity to improve on the VHA's auditing program and change the program to a data driven compliance based auditing format. This workshop will go over the pilot audit evaluation process, tools, challenges, results, and proposed changes in national policy. This session will include demos of checklist, data analysis tools, and implementation guidance.

Breakout Session 2

1.2 ***Panel Theme*****: Waste Reduction Techniques**

Diving Waste Deep: Informing Best Management Practices and Sustainable Solutions for Army Installations

Waste management costs millions of dollars each year to maintain across the Army world-wide. Many of the materials paid for by the Army to be taken to the landfill have value and potential if utilized differently. Waste characterizations are one way to provide Installations with the detailed information needed to best inform waste management practices. This can tell decision makers what materials are being sent to/diverted from the landfill, and the quantity of these materials by building type annually for an entire Installation. Knowing this information is

crucial to determining alternative disposal methods for valuable materials, waste reduction at the source, and whether or not establishing new programs to combat these problematic areas are cost-effective. Every Installation is unique in its mission, size, location, and more. All of these factors influence waste composition and resources available to waste management programs, and what alternative methods for waste management can be implemented. Understanding waste composition across an Installation informs innovative ideas of waste reduction and diversion that enable Federal facilities to lead environmental change.

What Got Us Here Won't Get Us There: Achieving Integrated Source Reduction and Environmental Progress While Supporting Institutional Mission
Pollution prevention must return to its roots as a technical approach to resource use optimization in order to be effective in a world of strained budgets where alarm is often emphasized over analysis. The potential exists for pre-regulatory risk management through adoption of source reduction extremely early in project planning. A side benefit is a spin-off of innovation in materials and processes that make "selling" pollution prevention almost irrelevant: subsidies need not apply. Raising awareness, disseminating information, conducting assessments all worked well to promote pollution prevention for almost 30 years. But a reliance on extrinsic motivation is no longer adequate, and this presentation will lay out the elements of an approach to pollution prevention that is durable, fundable and can support the mission of complex organization like national laboratories. This is a path to going beyond "mere" regulatory compliance and achieving durable environmental progress.

Recycle Right to Reduce Contamination in Cafeteria Recycling
The NIH Office of Research Facilities (ORF) and Office of Research Services (ORS) have established the ORF/ORS Green Team to increase the environmental sustainability of the ORF, ORS and the NIH. The ORF/ORS Green Team conducted recycling campaign, which the team named "Recycle Right", to increase recycling rates in the cafeterias at the NIH Bethesda Campus. When the team began this initiative, only 10% of materials put in the cafeteria recycling bins at the NIH Bethesda Campus were able to be recycled. Recycling bins were contaminated with plastic bags, food, compostable silverware, paper and other materials that belonged in the trash. The waste management contractor may remove a few contaminants from a recycling bin however, when the contractor determines there is too much contamination in a recycling bin the entire bin's contents must be placed in the trash. Through outreach events and talking with the recycling contractor the team found that the common contaminants in the cafeteria recycling bins were: compostable silverware, plastic bags, paper and unwashed food containers. This team created recycling media that detailed what could be recycled in the commingled recycling bins in the cafeterias at the NIH Bethesda Campus with a focus on the common contaminants. Media included: posters, flyers, tent cards and a Recycle Right video.

2.2 *Panel Theme:* EPEAT Purchaser Award Winners: Best Practices on Procuring Sustainable Electronics

Many agencies acknowledge the value of incorporating sustainability into their organizational processes but are unsure of how to balance such considerations with other priorities and existing requirements. During this panel, the Green Electronics Council will provide an overview of the EPEAT ecolabel for electronic products, and speakers from the Department of Homeland Security and the General Services Administration will share their experiences and insights for procuring sustainable IT equipment. They will also discuss the internal and external value of being recognized as EPEAT Purchaser Award winners.

3.2 *Panel Theme*: Leverage Procurement Data to Achieve Energy Savings and Improve Program Effectiveness

Understanding the Significance of Energy-Efficiency in the Federal Procurement Community
Federal buyers are currently required by five legal authorities to purchase energy-efficient products in an effort to reduce government energy use and save taxpayer dollars. Implementing this mandate is challenging for federal agencies given the decentralized federal procurement structure, extensive and sometimes conflicting purchasing priorities, and complex product selection process. However, compliance with energy efficiency requirements for purchasing offers a significant opportunity for energy and cost savings. A recent study at the Lawrence Berkeley National Lab (LBNL) shows that full compliance with energy efficiency requirements could save the U.S. government roughly $500 million in energy costs, as well as prevent 3.7 million metric tons of CO2 emissions annually. A team of LBNL researchers are thus focused on identifying ways to help federal agencies increase compliance with energy efficiency requirements for procurement. By surveying and interviewing federal procurement staff, we seek to gain insights on the barriers and opportunities that exist for better integrating energy

efficiency requirements into federal buying practices. We are particularly focused on identifying the institutional factors that determine the extent to which energy efficiency requirements are applied by gaining a better understanding of the different roles, practices and procedures, and systematic tools that shape purchasing decisions within federal agencies. Insights from this project will inform work by the Federal Energy Management Program (FEMP) to increase the compliance with energy efficiency requirements among federal agencies. We will draw on practitioner insights to design better programs and resources in our efforts to assist federal agencies in purchasing more energy-efficient products. Our presentation will provide an overview of LBNL's long-standing research on federal procurement and its potential to increase energy efficiency in government agencies. We will present the key findings from our practitioner survey and interviews and discuss the identified barriers and opportunities that exist for increasing energy-efficient purchasing in federal agencies. We will conclude with recommendations for what federal representatives might do to increase the energy and cost savings potential of procurement.

Energy Savings and Environmental Benefits from Procurement of ENERGY STAR/FEMP Designated Products
The U.S. federal sector is responsible for around 10% of energy consuming product purchases in the country. Given this scale of procurement activity within the federal government, long-standing federal policies that require federal agencies to purchase ENERGY STAR or Federal Energy Management Program (FEMP) designated products have the potential to reduce federal energy consumption and contribute towards achieving FEMP goals. Previous studies done by researchers at Lawrence Berkeley National Laboratory (LBNL) show that the U.S. government could save around $500 million annually and avoid 3.7 million metric tons of CO2 emissions annually by fully complying with federal energy efficient product purchasing (EEPP) requirements (Taylor and Fujita, 2012). We at LBNL have updated the estimates of these energy cost savings and Greenhouse Gas (GHG) emission reductions from the U.S. federal sector that have resulted from federal EEPP requirements so far. We have analyzed data from various sources like the Commercial Buildings Energy Consumption Survey (CBECS), Federal Real Property Profile (FRPP) datasets and product level energy consumption data and have estimated the energy and GHG savings associated with around 60 product categories subject to federal EEPP requirements. This presentation will provide an overview of our findings and the potential future benefits of EEPP requirements. The presentation will also identify energy consuming product categories like energy efficient Air Conditioners, Lighting products and Computers that have resulted in significant energy and GHG savings until now. We will also identify product categories that have the highest potential for energy and GHG savings in the future. We hope to inform agencies on the benefits of the federal EEPP requirements and help them identify energy consuming product categories that they can target as part of their sustainable procurement strategy.

4.2 *Panel Theme*: Sustainability and New Facilities

Sustainability in New Construction, Fort Yuma Health Care Center
The new Fort Yuma Health Care Center in Winterhaven, California is a 76,300-square-foot out-patient facility with a projected annual energy usage of 963 MWh, about half of the average energy usage intensity of similar properties. The building design supports current methods of health care delivery, is well-suited for the surrounding environment, and is LEED Gold certified. The new clinic has an increased patient capacity nearly 50 percent greater than the old clinic. The building is projected to save $107,000 per year in energy costs, a projected savings of 62 percent when compared to ASHRAE 90.1-2010 baseline. The surrounding environment was kept in mind while designing the facility. The "U" shaped building and its orientation shields entrances and courtyard spaces from prevailing southwest and western winds. Natural light supplements the installed lighting system with great success. To minimize the use of potable water, the landscaping irrigation will come from cooling tower blowdown water which would be otherwise wasted. Rammed earth walls, made with native soil mixed with a small amount of cement, are utilized both inside and outside the building. Design of interior space uses a pod concept that enhances teamwork and is essential for efficient use of the Patient Care Medical Home model, today's standard for providing primary healthcare. Having offices in the pod/medical area allows integration with other departments that need private non-exam room space to meet with patients. Having a separate, back hallway for staff to access the ancillary departments and a break room separate from the patient area has proven invaluable to the staff. Patient flow is streamlined and way-finding is enhanced. Staff have noted that "it's difficult to 'get lost' in this facility".

Blending Well with Green
The importance of worker health and well-being have received increasing attention over the past several years. What had been a historical focus on worker occupational safety has expanded due the third and fourth industrial revolutions; the impacts of new technology, new types of work and the move to the digital workplace has overtaken older manufacturing operations. Concurrently, the last twenty years has seen tremendous interest in the development

of environmental sustainability, particularly in environmentally preferable buildings and facility operations. This has been evidenced by the simultaneous growth of the number of LEED certified buildings across the world as well as growth in the development of corporate sustainability plans. One area where both worker well-being and environmental sustainability intersect is in the development and execution of master plans, particularly on a post-industrial campus. This presentation will focus on the blend of worker wellness and well-being with environmental sustainability. This is accomplished through a broader approach to campus master planning that consciously incorporates practices and opportunities to enhance the worker environment as a component of the natural environment.

5.2 ***The U.S. Climate Resilience Toolkit: Going Beyond Data to Data-bound Answers to Decision Makers' Questions***

As decision makers in communities and businesses grapple with climate-related hazards amid a range of other stressors, they are seeking authoritative, actionable information to help them manage their valued assets. Additionally, an assessment framework is needed to guide the resilience planning and implementation process. This presentation will review how decision makers can use the U.S. Climate Resilience Toolkit's (CRT) 'Steps to Resilience' framework and other science-based tools and information to improve their ability to understand and manage their climate-related risks and opportunities, and to help them make their communities and businesses more resilient to extreme events. This session will also feature a demonstration of the Climate Explorer (CE), a web-based mapping and graphing tool designed to help users get data-driven answers to their key questions so that they can better understand how their exposure to, and risks from, climate hazards may evolve over time. Additionally, this presentation will highlight ways in which the CRT is aligned with other evolving federal activities, such as the sustained National Climate Assessment produced by the U.S. Global Change Research Program's (USGCRP).

6.2 ***Environmental Management at Federal Facilities: U.S. Army Corps: Environmental Management Tools: FedCenter***

Federal environmental program managers and facility managers face myriad challenges in complying with federal environmental regulations, executive order mandates and agency-level environmental policy; as well as in achieving their environmental stewardship goals for ensuring the health and safety of the community and the environment. The Federal Facilities Environmental Stewardship and Compliance Assistance Center was specifically created to assist the federal government – both military and civilian agencies – in developing and better managing their environmental inventories, programs, and regulatory obligations. This presentation will provide a comprehensive look at the information and tools that FedCenter has to offer to help environmental managers meet these obligations.

7.2 ***Landscaping with Meadows: The Smart, Sustainable Alternative to Turf Grass***

It's time to rethink beautiful landscaping. The antiquated ideal landscape involves neatly manicured, overly managed areas of turf grass. While this was common practice in the late 1950s and early 1960s, when NASA's Goddard Space Flight Center first opened its doors, knowledge on the subject of sustainable landscaping has rendered this model obsolete. We need to move away from turf grass to those landscapes that require less management; provide critical habitat for wildlife, specifically pollinators; sequester carbon; reduce stormwater runoff; and provide health benefits. Meadow is the modern alternative to turf grass, providing numerous benefits and, in the long term, also offering an economic advantage. Goddard's first exploration into meadow as landscaping began in the spring of 2016, with a small 0.1-acre demonstration site. While overall quite successful, the meadow and the process required to create it have provided valuable lessons. The meadow has directly impacted the natural area it occupies; however, it has also affected the social world in terms of how the area is perceived by employees and other visitors. We will discuss our successes and difficulties in getting to where we are now, as well as Goddard's path forward to incorporating additional smart, sustainable landscaping such as meadow.

8.2 ***Using EMS to Navigate Changing Environmental Priorities***

This presentation will give a brief history of the evolution of an EMS program at a small government agency (Spoiler Alert: it's DEA), including modifications necessary for an ISO 14001-based system to succeed. It will describe the standardized infrastructure deployed across all of DEA, including office space, forensic laboratories, aviation center, training academy, and intelligence center. Throughout the presentation, standardized documents used by all DEA EMS Teams will be highlighted, as well as techniques that can be used to educate, motivate and inspire team members with little to no environmental background. In addition, it will demonstrate how building a strong infrastructure leads to programmatic resilience through changing administrative goals.

Breakout Session 3

6.3 ***U.S. Army Corps: 25 Years of Team Guide Assessments***

Federal agencies began conducting environmental compliance assessments with the TEAM Guide and Supplements in 1994. By now, we know the compliance status of our agencies. After 25 years' worth of audits, the vast majority of findings are now routine: daily, operational instances of non-compliance that we find year after year. Now that we've learned what we've learned, where do we go from here? Are there ways to improve the assessment of compliance to make it more efficient? To improve the culture of compliance? To better communicate requirements to our target audiences?

7.3 ***Joint DoD Agency - Georgia County Wastewater Treatment Partnership***

Discussion of challenges with a partnership with the Air Force Reserve, Army National Guard, and Air Force Life Cycle Management Center agencies with a USAF Industrial Plant contractor operator lessee and a county to shut down an existing wastewater treatment plant, one of the few servicing Department of Defense customers, and transfer treatment to the county system. The project has been actively pursued for over 3 years with the first concepts broached back in 1997. Discussion of the process and challenges pursuing studies, environmental assessment, three economic analyses, acquisition and transfer of easements and utilities infrastructure, and renegotiation of payment and usage in consult with multiple disciplines.

8.3 ***Implementing Multi-Site NIH Environmental Management System***

The NIH Environmental Management System (EMS) utilizes a multi-pronged approach to collaborate, assist, and manage environmental compliance obligations and achieve sustainability at each NIH location. Each NIH location is encouraged to incorporate the International Organization for Standardization (ISO 14001:2015) guidance to implement their EMS. As part of the NIH EMS Program, the Environmental Program Leads and Teams at each location develop environmental initiatives to communicate, teach, support, and continually ensure best management practices in their offices and labs. Being a resource-intensive biomedical research agency, the NIH offers a unique opportunity to conserve water and energy, reduce toxic chemicals, prevent pollution and reduce waste, and avoid greenhouse gas emissions. The NIH community becomes an integral part for successfully implementing EMS. The presentation will describe the NIH approach in implementing a multi-site EMS with special focus on developing tools and communication and outreach strategies for involving the NIH community in promoting environmental stewardship and sustainability at one of the NIH locations.

Breakout Session 4

1.4 ***Panel Theme*: Recycling Markets: How to Get the Most Value from Recycling**

Recycling after National Sword

For almost 20 years, U.S. recyclers relied on being able to partially fund their operations by selling materials to China. In July 2017, China announced a ban on "foreign garbage" and since January 2018, 24 materials, including plastics, have been banned from being sent to China. Military installations function like small cities and often have similar waste stream issues. Policies are changing in reaction to market changes, but there are still mandates for federal agencies to recycle material and protect the environment. In addition, landfills at military installations are being capped or are near lifespan capacity. The operational costs for waste hauling to off-post landfills is high. Similar to recycling programs and Material Recovery Facilities (MRFs) in cities across the U.S., Qualified Recycling Programs (QRPs) throughout the military are shutting down or trying to adopt new markets in order to survive after China's recycling ban. This presentation will highlight the ways that military installations are adapting to the changing economics of recycling, including efforts to find markets for Styrofoam, tire, and glass recycling.

Secure and Sustainable Disposition of Security Sensitive Materials

In the course of mission delivery, the Department of Energy (DOE) Y-12 National Security Complex (Y-12) generates security sensitive materials that must be processed securely in compliance with strict DOE requirements. Security sensitive paper is sorted and then processed through a disintegrator located at the on-site Destruction and Recycle Facility (DAR). Non-sensitive paper was sent to an off-site recycling facility. However, when Y-12 began to experience issues with off-site recycling, experts determined that the best way to ensure adequate protection and handling of Y-12's sensitive information was to destroy all paper at the DAR. The decision to process all paper on-site posed many challenges. The existing DAR disintegrator had exceeded its design life and could not handle the

added volume required to implement this drastic change. The change would also negatively impact site landfill diversion efforts since disintegrated paper cannot be recycled by traditional methods. Through the efforts of a cross-functional team, Y-12 was able to specify new equipment with required capacity to increase productivity in operations. Lean manufacturing techniques were utilized to increase efficiency and security in collection, delivery, and destruction of all site paper. The new paper disintegration system and collection methods allow the site to securely process all site paper thereby reducing or eliminating associated security risks. Y-12 strives to integrate sustainability into all aspects of operations including the disposition of paper and electronic security sensitive media. Electronic media is securely recycled off-site. The innovative new disintegration system supports sustainability goals by facilitating the off-site reuse of ~250,000 lbs. of paper briquettes per year. The briquettes are being reused to create an industrial fiber additive. The modernization of the DAR facility and operations has allowed Y-12 to destroy over 150,000 lbs. of paper since installation.

Plastic Scrap or Scrapping Plastic
Before the secondary plastics market crashed into a Fence and was slashed with a Sword, Sandia National Labs used to manage and recycle 19 specific plastic types. Now only seven of those materials are accepted by our vendors, and we sometimes need to pay out of our budget for these services. Furthermore, in some cases, the end disposition is unknown, if not dubious. During this discussion we will talk about which materials continue to be a success, which have become stagnant; as well as those materials that may meet a dubious end. You will join me in weighing the balance between speculative accumulations or the renunciation of a material stream. Finally, we will evaluate the impact on the individuals who believe they are recycling when the materials they give have no value...or worse.

2.4 *Quantifying Cost Savings and Sustainability Benefits from Buying Sustainable IT Products*
Purchasers are frequently asked to quantify the financial and environmental benefits of procuring sustainable products. During this session the Green Electronics Council will demonstrate how Agencies can use the EPEAT environmental benefits calculator to quantify cost savings and environmental benefits achieved from procurement of more sustainable computers, mobile phones, and servers. The Department of Energy will share how they have used the calculator for this purpose and will offer the way they have used this information to bolster their sustainable procurement activities.

3.4 *Panel Theme*: Pollution Prevention & Water Systems
Redefining 'Pollution Prevention (P2)' 29 Years after the Act: Leading a Federal P2 Program to Tackle the Impossible Problems
Twenty-nine years after the Pollution Prevention Act of 1990, Pollution Prevention (P2) programs still exist in many institutions. Most of the issues that created the original concepts of P2, sustainability, and overall environmental stewardship were either solved or have taken on a different form requiring a different solution. At Los Alamos National Laboratory (LANL), the initial problems have long since been resolved, requiring a program that goes beyond awareness and implementing known alternatives and approaches the deeply entrenched issues needing structural change. Out-of-the-box thinking, whole systems analysis, combined with technical knowledge from within the P2 program, is required to take the next steps in bringing the institution strongly into 2020 and in a way attractive to the young talent the institution is looking to attract. In this talk, I will explore the multi-faceted approach that the LANL P2 program is using to build a state-of-the-art program including: Preparing for the future with an uncertain climate specifically with regard to mission critical water resources; Going beyond simple compliance by better understanding inputs into the sanitary waste water system which impact treatment, the environment, and overall institutional risk; Characterizing the cooling towers on site to move from management silos into a structured and more efficiently managed cooling tower system to optimize cooling tower performance; Redesign chemical management at the site to decrease hazardous waste, improve human safety, and reduce risk to the institution by moving past the old idea of simple chemical reuse for better management; Approaching all of our existing and future projects with the concept of whole system analysis with the appropriate technical expertise to create lasting change resistant of management and staff changes; Going beyond extrinsic motivation as the method for implementing change within an institution.

A Cross-cutting Approach to Understanding Water Systems to Support Pollution Prevention
Standard practice for the Los Alamos National Laboratory (LANL) is to keep information in "silos" to preserve operational security. In regard to water use and wastewater management, this approach is often not optimal. To make informed decisions, an understanding of the whole water system is required, and the P2 program at LANL works to fill this information gap. The program's investigation has examined each part of the water system and

considered available data, economics, operations, compliance, water conservation and water reuse, and opportunities for investment in technology/R&D. Through this work that began at the sanitary wastewater plant, moved out from the effluent water treatment facility to cooling towers and the steam plant, and finished at outfalls, the program is now able to guide LANL leadership in making better water management decisions. For example, the function of the evaporation ponds for reject water from the effluent reclamation facility can be optimized, reducing sludge volumes and the volumes of water requiring evaporation. In addition, after completing the water systems analysis, the P2 program better understands how to fund value-added projects for LANL, such as a source reduction effort to reduce PCB inputs into wastewater, which included in-house water sampling and innovative PCB analysis. This presentation addresses the steps taken, data collected and analyzed, and lessons learned about cross-cutting efforts to examine and optimize resource use.

4.4 *Panel Theme*: High Performance Sustainable Existing Buildings

High Performance Sustainable Existing Buildings: Requirements, Requalification, and ROI

For over a decade, Federal government agencies have worked to implement the Guiding Principles for Federal High-Performance Sustainable Buildings and have sought to realize substantial building performance improvements through design, renovation, operations, and facilities management best practices. Implementing the Guiding Principles has often focused on new buildings or major renovations, but facility managers know the "action and opportunity" is in their existing building portfolio. The 2016 Guiding Principles introduced "on-going requirements" that both represented a new challenge to the GSA Guiding Principles Existing Building (GP-EB) program but also a new opportunity to support proactive and value add facilities management. The release of Executive Order (EO) 13834 and its Implementing Instructions reinforced the "on-going" / "requalification" requirements and continued portfolio management and return on investment (ROI) imperatives. This presentation will summarize the "on-going" / "requalification" requirements and, then, discuss how the GSA GP-EB program has been leveraging them as an opportunity to move from more of a checklist and documentation exercise to a value-add focused engagement with our facility management teams. It will describe the process initially used to translate the broad "on-going requirements" into streamlined implementation approaches that have been applied to dozens of GSA owned buildings over the past three years. The presentation will share what has worked well, challenges encountered or that arose, and how GSA has been using these lessons learned to continue refining our portfolio-wide GP-EB program into a value-add exercise focused on building performance and cost-effective changes to improve into the future. The session will challenge audience members to ask the hard questions of efficacy, value add, and/or ROI in their own programs, particularly as they incorporate new EO 13834 requalification requirements and guidance.

Effecting Sustainable Building Changes in Large EB Portfolios

For over a decade, Federal government agencies have worked to implement the Guiding Principles for Federal High Performance Sustainable Buildings and have sought to realize substantial building performance improvements through design, renovation, operations, and facilities management best practices. Implementing the Guiding Principles has often focused on new buildings or major renovations, but facility managers know the "action and opportunity" is in their existing building portfolio. The 2016 Guiding Principles introduced "on-going requirements" that both represented a new challenge to federal Guiding Principles Existing Building (GP-EB) programs but also a new opportunity to support proactive and value add facilities management. The release of Executive Order (EO) 13834 and its Implementing Instructions reinforced the "on-going" / "requalification" requirements and continued portfolio management and return on investment (ROI) imperatives. This presentation will discuss how to move from more of a checklist and documentation exercise to a value add focused engagement with your facility management teams.

5.4 *Panel Theme:* FEMP Resilience Tools and Services

This presentation will focus on the Federal Energy Management Program's Technical Resilience Navigator (TRN) which is a systematic approach to energy and water resilience planning. The TRN approach allows organizations to assess current site energy and water infrastructure needs, mission priorities, and risk to identify and prioritize actionable solutions creating a roadmap for action. The web based resource was soft launched at Energy Exchange in August 2019 and represents an organization-neutral approach to resilience portfolio planning. Elements of energy and water resilience include the ability for optimized operations to withstand, adapt, and recover from disruption as required. A resilient site also requires trained personnel and capabilities as well as sufficient resources and sound infrastructure to support essential functions during normal and disrupted operations. Resilient sites have identified risks and made plans to address gaps. Resilience requires diverse solutions that address both resource and infrastructure needs and interdependencies to minimize interruptions of energy and water services.

6.4 ***An EPA National Compliance Initiative: Reducing the Rate of Significant Noncompliance with Clean Water Act NPDES Permits***

In EPA's Strategic Plan for FY 2018-2022, the Agency established a 5-year goal to increase compliance with Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES) requirements. Specifically, EPA set a goal of reducing the rate of significant noncompliance (SNC) in the CWA NPDES program 50 percent by the end of FY 2022. Notably, both major and minor individually permitted public, private and federally owned facilities in SNC will be identified and addressed through this initiative. To effectuate this reduction in the SNC rate, EPA and states are working together to analyze SNC rates, identify specific facilities in SNC, implement actions to address such facilities, and return them to compliance. EPA and states will use a full range of compliance assurance tools, including both formal enforcement and compliance assistance, to remedy existing SNC violations and deter future noncompliance. The goal of this session is to present relevant background information on this important initiative, discuss efforts taken thus far to ensure that federal facilities are held to the same standards as other sectors and that the federal facility SNC rate is reduced as part of the larger NPDES universe, and discuss ways in which federal agencies can work with EPA and states to reduce the rate of NPDES SNC at federal facilities moving forward.

7.4 ***Emerging Tools for Monitoring and Managing Threatened and Endangered Species on Federal Lands***

Although often difficult to quantify, understanding and then incorporating species behavior into wildlife management can greatly improve conservation and management effectiveness. Relatively easily acquired information, such as species abundance and distribution, can be insufficient for understanding population status and can be biased for cryptic and/or difficult to survey species. Further, understanding species behavior can lead to novel tools for manipulating behavior to meet conservation goals. Here we provide examples where research on wildlife behavior led to improved endangered species management strategies on military lands. Examples include 1) understanding snake habitat selection and behavior to develop more effective conservation strategies; 2) the use of conspecific attraction, or the tendency of individuals to settle near those of their own species, to increase use of restored habitats for birds and amphibians; and 3) documenting plant-animal interactions and manipulating social information to promote critical mutualisms. The highlighted research took place across numerous military installations across the US and Pacific Islands and across a wide suite of at-risk taxa. We found that detailed information on snake behavior was critical for understanding and then minimizing human-animal conflict. We also found that manipulating social information (e.g. broadcast calls of conspecifics), was effective for encouraging colonization of unoccupied habitats in frogs and birds, increasing abundances on underutilized habitats, and increasing frugivory (and, therefore, seed dispersal) on rare plants by fruit-eating birds.

8.4 ***Panel Theme:*** **Leveraging Your EMS for Energy Savings**

An ISO 14001 conformant environmental management system (EMS) is designed to provide a framework for organizations to better manage their environmental objectives. Similarly, an ISO 50001 conformant energy management system (EnMS) helps organizations manage their energy use. With new ISO standards for management systems sharing the same structure (i.e., they use the same format/outline, called the High Level Structure), this panel will discuss how you can leverage your current EMS to implement an EnMS using the Department of Energy's 50001 Ready Navigator tool. Come hear the panel discuss the 50001 Ready Program and showcase case studies of sites that have saved energy and money by becoming 50001 Ready, using the 50001 Ready Navigator. The speakers will also walk through the key similarities and differences between the two standards, so you can better focus your resources on your energy management system implementation.

Breakout Session 5

6.5

Above Ground Storage Tanks: What You Need to Do to Comply

This presentation provides a basic overview of what is required of facilities under the Spill Pollution Prevention Regulations found in 40 CFR part 112. It discusses regulatory framework for the Regulations, the basic requirements that SPCC facilities and FRP facilities must meet, what takes place during an inspection, and also provides information on common violations typically identified during inspections.

7.5 ***International Conservation of Migratory Birds through Research Collaborations - A Success Story***

Memorandums of Understanding (MOU) between the U. S. Department of Energy (USDOE) and the U. S. Fish and Wildlife Service signed in 2001 and 2013 served to implement the agency's commitment to Executive Order 13186,

Responsibilities of Federal Agencies to Protect Migratory Birds. Included among the components of the MOU are the promotion of research, collaborations, and outreach to further migratory bird conservation. Without mandate, the USDOE-National Nuclear Security Administration (NNSA) Pantex Plant has built a respected migratory bird program that focuses on high profile species and issues, and collaborative research partnerships. Since 2002, Pantex has contracted with or opportunistically collaborated on studies with researchers from Texas Tech University (including the U.S.G.S. Texas Cooperative Fish and Wildlife Research Unit), West Texas A&M University, University of Manitoba, and York University. Partnerships involved in various studies have also included local, state, and federal governments, non-profit organizations, private landowners, and volunteers. Research has focused on avian use of prairie dog colonies, impacts of wind energy development on migratory birds, studies on special status species, and a declining aerial insectivore. Modern data-logger and G.P.S. technology use on Swainson's hawks and purple martins have allowed year-round data collection and analyses have allowed the Pantex "conservation-reach" to stretch across North, Central, and South America. The research has been shared through more than 40 technical presentations, 10 refereed journal articles, four magazine articles, and six theses/dissertations, providing considerable value-added contributions to the understanding of migratory bird ecology and issues. The Pantex Plant's work has been recognized by the USDOE/NNSA as their sole-allotted nomination for the Presidential Migratory Bird Federal Stewardship Award in five of the seven years of the award's existence.

Breakout Session 6

1.6 ***Panel Theme: Secure Recycling & Reporting Solutions for Electronic Assets & Ink Cartridges***

This session highlights the importance of environmentally responsible electronics recycling and features solutions for Federal Agencies to manage IT assets and inventory. Speakers will include an overview and background information on the core components of I.T. Asset Disposition (ITAD). This session will be of particular interest to agencies seeking a comprehensive recycling solution suitable for multiple and remote locations.

2.6 ***Panel Theme:*** **Environmental Alternatives for Rapidly-Changing Military Settings**

As the world becomes more aware of the dangers of traditional energy sources, reckless waste disposal, and transportation-related greenhouse gas emissions, American military installations must lead the way towards renewable energy, responsible waste disposal, and sustainable transportation solutions. By looking at military installations around the country, we can learn about efficient best practices to accomplish environmentally-friendly goals. The panel will discuss efforts in Fort Irwin, Presidio of Monterrey, and Fort McCoy to begin exploring ways to produce alternative energy on-site as a way to improve installation resiliency in the face of climate change and potential enemy hostility. It'll transition to discuss Picatinny Arsenal's endeavor to find alternatives to open burn of explosive-contaminated waste to reduce hazards and improve installation safety. The panel will conclude by discussing efforts in Fort Jackson, Joint Base Meyers Henderson Hall, and Presidio of Monterrey to analyze current military passenger vehicle fleets and explore the possibilities of ridesharing in military installations as a way to improve mobility, provide employment to veterans and military spouses, reduce carbon emissions, and reduce government spending on operation and maintenance for vehicles. The panel aims to instill hope to federal agencies that transitioning towards better practices can be achieved and is already being done around the nation.

3.6 ***Nontargeted Approaches to Environmental Monitoring***

While compliance-oriented methods excel at the detection and measurement of specific analytes of interest, the known knowns, by design they exclude other compounds which may be present in samples, precluding the detection of unknown unknowns. Complementing nontargeted methods is experimental designs directed maximizing the chance of discovering unanticipated compounds, such as sampling upstream of compliance points to improve detectability and better attribute sources. In this presentation, I will discuss efforts to locate legacy sources of polychlorinated biphenyls (PCBs) in the combined industrial/sanitary sewer system at Los Alamos National Laboratory (LANL), and the strategies utilized to also detect unanticipated contaminants. The upstream sampling and nontargeted nature of the analysis led to the observation of two unique non-PCB classes of compounds, each appearing in different sampling areas. In some samples, the PBB or PCT content of the samples exceeded that of the PCBs. I will discuss the significance of these PCB-like compounds for understanding legacy contributions to the LANL sewer system and recommendations for applying non-targeted methods to environmental sampling. I will also cover efforts LANL is making in the area of per/polyfluorinated alkyl substances (PFAS) in anticipation of future regulatory constraints and opportunity for leadership in the space. Concepts for the presentation: 1. Non-targeted analysis anticipates surprises 2. Don't just sample at the compliance point. Go upstream to improve

detectability of unanticipated compounds and regionalize the information. 3. Collect data in a way that maintains the option to mine the data later when new targets are identified. 4. Traditional EPA method are optimized for analysis of known knowns and discard the unknown unknowns that might be valuable currently or in the future. 5. The environmental persistence of PCBs was accidentally discovered as an interference in environmental pesticide analysis.

4.6 *Panel Theme:* Sustainable Labs

NIH Green Labs Program

NIH developed the 2018 NIH Green Labs Program (GLP) to provide a central repository of information about sustainable laboratory policies, programs, and practices, for laboratory personnel to participate and protect human health and the environment. The program was an initiative of the Sustainability Management Team to inform, encourage, and award NIH laboratories for following sustainable lab practices. Laboratory personnel used a self-assessment tool to identify their participation in initiatives ranging from energy and water conservation, freezer management, chemical waste, medical pathological waste, radioactive waste, waste reduction, recycling, green chemistry, inventory management, and outreach. Laboratories that met or exceeded the minimum criteria were recognized with a Green Lab Certificate. In addition, a few GLP winners were acknowledged with a travel award to a conference on laboratory sustainability. Forty-six laboratories under the direction of seventeen Principal Investigators met the GLP criteria for 2018 NIH Green Labs Program.

NIH Ultra-Low Temperature (ULT) Freezer Management Program

The Department of Health and Human Services (HHS), National Institutes of Health (NIH) has increased the reliability and reduced electricity consumption and cooling costs of Ultra-Low Temperature (ULT) freezers by managing how freezes are purchased and maintained. ULT freezers are one of the most energy-intensive pieces of laboratory equipment. The average ULT freezer consumes 20 kWh/day and causes an additional 4.5 kWh/day in cooling requirements. The NIH requires new freezers to be Energy Star Certified and ULT freezers must have a biannual preventative maintenance. The NIH also implemented a number of energy saving initiatives through participation in the 2019 International Institute of Sustainable Laboratories (I2SL) Freezer Challenge. Energy Star Certified ULT freezers use new technologies to reduce energy consumption including: variable speed drives, natural refrigerants and a Stirling engine. Standard new ULT freezers consume between 17 and 24 kWh/day while new Energy Star Certified freezers consume between 8 and 13 kWh/day. NIH Manual Chapter 26101-16 requires NIH personnel to select an Energy Star Certified model when purchasing a new ULT freezer. Conducting regular preventative maintenance can increase reliability and reduce energy consumption and operating costs. When a freezer filter is clogged by dust accumulation it restricts airflow and air that bypasses the filter brings dirt and debris to the condenser, affecting heat transfer. When ice builds up in a ULT freezer gasket it prevents the door from sealing properly. This allows warmer air to enter the ULT freezer. A significant ice buildup in the interior cabinet reduces heat transfer. These conditions cause the compressor to operate at a higher duty cycle, reducing the life of the compressor and increasing the energy consumption by as much as 25%. The NIH implemented additional initiatives as part of the 2019 I2SL Freezer Challenge including: temperature tuning, freezer defrosts and sample management.

5.6 *Panel Theme:* DHS Resilience Framework

An overview of best practices and evaluation system for identifying opportunities for improving agency Resilience. The creation of the Framework was based on maintaining operations and maximizing agency's investment by evaluating critical resources, the systems used to operate and maintain those critical missions, along with evaluation criteria to make it simple to demonstrate an assets resiliency. Ongoing response to extreme weather, natural disasters, and manmade disasters are making DHS systems more vulnerable to loss of power and damage to infrastructure. As a result, DHS developed a Resilience Framework, which was signed by the DHS Under Secretary of Management in August 2018. This framework has four focus areas: Energy and Water; Facilities; Transportation; and Information Communication Technology. By evaluating dependencies, vulnerabilities, threats and risks of critical infrastructure, DHS is able to assess the resilience of individual assets. Projects can then be prioritized to ensure that the DHS portfolio is better prepared for natural and manmade disasters.

6.6 *Underground Storage Tanks: The New UST Regulations*

This session will provide information on the regulatory requirements for people who work for agencies that own or operate underground storage tanks (UST). The UST regulations were revised and became effective on October 13, 2015. This session will provide an overview of 1) why the regulations were revised, 2) how to determine if the

regulations are applicable to underground storage tanks owned or operated by your agency, 3) what is a properly equipped UST system, 4) how UST systems are to be operated, 5) how to respond to releases from UST systems, and 6) how to properly close UST systems.

7.6 ***College Underserved Community Partnership Program***

The Problem: Rural and other underserved communities need resources to improve their environmental conditions; economic viability, health, and overall quality of life. However, while there are many local, state and federal resources available to them, they often lack the technical knowledge and skills needed to go after these resources. The problem is not need; it is the access to the technical assistance and capacity needed to get the resources that can make a difference.

A Solution: The Environmental Protection Agency (EPA), Region 4, developed the College Underserved Community Partnership Program (CUPP) to assist these communities. CUPP enlists colleges and universities to assist rural and underserved communities with technical support through student internships, capstone projects, and masters level programs. Students work on a wide range of plans and projects based on the issues identified by the communities. This support gives the communities the vital technical assistance they need to go after needed resources. At the same time, CUPP provides practical experience for participating students in their areas of academic study, and students generally receive academic credit for their efforts. The communities receive these vital support at no cost to them, and the schools provide their services on a voluntary basis. By building partnerships not based on funding, we are able to build long term relationships between communities and schools, ensuring the support will continue into the future.

8.6 ***Virtual Environmental Management Office (VEMO): The Air National Guard's Multi-Site Organizational EMS***

The Air National Guard (ANG) is composed of 90 Wings located at >140 locations across the U.S. & its territories. Beginning with EO 13148, the ANG struggled with implementing independent management systems across the enterprise. In 2007, the ANG made a fundamental shift and centralized the EMS at the ANG Readiness Center (ANGRC) establishing top level EMS procedures and centralizing most of the fundamental environmental procedures across multiple sites. The ANG accomplished this by leveraging the use of SharePoint (first at Guard Knowledge Online, and now on Intelink) to build the Virtual Environmental Management Office (VEMO) as its electronic EMS Manual. ANG Installations are still the primary implementers, but the ANGRC drives most of the continual improvement and provides multiple tools within VEMO to document & track everything from Objectives and Targets to Management Reviews. Utilizing SharePoint with primarily "Out of the Box" technology allows the ANG to rapidly adapt and support ANG installation environmental management offices (EMO) that typically have a staff of 1-2 personnel. VEMO allows ANGRC personnel to remotely collect information and provide regulatory support, which allows our installation EMO staff to provide more focus on the day to day onsite environmental management work needed to support the Air Force and ANG mission, while still meeting federal, state, and local requirements. During this time, the ANG has been fully supported by our primary strategic partner, The Solution Foundry. This presentation will provide a brief overview of VEMO and some of the unique tools that are used within SharePoint and developed in conjunction with Solution Foundry.

Breakout Session 7

3.7 ***Seeking/Sharing Water Sustainability Solutions for Decentralized Systems of Supply and Wastewater***

Small and non-urban communities face challenges similar to those at isolated government facilities which must independently provide water supply and wastewater management services to their occupants and operations. For example, a remote military base is akin to a municipality that neither imports water nor exports wastewater. Both seek self-sufficiency and resiliency as they draw upon local resources. Issues of ascertaining sustainability conditions and potential, such as long-term maintenance of quality and quantity yields of drinking water, can be difficult to assess and anticipate. As an elected volunteer for my town's governance, I serve in the role of Chair of the Board of Health for a public that relies on private wells and septic systems. In determining how to direct and balance uses of and impacts on shared water resources, the Board often relies on external basic research to guide its decision-making. I see an opportunity for advancing our understanding of cause and effect in managing this water cycle and easing the burden of evaluating such circumstances on only a case-by-case basis. The objective of my presentation is to explore how municipalities and federal facilities can collaborate on these challenges of sustainable watershed management. Federal agencies' contributions to the collaboration may result from more ready access to services and expertise to gather data. Furthermore, that an agency may have authority over the entirety of a facility's

systems can enhance its ability to collect data in a coordinated manner and/or to track the influences of systems' designs and operations on hydrology outcomes. Municipalities' contributions to the collaboration may include, but not be limited to, observations about the evolution of watershed conditions and identification of practical concerns for which solutions are not readily accessible or apparent.

6.7 ***40 CFR 280 & The Exchange***

In the July 15, 2015, Federal Register, EPA published the 2015 underground storage tank regulation. The revisions strengthen the 1988 federal underground storage tank (UST) regulations by increasing emphasis on properly operating and maintaining UST equipment. UST owners and operators in states and territories without program approval had to comply with these new regulations by 10/13/2018. This presentation will cover how AAFES has tried to make sure the sites operated by AAFES are in compliance with these new regulations. A history of AAFES and how responsibilities for AAFES gas stations on military installations are divided. The session will cover training provided by AAFES to Associates, remote monitoring of systems to ensure compliance, checklists created to ensure sites conduct walk-through inspections. And answer any questions on these topics.

8.7 ***Enabling Distributed Environmental Compliance Management***

Assuring compliance with new and evolving local, state, federal, and even international environmental regulations across dispersed enterprises is a daunting endeavor for environmental managers at all tiers of the enterprise. It is challenging to maintain compliance risk at an acceptable level while faced with budgetary and manpower constraints in a climate of ever increasing and constantly evolving regulations. To keep pace, many federal installations have implemented strategies and tools aimed at distributing the compliance oversight and associated data management workload, in order to drive efficiencies in meeting compliance demonstration, recordkeeping and regulatory reporting requirements. This strategy has been largely enabled by the successful implementation and institutionalization of modern environmental compliance information management solutions. Proper implementation of these systems has been proven to reduce the manpower required to demonstrate compliance and satisfy reporting requirements, while also reducing compliance risk. This presentation will explore specific case studies where the concept of distributed environmental compliance management has been successfully implemented and will reveal best practices and key lessons learned along the way.

Day 2

Breakout Session 1

1.1 ***Workshop Theme:*** **Lithium Battery Recycling and Disposal**

Participants will learn how to prevent, reduce or eliminate risks of fire or explosions from the improper packaging, marking, labeling, or recycling of lithium batteries. The workshop will focus on the safe transportation of lithium batteries for recycling and the applicable regulations that must be followed by battery recyclers. It is designed for individuals who desire a working knowledge of the regulations to understand how to handle batteries within their organization. The workshop will include an overview on the latest regulatory requirements on proper lithium battery packaging, marking, and labeling and as well as a basic understanding of how to apply the Hazardous Materials Regulations (HMR). The workshop will include a Q&A opportunity with lithium battery subject matter experts from the U.S. DOT.

2.1 ***Panel Theme:*** **Sustainable Acquisition**

Getting Projects Moving: Organizational and Cultural Dynamics-With a Focus on DOE's GreenBuy Award Program

Every organization and every new idea has champions of change and centers of reluctance or opposition. DOE's GreenBuy Award Program was launched in fiscal year (FY) 2011, using applied behavioral and cultural change practices based on a book by Alan AtKisson. This presentation will explain the patterns and stages of innovation adoption within an organization seeking to promote change, using the GreenBuy example. The voluntary GreenBuy Award Program helps navigate a large set of sustainable purchasing requirements and recognizes participants that successfully save energy, conserve water, and reduce health and environmental impacts. This program encourages participants to go beyond minimum Federal procurement requirements and to stay current with the market's more sustainable products. Since the first awards in FY 2011, 71 percent of DOE sites submitted applications for an award and 68 percent of those applicants were recognized. This means that nearly half of all of DOE's reporting sites have been recognized with an award for voluntarily purchasing the most sustainable products available on the market.

Different kinds of ideas call for different kinds of promotion and change strategies. AtKisson's book provides ways we might approach people to help us speed up the process of adopting new ideas.

Sustainable Acquisition: The USDA BioPreferred Program
The goals of this presentation are as follows: to create outreach, training and education to the federal acquisition community and their federal contractors about the interesting world of BioPreferred; focusing mainly on the federal procurement preference program as it relates to the purchase of biobased products (products made out of agricultural, forestry, and marine materials, i.e. corn, soy, wheat and sugarcane). To stimulate learning behaviors towards incorporating biobased products into the acquisition process and to inform federal agencies/and or federal contractors about biobased training materials.

Simplifying Federal Sustainable Procurement with EPA's Recommendations of Specifications, Standards, and Ecolabels
The Federal Acquisition Regulations direct Agencies to procure environmentally preferable products and services based on EPA Issued Guidance. EPA has responded by creating a set of Recommendations of Standards and Ecolabels for use in federal procurement. But what is an environmental performance/sustainability standard? How are they developed? What factors influence their content? In this session we'll answer these questions, and explain how federal agencies can use EPA recommended standards and ecolabels to simplify their sustainable procurement efforts.

3.1 *Contracting for Water & Energy Efficiency*
Federal buyers are required to purchase energy efficient products by statute and executive order. In addition, energy-efficient procurement offers substantial energy and financial savings potential throughout the federal government. This training will offer federal contracting officers with a concise introduction to the process of procuring energy-efficient products and will include actionable guidance as it applies throughout the contracting process. Specifically, this training will cover the benefits of energy-efficient product procurement; federal requirements to purchase energy-efficient products; covered product categories subject to efficiency requirements in product and service contracts; how to write compliant contracts that effectively communicate efficiency requirements to vendors; how to verify the delivery of energy-efficient products; and how to utilize FEMP and ENERGY STAR web material to support these activities.

4.1 *Panel Theme:* DoD Sustainability Programs
DoD Sustainability Program and Sustainable Technology Evaluation and Demonstration Program
DoD's Sustainability Program strives to maintain the ability of the Department to operate into the future without decline either in mission or in the natural and man-made systems that support it. The Department's Sustainable Procurement Program enhances and sustains mission readiness through cost-effective acquisition that achieves compliance, prevents pollution, ensures product availability, and minimizes ESOH impacts to the warfighter. The Office of the Assistant Secretary of Defense for Sustainment (OASD)(S) recently initiated the DoD Sustainable Technology Evaluation and Demonstration (STED) Program to vet sustainable and less hazardous products and technologies under Federal preferred procurement programs to identify those that meet DOD specifications or requirements; introduce to installations and operational forces the vetted technologies and products; conduct, document and analyze demonstrations at DOD installations to reveal life-cycle return on investment and performance data for the vetted products; facilitates enhanced availability and accessibility of vetted products; create DoD and Federal agency awareness of acceptable alternatives that can assist DoD in executing mission objectives while reducing life cycle costs. The STED Program garnered support and participation from Services and several Federal agencies to warrant its expansion to include a wide range of sustainable technologies and products (e.g., biobased hydraulic fluids, sorbents, penetrating lubricants, greases, and two- and four-cycle engine oils). The STED Program ultimately can improve operational readiness, reduce consumption and exposure to hazardous materials, reduce human health and environmental impacts, and reduce the logistic/support tail, providing additional mission support savings. The Program further eliminates redundant testing and evaluation by each Federal user; avoids setbacks to sustainable procurement programs from the use of non-performing products; and takes the guesswork out of procuring sustainable and biobased products at the installation and operational unit level, saving their time for other duties.

Sustainable Materials Process Evaluation: Process, Tools, and Results
In 2013, Cardno assisted Headquarters Army Materiel Command (HQ AMC) with the Enhanced Environmental Performance Assessment System (EPAS), which was intended to better fit the needs of the Army Industrial Base. Per Army Regulations, the U.S. Army is obligated to conduct an external EPAS evaluation at every Army installation once every three years and conduct an internal EPAS on other years. Cardno has completed two cycles of Enhanced EPAS evaluations at 21 HQ AMC installations. The HQ AMC Enhanced EPAS program involves the performance of environmental compliance assessments with special emphasis on HQ AMC industrial operations. A key part of the Enhanced EPAS is the Sustainable Materials Process Evaluation (SMPE), in which Cardno auditors evaluate practices and identify opportunities that could reduce the installation's use of high-volume and high-risk chemical constituents, or have the potential to reduce the cost of waste disposal or purchase of feedstock materials, or otherwise support the long-term sustainability of the mission and installation resources. Management practices considered sustainable include reduction of storage, use, and handling of hazardous materials; reutilization, recycling, and/or recovery methods applied to industrial processes; and improvement of the installation's infrastructure and its management. Cardno identified more than 100 current and planned sustainable practices. By working with installation personnel, the Cardno team identified opportunities such as: replacing creosote treated wooden railroad ties with non-toxic composite ties; replacing compressed gas chlorine at drinking water and wastewater treatment plants; and reusing non-serviceable explosives as donor material for open burn/open detonation operations. As part of the SMPE process, an environmental/regulatory analysis was conducted to determine any liabilities and an economic analysis was provided to include the initial project cost, projected operating cost, capital cost, annual net benefit, and payback period. The SMPE is a beneficial enhancement in a time of decreased funding for pollution prevention programs.

5.1 ***Panel Theme:*** **State & Local Government Sustainability Best Practices**
Learn from three local jurisdictions (Washington, D.C., Montgomery County, MD, and Arlington, VA) how local governments are addressing sustainability issues. These three jurisdictions are leaders in the region, and nationally, on climate and energy issues. Working within 3 different government structures, yet coordinating regionally, they are working to reduce energy use and carbon emissions in all sectors of the community.

6.1 ***EPA's National Compliance Initiatives: Strategic Direction of the EPA's Federal Facility Enforcement Program***
EPA holds federal agencies to the same environmental standards and requirements as the private sector. This session will discuss EPA's enforcement and compliance assurance priorities and how they are being applied to the federal sector.

7.1 ***Bridging the Technical-to-Layperson Gap for Environmental Matters at the U.S. Postal Service***
USPS is a huge agency of roughly 500,000 Postal employees and over 30,000 facilities, with a challenging core business of mail processing for the entire nation. Within USPS is a department called 'Facilities' where all of the real estate and repair and alteration needs of every facility within USPS are addressed. Those needs often include environmental and related health and safety matters, from small, rural post offices, to grand, historic post offices on America's 'Main Streets', to massive mail processing centers well over 400,000 interior square feet. With effective communications, teamwork, patience, kindness and technical environmental knowledge, this writer offers her guidance and stories of bridging the gap between complicated technical environmental findings and the environmental concerns of the layperson. For example: taking a complicated health risk assessment and translating findings to help convey the results in an informal safety talk; explaining what it means to occupy a new site that was formerly industrial and contaminated, but was cleaned up under state environmental agency supervision to 'residential standards'; educating Postal staff and managers about a practical 'stop the water/moisture intrusion' approach to mold concerns versus misguided mold spore sampling; or managing millions of square feet of asbestos-containing building materials while the layperson's concern is that even one asbestos fiber can harm them. Other agencies will hopefully benefit from seeing this writer's perspective on bridging the technical-to-layperson gap and apply some of those concepts to their own work. This writer also seeks to learn from other agencies about how they bridge this gap, whether as part of their core mission, or in order to sustain their core mission.

8.1 ***Increasing the Accuracy of Employee Commuting Scope 3 Greenhouse Gas Data Using Software and Environmental Objectives***
Accurately estimating the Scope 3 Greenhouse Gas (GHG) emissions associated with employee commuting for Department of Energy (DOE) reporting has/is elusive at almost all sites complex wide. The issues have resulted

from data collection methodology, most frequently surveys, and include small sample sizes, nonparticipation bias, and poor resolution on estimates of emissions totals. To combat these problems the Sandia National Laboratories (SNL) Environmental Management System (EMS) team, and their embedded IT service team, developed a website that allows users to build a profile that includes their mode of transportation (including motor vehicles, carpooling and vanpooling, telecommuting, mass transit options, walking, and biking), the year, make, and model of their vehicle, the area they live in, and the distance of their daily commute one-way. Furthermore, the site allows them to pick any possible transportation options for each day of a two-week period to capture the variety of possible work schedules. This "Commuter Profile" then uses a Department of Transportation (DOT) database to include vehicle specific fuel efficiencies and emissions factors by vehicle type. These inputs significantly increase accuracy of annual GHG emissions estimations. To reduce non-participation bias, SNL has committed to participation goals via the laboratory's EMS Environmental Objectives. These objectives allow SNL to encourage the participation of all employees. Despite these dramatic improvements, reporting still poses challenges. The outputs of the Commuter Profile are in GHGs, whereas he DOE Sustainability Dashboard asks for population number and miles driven by vehicles type. This requires that extra calculations be performed to acquire data granular data so that the reporting can be performed. Over all, the Commuter Profile's improvements over the surveys of the past and have made it a best management practice, as identified by third party auditors.

Breakout Session 2

6.2 *Panel Theme:* New Developments in Regulating Hazardous Waste: RCRA's Hazardous Waste Generator Improvements Rule

In November 2016, EPA made major revisions to the hazardous waste generator regulations under the Resource Conservation and Recovery Act (RCRA) to improve compliance and increase environmental protection. These changes are both a result of EPA's experience in implementing and evaluating the hazardous waste generator program over the last 30 years, as well as a response to concerns and issues identified by the states and regulated community. Today's panel presentation will provide an overview to the 2016 Generator Improvements Rule.

7.2 *Building Relationships and Cooperation with Partner Nations*

The rapid loss of Amazon rainforest has been rising in recent years. Several contributing factors include deforestation to prepare for illicit mining operations or to raise cattle. The resulting deforestation contributes to climate change, significant erosion events, flooding and more. Chinese fishing fleets have been warned off the coasts of the Galapagos Islands, Ecuador, Argentina, Colombia, and other places. More often, they conduct operations without being caught. Deploying bottom-trawling nets that capture multiple species, impact coral reefs, destroy plants and generally disrupt habitats, these crews decimate already over-taxed ocean resources. And these are just two examples of the impacts brought by traffickers who threaten the environmental security of a nation. Developing strategic partnerships between the United States government (USG) and Partner Nations (PNs) provides opportunities to share experiences and coordinate new directions for preventing the exploitation of cultural and natural resources. It also provides the means for developing better response planning for post-disaster situations that can be enhanced by international involvement. At the US Southern Command, subject matter expert exchanges support planning for rapid response and resiliency in environmental crises and enhances regional stability by empowering PNs against exploitation of cultural and natural resources. The goal is to provide forums for sharing knowledge and assistance in disaster preparedness, and the prevention of natural and cultural resource exploitation. We gather experts from education and technology, planning and response organizations, and from various US government, non-government and non-profit agencies, who can provide options for resolving problems. Together we meet with PN government agencies, academicians, law enforcement, wildlife organizations, emergency response offices, and many others to exchange ideas, and lessons-learned for issues affecting environmental and operational energy security. Together we target ways to prevent threat networks from gaining advances through the exploitation of natural resources.

8.2 *Environmental Aspects: How and How Many*

Determining and ranking environmental aspects is an early challenge while developing an ISO 14001-based environmental management system and their annual maintenance can also be a chore. The environmental aspects for a US Department of Energy remediation site will be described and two methods of determining and ranking environmental aspects (organizational versus company-wide) will be discussed. The presenters will then lead a discussion to determine if other environmental aspects exist that were not considered exist, focusing on other governmental entities.

Integrated Communication at Large Sites
In this presentation, we highlight the importance of integrated communication at a large site. Integrated communication is the primary tool to ensure site-wide awareness and contractor collaboration on various Environmental Management System (EMS) topics. We explore specific examples of implemented platforms for site-wide efforts and contractor specific communications. As the contracted site integrator at the Hanford Site, we utilize various approaches to communicate EMS information. Example methods include site-wide working group meetings, internal SharePoint, site-wide surveys, collaborative reporting, weekly newsletters, and combined communication efforts with the Integrated Safety Management System (ISMS).

Breakout Session 3

1.3 ***Electronics Property Management - Review of Current Policy, Reporting Procedures, & Bulletins***
This presentation will provide an overview of how our Federal property policy is made. We'll review the origins of this policy from the Constitution through the development of laws, regulations, and agency policy. Understanding how policies are made enable our customers and the public to better make their voices and perspectives heard. This presentation will also provide a summary of the policies and guidance addressing personal property, including provisions for the use, reuse, and disposal of property to improve our national sustainability efforts.

2.3 ***Army Medicine's Sustainability Program Adds Value to Operations***
The ability of Army Medicine to achieve its mission and maintain its tactical and strategic edge during a time of increasing complexity of healthcare administration and business operations heavily depends upon the wise use of resources and ability to preserve future choices. The United States Army Medical Command (MEDCOM) Sustainability program strives to be a leader in delivering world-class healthcare solutions with minimal environmental footprint to support those who serve in the defense of our country and secure a resilient future for all. This presentation will illustrate how on-going process improvement to safeguard human health and the environment not only conserves resources but also improves the patient care environment, increases efficiency and lower costs at Army Medical Treatment Facilities (MTFs). MEDCOM's resource aware stewardship saved the Command an estimated $20 Million in calendar year 2017 across 30 MTFs. Cost savings were realized in the areas of municipal solid waste and hazardous waste diversion, greening the operating room, diversion from regulated medical waste, energy efficiency and water efficiency. This session will highlight features of select high performance and sustainable Army hospitals and share best practices. Each year MEDCOM collects data and conducts analysis to track progress and compare performance to our healthcare peers. The tracking is accomplished through the Practice Greenhealth (PGH) annual awards application. PGH is a national non-profit that partners with healthcare systems in order to reduce the industry's contributions to climate change, environmental degradation and other public health issues. As more MEDCOM facilities complete the PGH application process, data supporting the positive impact of MTF achievements is available to facilitate adoption of best practices and improve efficiencies across the entire MEDCOM system and beyond.

3.3 ***Net Zero Energy Warehouse***
Have you ever wondered how to build a completely energy efficient and sustainable building? Here is your chance to learn what is involved in the planning, design, construction, and occupancy of a Net-Zero Energy Building. Presentation will discuss what factors and issues had to be taken into consideration to design and build the award winning, LEED Platinum, NIEHS Net-Zero Energy Warehouse which generated 16 percent more energy than it used in the first year of occupancy.

4.3 ***Panel Theme:*** **Federal Green Challenge Best Practices**
Federal Green Challenge (FGC) is a program for Federal agencies to Lead by Example! The Federal Green Challenge can help support tracking your metrics for your Federal Sustainability efforts towards Executive Order 13834, Efficient Federal Operations. See how data, metrics and award recognition can help support and bolster your sustainability efforts. Whether you are protecting natural resources; dealing with pollution prevention and waste reduction; looking for best practices and sustainability; creating greater energy and water efficiency; preparing in times of disaster (off the grid, storm water management, etc.); seeking environmental compliance or just hanging out with interesting people, this is the session for you. One of the areas featured will be the new federal food waste campaign. Learn about the 10-year history and the story behind the Federal Green Challenge. We will feature recent

award winners and their successes. You'll hear about the nuts and bolts of how the program works and how FGC can help you move your office and program to greater sustainability. Come join this panel of FGC participants and bask in their glow of their award-winning results.

5.3 ***Panel Theme:*** **Private Sector Sustainability Best Practices**

Panelists will share their perspective on their companies' sustainability goals and practices, and why they matter to us and their stockholders/stakeholders. They will also discuss specific initiatives their companies are pursuing to achieve these goals.

6.3 ***Panel Theme:*** **Introduction to the Final Rule on Management Standards for Hazardous Waste Pharmaceuticals and Amendment to the P075 Listing**

On February 22, 2019, EPA finalized tailored and streamlined standards for managing hazardous waste pharmaceuticals that reduce the cost and compliance burden for the healthcare sector, while ensuring the safe management of hazardous waste pharmaceuticals. These changes provide regulatory certainty and national consistency on how the Resource Conservation and Recovery Act (RCRA) applies to the reverse distribution of prescription pharmaceuticals while incorporating flexibilities to accommodate current business practices. With this rule EPA is also taking a common-sense regulatory approach to the disposal of Food and Drug Administration (FDA)-approved, over-the-counter nicotine replacement therapies (i.e., patches, gums and lozenges), which will no longer be considered hazardous waste when discarded. EPA staff that developed the final rule will provide an introduction to the final rule and answer audience questions.

7.3 ***Central Utility Plant Cooling Water Microbiological Treatment and Monitoring Program***

The Central Utility Plant at the NIH utilizes both standard and advanced technologies to measure microbiological growth in the cooling tower open loop and chilled water closed loop. The technologies used by CUP include dipslides, Petrifilm, Adenosine Triphosphate Second Generation (ATP-2G), Legionella culture test and qPCR test. The dipslide (performed 3 times a week) provides an estimation of total aerobic bacteria growth in CFU/mL in the order of magnitude of 10, 100, 1000, and etc. The Petrifilm (performed 3 times a week) measures the total aerobic bacteria growth similarly to heterotrophic plate count in CFU/mL. ATP-2G (performed 3 times a week) enables the CUP to rapidly detect the entire microbiological population within 10 mins, which allows same day corrective actions. Legionella culture test is performed on a Monthly basis on the cooling tower water. CUP is also exploring the qPCR technology (to be performed every week) which allows rapid Legionella spp and L. Pneumophila detection through DNA sequencing. The NIH CUP is going beyond standard approaches to enable fast response to microbiological treatment which is not practiced anywhere else in the industry.

8.3 ***Panel Theme:*** **Environmental Management System Effective Implementation**

The Department of Defense (DoD) utilizes a formalized Environmental Management System (EMS) framework to establish and maintain proactive environmental management of environmental requirements at DoD installations and ranges. DoD's EMS is modeled after the International Standards Organization (ISO) 14001 framework of Plan-Do-Check-Act. The goal for DoD's EMS is to comply with environmental legal obligations, ensure effective management of environmental risk, and instill a culture of continuous environmental improvement. When properly implemented, the EMS can identify the environmental aspects impacting the mission, highlight and prioritize areas of related risk, promote pollution prevention initiatives, and preserve and maintain the natural and built infrastructure or our installations and ranges. DoD aspires to use EMS effectively to improve operational efficiency while reducing environmental risk and associated costs. This management approach is consistent with goals of Executive Order 13834, Efficient Federal Operations. Military components within the Department of Defense (DoD) strive to integrate the EMS into core business areas to properly plan mission requirements, improve sustainable practices and evaluate progress through senior-level environmental management reviews and external audits to validate conformance with key elements of the ISO 14001 Environmental Management Standards along with determination of effectiveness to support installation operations. While DoD encourages military components to use the ISO 14001 standards in developing internal EMS policies, Executive Order 13693 gives federal agencies the flexibility to implement EMS where effective. This has led each military service and the Defense Logistics Agency to implement the EMS and gauge effectiveness in a manner best suited for each's respective organizational construct and mission. The proposed panel will discuss the best practices amongst military components of this implementation to include information on how effectiveness is measured, methods to monitor progress, utilizing external inspections and other information management tools to track EMS effectiveness and determine conformance (without 3rd party certifications), and share process for ensuring leadership support.

Breakout Session 4

3.4 ***Performance Contracting on the NIH Bethesda Campus***

NIH has completed over 25 energy and water conservation projects since 2001. These projects were completed via DOE Energy Savings Performance Contracts (ESPC) and Utility Energy Service Contracts (UESC), and include cumulative savings of nearly 65,000,000 kWh, 6000 kW, 150,000,000 gallons of water, 350 million BTU, and $10 million in annual cost savings. This presentation will discuss some of these projects, and the technologies included that were installed.

7.4 ***Neutralizing Amines for Direct Steam Humidification Applications***

Dip slides and laboratory plate counts are both standardized technologies used to monitor total aerobic bacteria levels in cooling water systems. They both provide a measure of the number of free-floating aerobic bacteria growing in a water sample, with the results expressed as Colony Forming Units per mL of water (CFU/mL). These tests reflect the number of "culturable" aerobic bacteria in a sample, which could be as low as 1-2% of the total bacteria present. They do not measure bacteria that will not grow on the culture media at the incubation temperature, bacteria that are not actively growing at the time of sampling, bacteria with special growth requirements, including iron reducing bacteria (IRB), sulfate reducing bacteria (SRB), or Legionella. Since the incubation time is about 48 hours, the traditional method cannot provide feedback quick enough to adjust or optimize the biocide dosage. The National Institutes of Health is the first in such industry to use Adenosine Triphosphate Second Generation (ATP-2G) testing to rapidly detect entire microbiological population. ATP results are trended with plate count results (Petrifilm) and a positive correlation was developed on each system. Meanwhile, Biomass Stress Index (BSI) is measured to study the kill effect of the biocide. A standard is being developed to establish a good kill range based on the BSI results.

Breakout Session 5

1.5 ***America Recycles Day***

In 2018, EPA hosted the America Recycles Day (ARD) Summit that brought together stakeholders from across the U.S. recycling system to join EPA in signing the America Recycles Pledge. Since that important event, EPA has worked with the signatories to develop a Framework for Advancing the U.S. Recycling System that guides industry and agency priorities to sustain and improve recycling in America. As ARD 2019 approaches, EPA will share the progress that has been made and what more can be done.

2.5 ***Panel Theme:*** **Best Practices on Building the Federal Electric Vehicle Infrastructure**

A brief discussion of how laws and federal requirements have shaped the way GSA and partner agencies have built the federal electric vehicle infrastructure; how agencies can finance electric vehicles and plan for, purchase and install electric vehicle charging stations; and how agencies can operate and maintain vehicles and stations and implement a workplace charging program. GSA has a pre-negotiated BPA for Level 1, 2 and D.C. Fast Charging stations available to all agencies authorized to purchase or lease from GSA.

3.5 ***Panel Theme:*** **Water Efficiency in Federal Facilities**

Integrating water efficiency in Federal facilities starts with developing a comprehensive water management plan. The plan provides information on current water uses and charts a course for water efficiency improvements, conservation activities, and water reduction goals. A strategic plan lays out the priorities and helps a site or agency allocate funding for water efficiency projects that provides the biggest water reduction impact. These elements will be covered in the "Water Efficiency in Federal Facilities" presentation at the 2019 Federal Environmental Symposium that provides an overview of the important steps that should be conducted for a comprehensive water management plan to ultimately integrate water efficiency in Federal facilities. The presentation will also provide attendees with the key resources and tools that have been developed by the DOE Federal Energy Management Program to assist Federal agencies in developing these water management plans.

4.5 ***Federal Food Initiatives and Efforts***

Too often, good, nutritious food is wasted. In the United States, food is the largest stream of discarded materials, accounting for nearly 22 percent of our waste. In 2015, only 5 percent of the 39.7 million tons of food waste generated in the U.S. was composted. Reducing this staggering amount of food loss and waste will require the efforts of the entire food system. This session will provide an overview of the actions and leadership being taken by federal agencies in reducing food loss and waste to meet the national goal, as well as resources available, and the role federal facilities can play. It will highlight the interagency Winning on Reducing Food Waste Initiative and Strategy (led by the U.S. Environmental Protection Agency, U.S. Department of Agriculture, and the U.S. Food and Drug Administration) as well as the U.S. Department of Agriculture's farmers market in Washington, D.C. The market is a living laboratory for farmers' market operations across the country, including for federal facilities looking to establish a farmer's market on site.

5.5 ***Panel Theme:*** **Sustainability Best Practices from Academia**

Higher Education is uniquely positioned at the intersection of cutting edge research and knowledge while operating large portfolios of building space - creating many challenges and opportunities for innovative sustainability practices. Three universities will share their approaches for accelerating sustainable operations, engaging communities and sustainability innovation that can serve as a model for other large-scale organizations. Attendees will learn about climate action and greenhouse gas mitigation strategies, engagement programs for workplaces and labs, and pioneering research to address climate change, with time at the end for questions.

6.5 ***Panel Theme:*** **Clean Air Act Developments: Federal Regulations on Emergency and Non-Emergency Generators**

Facility manages and public work officials at government agencies have a responsibility to properly maintain infrastructure systems to support essential operations which are necessary to accomplish their mission. The availability of energy, especially electrical power, is an essential component of an agency's infrastructure system. The need for electricity also requires the availability of standby electrical generation. Emergency generators have proven to be a reliable technology that when needed, provides on-site power with a minimum of disruption. Facility managers also use energy management strategies to tackle energy supply and consumption. Combined heat and power (CHP) systems provide a sustainable approach for energy production. Because of these energy benefits, facility managers should be aware of the Federal and State regulations that pertain to the permitting, installation and operation of emergency generation, non-emergency electrical power generation, and CHP. This presentation will provide an overview of the most significant federal regulations impacting emergency and non-emergency generators. Using this baseline knowledge of federal and Maryland regulatory requirements, information will be provided on current trends in Maryland, including the use of CHP projects at large institutions, emergency demand response and the use of natural gas as a fuel.

7.5 ***Novel Central Plant Environmental Optimization Technologies***

The Central Utility Plant at the NIH utilizes the latest technologies to minimize corrosion, biological growth and discharge water quality in all water systems. An industrial IoT "Big Data" platform has been developed to collect the data from the real-time sensors, daily, weekly and quarterly lab testing data, and present the results on key performance indicator dashboard websites. For the boiler plant, cyclohexylamine and diethylaminoethanol are injected into the steam line to prevent pipeline corrosion. For the chiller plant, ATP-2G technology is applied to provide a rapid detection of microbiological growth in both chilled water and condenser water within minutes. Chlorine dioxide (ClO2) and non-oxidation biocide is used to control the bacterial growth in the closed loop chilled water and open loop cooling tower condenser water. qPCR is used for fast detection of Legionella in addition to the traditional ISO 11731 method. On the effluent discharge side, electrocoagulation is being evaluated to remove copper in the cooling tower blowdown so that the storm discharge does not have negative impact on water lives. With all the novel technologies presented, NIH continues to lead the way in revolutionizing industrial water treatment and improve efficiency on the processes.

8.5 ***Implementing EMS at Leased USAF Industrial Facilities (GOCOs) – Part 1***

This presentation demonstrates how the EMS is applied to USAF Industrial Facilities leased by contractor operators who are also the Original Equipment Manufacturers for weapons systems for the DoD and allies. The concept shows the linkage to AF Instruction 32-7001, Environmental Management, and its link to the ISO 14001 and various media layers imbedded within the environmental inspection program which uses the TEAM Guide and supplements put out by FedCenter.

Breakout Session 6

8.6 ***Implementing EMS at Leased USAF Industrial Facilities (GOCOs) – Part 2, Baseline Surveys***
This is part 2 (optional) if wishing to expand on the earlier topic of EMS overall applying to GOCOs, or this could be a standalone example of documenting EMS through the Supplemental Environmental Baseline Surveys. Once a routine 5-year comprehensive survey, the supplemental has been used in-house by the AFLCMC in support of temporary usage, lease renewals, and land transfer arrangements in consult with legal and various regulations. These supplemental provide low cost supplements demonstrating environmental aspects, objectives and targets, pollution prevention, and summary of compliance activities relating to environmental programs.

Breakout Session 7

1.7 ***How to Recycle In Federal Facilities***
In this interactive session, we will discuss all aspects of recycling in federal facilities, including evaluating the waste stream, bin selection and location, educating and motivating employees, and tracking program progress. Participant are encouraged to bring in their questions for group discussion and contemplation.

3.7 ***Using Peracetic Acid as a Disinfectant for Water Systems***
In 2016, The New Jersey Department of Environmental Protection (NJDEP) announced it would be implementing more stringent limits on Chlorine Produced Oxidants (CPO) in the New Jersey Discharge and Pollution Elimination System (NJDPES) effluent permit points for Princeton Plasma Physics Laboratory. The new CPO permit limits were to be lowered to concentrations that would neither be effective for water treatment nor be measurable by current methodology. In response, PPPL investigated alternatives to chlorine as a primary biocide. PPPL implemented the use of Peracetic acid (PAA) as a primary biocide for the cooling tower water and Fire Protection water system. This allowed the site to preclude the need for chlorine and monthly analysis for the chemical. This paper describes the challenges and decisions made during the implementation of this protocol and system. It will describe the equipment used for delivery of PAA, test methods for determining level of PAA in the water systems and operational results.

4.7 ***Panel Theme:*** **Executing Onsite Distributed Energy Projects**
The presentation will cover federal procurement options to implement distributed energy projects, including in-depth information regarding one option - energy savings performance contract energy sales agreements (ESPC ESAs). Two case studies will be covered: the NIST Gaithersburg solar ESPC ESA using the ENABLE contract vehicle and the GSA aggregated solar PPA procurement in Washington DC.

6.7 ***Combined Heat and Power-Meeting JSC's Energy Demands for Mission Support***
In mid-2018, a multi-year effort of planning, designing and financing came to fruition, as NASA-JSC completed installation and commissioning of a Combined Heating and Power (CHP) Facility. Under an innovative Energy Saving Performance Contract (ESPC) and in cooperation with the Department of Energy, Energy Systems Group (ESG) successfully completed construction and began operating and maintaining two 5.7 MW gas-fired turbines and ancillary equipment. "Waste heat" from the turbines is converted into high-pressure steam that operates steam chillers, in lieu of or in conjunction with two boilers within the Central Heating and Cooling Plant; thereby providing air conditioning for most of JSC's central mall buildings. The ESPC financing mechanism provided the upfront construction cost of $47M for the CHP, and essentially results in a 22-year "mortgage" - the electricity cost savings over that timeframe will be used to repay ESG. The CHP provides JSC with much greater electrical reliability and mitigates the effects of electrical grid brownouts and power interruptions that can be highly disruptive to 24/7/365 operations (e.g., Mission Control). Because the CHP is powered by clean-burning low-sulfur natural gas, it greatly reduces reliance on less efficient standby diesel-powered generators. The adverse effects of its associated nitrogen oxides emissions are mitigated, thanks to state-of-the-art catalytic aqua ammonia stack scrubbers; emissions are continuously monitored/controlled by utilizing a CEMS. Although the CHP subjects JSC to

the Greenhouse Gas (GHG) mandatory reporting rule (40 CFR 98), there is an estimated net reduction of approximately 15% of GHG emissions through enhanced turbine combustion efficiency and an associated 60% or greater reduction of power utilization from the electrical grid. The CHP demonstrates a proactive multidisciplinary teaming effort, contributing to achieving the agency's energy efficiency and environmental stewardship goals.

8.7 ***Panel Theme:*** **Reflections from DOE Sites on Implementing EMS for 15 Years: Best Practices**
The Department of Energy started implementing Energy Management Systems 15 years ago. Come hear about the best practices around management review, communications and training. Some examples of successful best practices include a DOE site that did a management review benchmark to identify the best practices in DOE and then adapted the top practices for their organization; a small DOE site has been effective in making communications a part of everyone's job: writing articles for internal newsletters, connecting environmental practices with work and home, and creating their own YouTube channel to keep their stakeholders informed. DOE Headquarters may also discuss how sites have used their EMS to continuously improve their operations while increasing environmental compliance and supporting sustainable practices. These examples, or others, will be included in the presentation based on the availability of speakers from the site.

Breakout Session 8

6.8 ***The Benefits of Using Landfill Gas at NASA Goddard Space Flight Center***
NASA's Goddard Space Flight Center (GSFC) is located in Greenbelt, Prince George's County, Maryland. It is a laboratory facility where work activities consist of research, fabrication of equipment, and satellite tracking. GSFC provides steam to buildings for heating, hot water, humidification, and some process heating from a central boiler plant consisting of five 49.5 MMBtu boilers fueled by natural gas, landfill gas, and #2 fuel oil. Landfill gas has been used in GSFC since January 2003 and now accounts for approximately 55% of the total energy input to the boilers. Landfill gas is a product of anaerobic decomposition of garbage in a landfill containing approximately 50% methane with an average heating value of 500 Btu/scf. Landfill gas is compressed at the Sandy Hill landfill located approximately five miles from GSFC and piped to the GSFC's boiler plant, where three boilers were modified to burn it. The use of landfill gas has been successful at GSFC. The environmental benefits such as the reductions in criteria pollutant and greenhouse gas emissions as well as the cost saving are identified. For example, the introduction of landfill gas at GSFC has led to the reduction of NOx emissions by approximately 18%, helped maintain the total heat input of the boilers within the permitted limit, and avoided GHG reporting since landfill gas is considered a biogenic fuel.

Breakout Session 9

6.9 ***Ask the Inspector (ATI) Workshop***
This workshop known as "Ask the Inspector Workshop" is intended for federal personnel who are involved in environmental compliance activities. This training concept, will provide a framework to help identify and manage potential compliance issues affecting the federal sector. This will be accomplished through a combination of lectures from experienced compliance inspectors along with a Q&A inspector panel. Communication between participants and instructors on their experience will add a crucial component to the desired outcome of compliance assistance in the federal sector. This workshop will cover the following areas: Clean Water Act (CWA), Clean Air Act (CAA), Underground Storage Tanks (RCRA-I), Spill Prevention, Control and Countermeasure (SPCC), and Hazardous Waste (RCRA-C).

Exhibitors:

Exhibit Title: SFTool Product Search: Sustainable Procurement Simplified
POC: Michael Bloom, GSA
Description: GSA and Ecomedes will demonstrate SFTool Product Search (https://sftool.ecomedes.com/) providing training to the Federal procurement and specifier community. Our team will engage visitors with our website using laptops and tablets to highlight how SFTool Product Search simplifies and streamlines procurement compliant with statutory requirements and EPAs recommended Specifications, Standards, and Ecolabels.

Exhibit Title: Federal Facilities Environmental Stewardship & Compliance Assistance Center (FedCenter)
POC: Steve Luzzi, USACE
Description: FedCenter.gov is the Federal government's home for comprehensive environmental stewardship and compliance assistance information for Federal facility managers and their agencies.

Exhibit Title: UNICOR Electronics Recycling
POC: Antwoine Davis, DOJ
Description: The exhibit will provide information and resources for the UNICOR electronic asset recycling program which services many federal agencies throughout the country.

Exhibit Title: DoD REC and Chesapeake Bay Programs
POC: Trevor Manning, NAVFAC
Description: Informational display on the DoD Regional Environmental Coordinator for EPA Regions I and III and the DoD Chesapeake Bay Programs.

Exhibit Title: ACT: The Environmental Impact Factor Label
POC: Annie Bevan, Sustainability Made Simple / My Green Lab
Description: ACT is the first eco-label for laboratory products. We were asked to attend this event to share our work on sustainable procurement in laboratories through the ACT label.

Exhibit Title: United Soybean Board: Successful Government Uses of Biobased Products
POC: Karen Edwards, KCE Group
Description: The United Soybean Board (USB) represents U.S. farmers who help develop and promote biobased products ranging from biodiesel to Goodyear tires to HeatLok soy insulation, motor oils and formaldehyde-free plywood. The USB has documented case studies of success with federal and local governments, including New York City.

Exhibit Title: DoD Sustainable Technology Evaluation and Demo Program
POC: George Handy, Noblis
Description: Sustainable and biobased sorbents - Natures Broom.

Exhibit Title: DoD Sustainable Technology Evaluation and Demo Program
POC: George Handy, Noblis
Description: Sustainable and energy efficient doors and access controls.

Exhibit Title: DoD Sustainable Technology Evaluation and Demo Program
POC: George Handy, Noblis
Description: Sustainable and biobased motor oil - biosynthetic technologies.

NIH

The Department of Health and Human and the National Institutes of Health are excited to host the Environmental Symposium on our site this year as it ties into our overall mission.

NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

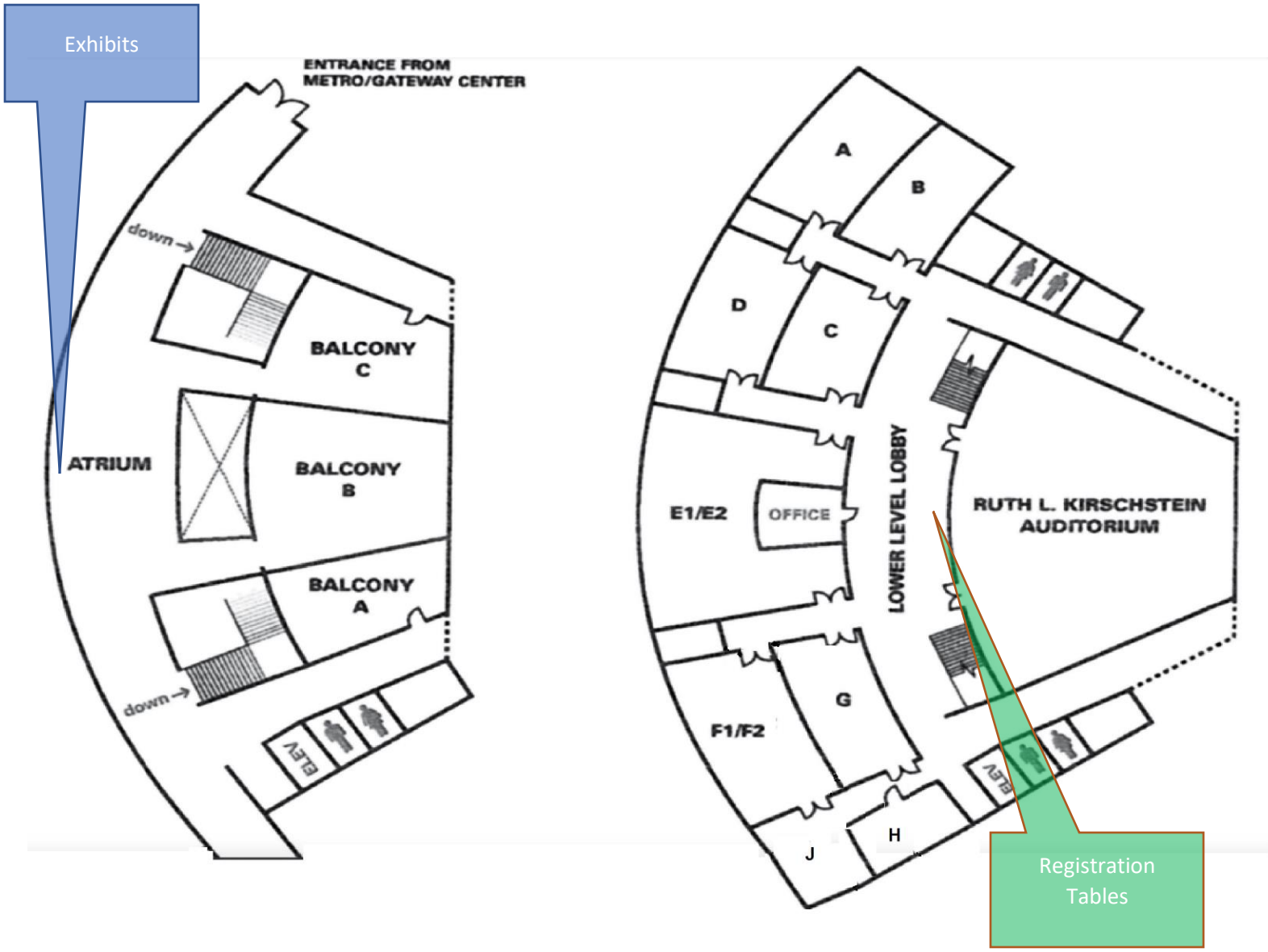
The goals of the NIH are:

- to foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health;
- to develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease;
- to expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research; and
- to exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

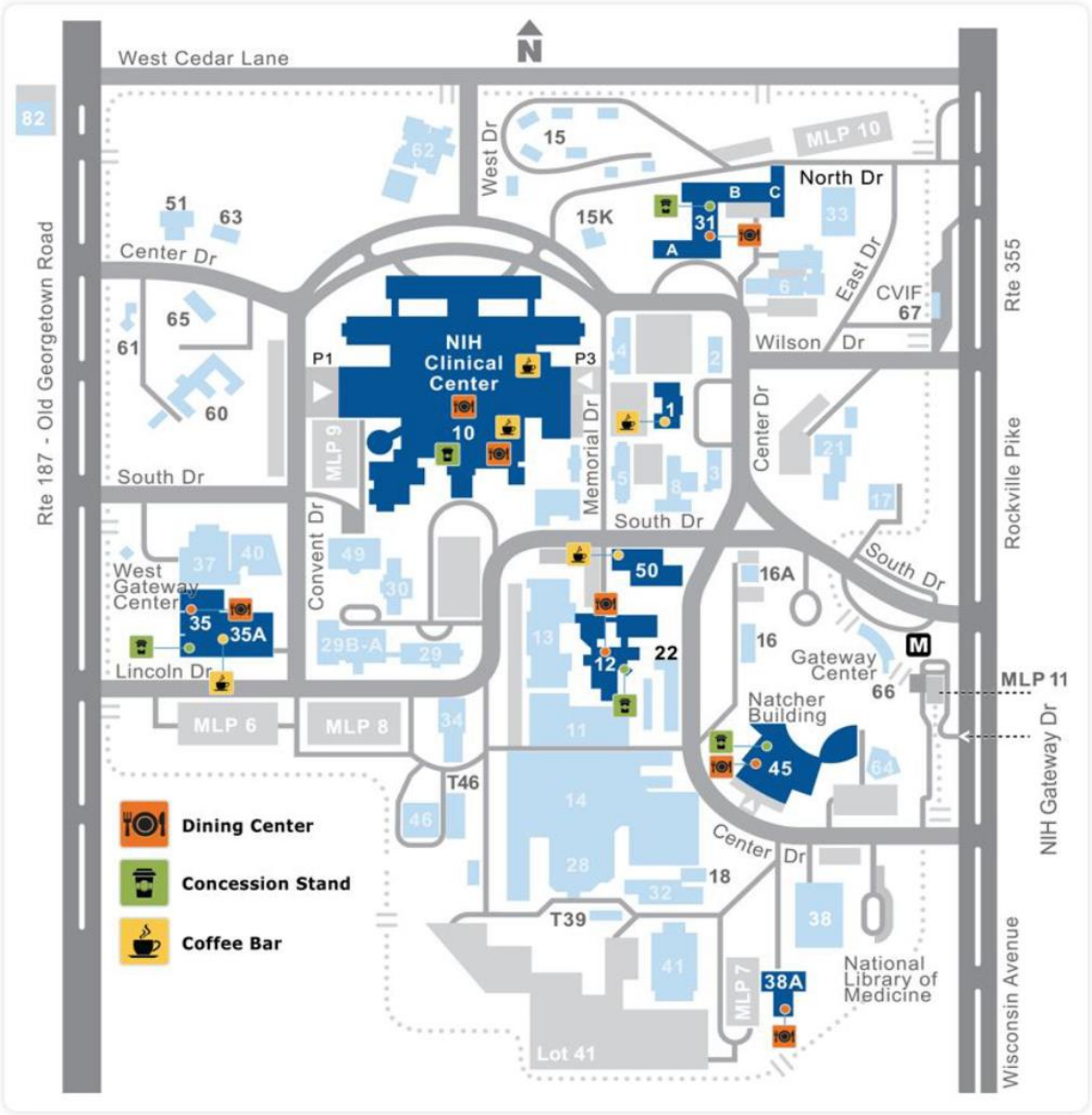
In realizing these goals, the NIH provides leadership and direction to programs designed to improve the health of the Nation by conducting and supporting research:

- in the causes, diagnosis, prevention, and cure of human diseases;
- in the processes of human growth and development;
- in the biological effects of environmental contaminants;
- in the understanding of mental, addictive and physical disorders; and
- in directing programs for the collection, dissemination, and exchange of information in medicine and health, including the development and support of medical libraries and the training of medical librarians and other health information specialists.

Natcher Conference Center Layout



Food Options



Cafeteria and Coffee: Variety of full-service cafeteria and coffee bars are available within vicinity of Natcher building (Building 45). Building 45, 38A & 12 has full-service cafeterias with variety of hot and cold food and beverages options.

Committee Members

Sharon Baumann	DoD
Everette Bole	HHS
Steven Davis	DEA
Holly Elwood	EPA
Howrey Ferguson	VA
Kenny Floyd	NIH
William (Bill) Fortune	DOE
John Galbraith	USDA
Melanie Garvey	EPA
Dawn Gunning	DHS
Diana Hirshfeld	HHS
Jose Jimenez	EPA
Brian Kim	NIH
Jenna Larkin	EPA
Steve Luzzi	FedCenter- ACE
Jody McClarin	VA
Mansi Mehta	NIH
Kathy Moxley	NASA
Lixa Rodriguez Ramon	NASA
Debbie Rosano	DOE
Dave Sperry	ACE
Andrea Thi	DOJ
Karen Waldvogel	USDA
Justin Young	EPA
Stephen Zettlemoyer	DHS

2021 Federal Environmental Symposium

The Planning Committee wants to invite you to the 2021 Federal Environmental Symposium. The event is scheduled for March 29-31, 2021, please mark your calendar at the Natcher Conference Center here on the NIH campus. If you have suggestions (i.e., track topics, presentations, tours) and or would like to help, do not hesitate to send us a message to fedsym2021@www.fedcenter.gov.

Bios

Breakout Session 1

1.1

Angela Urban

Angela Urban holds a Masters in Urban & Regional Planning and Minor in Global Studies. At the Construction Engineering Research Laboratory (CERL), the research component of the U.S. Army Corps of Engineers (USACE), Angela specializes in environmental support for military installations worldwide, such as pollution prevention, sanitation, and waste management. She also participates in Disaster Relief Operations and mentors engineering, environmental science, and urban planning students. Prior to working as an environmental researcher for USACE, Angela served six years as a Joint Forces Intelligence Analyst. For twenty years, Angela has facilitated classroom instruction for all ages and education levels, from grade-school through professional. Angela is also a found-object artist, creating sculptures from re-used materials, as well an avid baker.

2.1

Chandra Shah

Ms. Shah is a Senior Project Leader with the National Renewable Energy Laboratory. She has supported the FEMP program since 1998 and has over 15 years of experience helping federal partners reduce costs using distributed energy (through ESPC Energy Sales Agreements, PPAs and utility partnerships) and off-site renewable purchases. She is a Certified Energy Manager and holds an MBA from the University of Washington and a Bachelor of Science in Mechanical Engineering from the University of Michigan.

Mike Sandler

Mike Sandler is the Energy Program Manager at the U.S. Drug Enforcement Administration. Prior to joining the Federal Government, he worked on energy programs for several local governments in Northern California. He has received a FedSpotlight recognition and a FEMP Energy and Water Award for his work in implementing DEA's first renewable energy project, a 2.4 MW solar PV project in El Paso, Texas, using an innovative EPSC ENABLE/ESA performance contract. He has a degree in Political Economy from the University of California, Berkeley, and a Master's in Urban Planning from UCLA.

Douglas Gagne

Douglas Gagne is a Project Analyst at the National Renewable Energy Laboratory (NREL). He currently provides early stage federal project development support for renewable energy and resilience projects. He has evaluated the transaction structures, valuation and technical characteristics of projects spanning most conventional renewable energy technologies, and brings a robust understanding of solar photovoltaic project costs and financing mechanisms. He joined NREL after graduating from the University of Denver with a Master of Business Administration.

3.1

Clayton Johnson

Clayton Johnson is a Research Associate in the Building Technology & Urban Systems Division at Lawrence Berkeley National Laboratory. Clayton's focus area is sustainable federal operations, with a concentration on energy-efficient product procurement. Clayton holds a bachelor's degree in Environmental and Sustainability Studies from the University of Utah, and has several years of past experience working on energy efficiency and renewable energy issues in the non-profit sector. Through his past experience, Clayton has gained insights into policy issues and communications practices that provide his foundation for supporting program training and outreach for the sustainable federal operations efforts at Berkeley Labs.

4.1

Maureen Alonso

Maureen Alonso, Regional Horticulturist with GSA with thirty years of experience in landscape management, design and maintenance and unique experience of overseeing large-scale landscape management on Federal sites in the Washington DC metro area. Maureen's work involves landscape design and management on over 75 federal properties to include green roofs, drought tolerant landscapes, pollinator gardens, and urban tree canopy enhancement. She received her BS in Ornamental Horticulture from University of Maryland.

Ray Mims

At the U.S. Botanical Garden, Ray Mims oversees sustainability efforts and conservation partnerships.
He worked in the development of the Sustainable Sites Initiative and the SITES AP credential. He led the federal working group that drafted White House Council on Environmental recommendations on sustainable practices for designed landscapes and worked on the addendum supporting the health of pollinators. An engineer by training, he finished his horticulture studies at the Royal Botanic Garden Kew.

James Gagliardi

James Gagliardi is a supervisory horticulturist with Smithsonian Gardens. He is responsible for the landscapes of the Freer, Castle, Haupt Garden, Rose Garden, and Ripley Garden as well as at the National Museum of Natural History, including the Pollinator Garden and the Urban Bird Habitat. He is honored to be the editor of the Smithsonian's first gardening book, Encyclopedia of Garden Plants for Every Location. James studied horticulture at the University of Connecticut and went on to earn a master's degree from the Longwood Graduate Program in Public Horticulture at the University of Delaware. He previously served as the horticulturist for River Farm, the headquarters of the American Horticultural Society in Alexandria, Virginia.

Lauren Mandel

Lauren Mandel PLA, ASLA is an associate and researcher at Andropogon, where she pursues her passion for productive infrastructure through design, research, and writing. Lauren works to advance the field of landscape architecture by integrating interdisciplinary collaboration and fringe solutions into professional practice. In 2013 she authored "EAT UP: The Inside Scoop on Rooftop Agriculture" (New Society Publishers), the first full-length book about rooftop food production, and in 2017 was the lead researcher and author for GSA's Site Commissioning White Paper. Lauren holds a Master of Landscape Architecture from the University of Pennsylvania and a BA in Environmental Science.

5.1

Daniel Kreeger

Daniel Kreeger is co-founder and executive director of the Association of Climate Change Officers (ACCO) and has a unique familiarity of climate change and sustainability initiatives being undertaken across the public and private sectors. Dan has led ACCO's programming efforts since 2008, as well as the establishment of its certification and training programs. In 2017, Dan co-founded the nation's first state-run climate change institution, the Maryland Climate Leadership Academy. Dan is a recognized expert on institutionalizing climate change into decision-making in the public and private sectors. Over the years, Dan led ACCO's partnership with the White House Council on Environmental Quality to twice produce their flagship conference on sustainability in Federal agency operations, the GreenGov Symposium, and also served as a co-founding steering committee member for the consortium that jointly administered EPA's Climate Leadership Awards from 2012-2015. He has also served as a reviewer for the IPCC 5th Assessment in 2014 and numerous Federal agency grant committees. An accomplished business executive with more than 20 years of cross-functional experience in change management and enterprise business strategies across sectors, Dan focuses upon the human capital, economic and operational implications of environmental and public health issues. Dan serves on the Dean's Council of Advisors at the FIU College of Architecture and the Arts and frequently lectures at graduate and executive education programs nationwide.

6.1

Philip L. Milton

Phil Milton currently serves as the National Audit Policy Coordinator in EPA's Office of Civil Enforcement (OCE). Since October 2004, as the National Coordinator, Phil assists the Regions, Headquarters and the regulated

community with Audit Policy interpretation and implementation issues, promotes the use of the Policy, encourages innovative uses of the Audit Policy, and chairs the Audit Policy Coordination Team (ACT) a team consisting of senior staff and managers from the Regions, Headquarters, and Department of Justice. For over 20 years, Phil has led many of the multimedia Audit Policy disclosures handled by OCE. Phil is a 1986 Chemical Engineering graduate of Tufts University.

David Smith-Watts
David Smith-Watts is an Attorney-Advisor in EPA's Office of Civil Enforcement (OCE), a part of the Office of Enforcement and Compliance Assurance (OECA). David is a member of OCE's Audit Policy Team, which implements EPA's Audit Policy and other self-disclosure policies. David is also the national point of contact on legal, policy, and financial issues relating to the assessment of civil penalties. David holds a B.A. in Philosophy, Political Science, and Economics from Denison University, and a J.D. from the University of Toledo College of Law with a Certificate of Specialization in Environmental Law.

Gary Jonesi
Gary Jonesi has worked at EPA since 1985, serving as a staff attorney, Senior Counsel, hazardous waste enforcement Branch Chief, Department of Justice Special Trial Attorney, and as the National Coordinator for EPA's E-Discovery, Audit Policy, and Administrative Litigation programs. He has worked on some of the largest and most significant environmental enforcement cases ever brought, including as a member of the Deepwater Horizon Gulf of Mexico Oil Spill civil penalty trial team. He has experience with cases across all major EPA statutory programs and all levels of administrative and judicial litigation. Concurrent with his EPA duties, Gary taught environmental law for 15 years at The Catholic University of America, authored numerous environmental enforcement articles, and has been a frequent speaker at environmental conferences. He is a graduate of the Hofstra University School of Law and the University of Illinois.

Dominique Freyre
Dominique Freyre is an Attorney-Advisor in EPA's Federal Facilities Enforcement Office (FFEO) within the Office of Enforcement and Compliance Assurance (OECA). Dominique leads the federal facilities sub-group within EPA's NPDES SNC National Compliance Initiative, and also works on a myriad of other regulatory and cleanup topics as they relate to federal facilities. Dominique graduated from the University of Wisconsin-Stevens Point with a B.S. in Biology, and has an M.S. in Biology from the University of Nebraska-Omaha. She also holds a J.D. from Northwestern University School of Law.

Ken Duncan

Ken Duncan has worked for the US Army Corps of Engineers for over 20 years working in environmental compliance at USACE hydroelectric and flood control Projects. He is currently serving as the USACE HQ Environmental Compliance and Sustainability Career Assignment Program detailee for 6 months. His normal position is the Portland District Environmental Compliance and Sustainability Program Manager where he manages the EC&S program for 26 federal facilities. He has Political Science and Environmental Science degrees from Willamette University.

7.1
Karen Armijo
Karen Armijo conducts oversight of M&O operations for environmental permitting and compliance, including RCRA and NPDES Programs at Los Alamos National Laboratory. She has broad environmental compliance experience both inside and outside the Federal Government, and has been with NNSA for three years.

Al MacDougall

Al MacDougall has over thirty five years of experience providing oversight of high consequence activities in the Navy, commercial nuclear power industry and in DOE. He has led the innovations in oversight process, training and applications for the National Training Center and is presently leading the transformation of the DOE's Technical Qualification Program.

Tertia Speiser
Tertia Speiser has been with DOE's Energy Efficiency and Renewable Energy office for ten years, and currently manages the independent oversight program for the Golden Field Office. As Chief of Staff, she has broad cognizance of all field office operations.

Larry Palmer

Larry Palmer brings more than 40 years of experience in Naval and DOE nuclear facility operations, including extensive technical knowledge for design, development, implementation and evaluation of training and qualification programs for high-risk positions and is leading the DOE National Training Center's Oversight curriculum.

Darlene Rodriguez

Darlene Rodriguez is the Landlord and Stewardship Programs Team Lead for the Mission Assurance and Infrastructure organization of the National Nuclear Security Administration (NNSA) Los Alamos Field Office. She is leading the implementation of the Functional Area Oversight Plan tool at NNSA Los Alamos.

8.1
Jody McClarin
Jody McClarin is the Veterans Health Administration National Green Environmental Management Systems Program Manager for Operations where she provides guidance and oversight for Environmental Programs at over 150 VA Medical Centers and 18 Network Offices. She holds a Bachelor of Science degree in Civil Engineering from the United States Air Force Academy and Master of Science in Environmental Studies from Southern Illinois University. Prior to the VA, she worked for the U.S. Postal Service as a District Environmental Compliance Coordinator and Mail Processing Plant Engineer. Ms. McClarin served 9 years on active duty as an officer in the US Air Force, holding positions in Engineering, Project Planning, Facilities Maintenance, and Environmental Compliance. She has 29 years of training and experience in all aspects of Environmental Management.

Breakout Session 2

1.2
Abigail Brake
As part of the ERDC-CERL Environmental Support Team, Abigail Brake helps to conduct waste characterizations and develop Integrated Solid Waste Management Plans (ISWMPs) for Army Installations around the world. She is the primary researcher focused on analyzing waste characterization results and providing reports to Army Installations in order to inform management on problematic areas and help to provide sustainable solutions for waste reduction. Her work experience in this area directly impacts how Federal facilities are able to lead environmental change by utilizing detailed and site-specific waste data to inform best management practices across any platform.

Lucy Aistis
Lucy Aistis is an Environmental Protection Specialist at the National Institutes of Health. Her primary focus is strategic communication of sustainable practices to reduce environmental impacts and support operational efficiency. Lucy received a dual degree B.A. from West Virginia University in Environmental Geoscience and International Studies.

Jaroslav Sebek
Jaroslav Sebek is an Environmental Engineer at the National Institutes of health. As part of the Office of Research Facilities (ORF) and Office of Research Services (ORS) Green Team he works on sustainability projects to increase the environmental sustainability of the ORF, ORS and the NIH.

Terry Foecke
Terry Foecke is the Team Leader for the Analysis, Prevention and Reduction team in the Environmental Stewardship Group at Los Alamos National Laboratory (LANL). Prior to joining LANL, he worked for the Environmental Defense Fund, Walmart, Medtronic and many others to assure that factories use materials, equipment and practices that are environmentally and socially progressive. In a project to "green" Wal-Mart's China supply chain he developed and managed an internal team that engaged with over 650 factories in Mainland China. Terry believes that the key to environmental and social progress is to make it easy to do what is right.

2.2
Terrance Glover

Terrance Glover holds the role of EPEAT Relations Manager at the Green Electronics Council (GEC), supporting federal purchasers who acquire sustainable IT products and developing resources on various topics related to sustainable IT. Prior to joining GEC, Mr. Glover worked as a climate change and sustainability researcher at ICF International, with a focus on greenhouse gas accounting. He assisted federal clients such as the Environmental Protection Agency, National Park Service, Federal Highway Administration, and the U.S. Agency for International Development in various tasks related to climate change mitigation and sustainable development. Before ICF, Mr. Glover was a fellow at EPA in the Water Security Division, performing communications and outreach work to promote water contamination emergency preparedness resources in the US water sector.

David Harrity

David Harrity is the Associate CIO for Enterprise Infrastructure & Operations at the U.S. General Services Administration (GSA). In his role, he leads personnel to initiate, broker, integrate and orchestrate a full range of enterprise-wide digital and IT services. Harrity has a M.S. in Management of IT from University of Virginia, and a B.S. in Nuclear Engineering Technology from Thomas Edison State University. He holds several certifications including CGEIT, CTBME, CISM, and FAC-P/PM III.

Dawn Gunning

Dawn Gunning currently works as a Sustainability and Environmental Compliance Program Manager for the Department of Homeland Security (DHS). In her current role, she provides direction and oversight to DHS Components in the areas of sustainability, environmental compliance, auditing, environmental liabilities, sustainable buildings, environmental due diligence, and federal environmental reporting. Prior to DHS, Ms. Gunning worked as an Environmental Protection Specialist at FEMA, where she led a successful compliance initiative for its nationwide petroleum storage tank program. From 2001 through 2010 Ms. Gunning helped manage the environmental program at the Department of Justice. Ms. Gunning holds a Bachelor's degree in Business from the State University of New York (SUNY) College at Buffalo, and a Master's degree in Environmental Science, from SUNY Environmental Science and Forestry in Syracuse, New York.

3.2
Sravan Chalasani
Sravan is a Research Associate in the Building Technology & Urban Systems Division at Lawrence Berkeley National Laboratory (LBNL), focusing on implementation and evaluation of FEMP's EEPP program. Sravan has a Masters degree in Environmental Science and Management from the University of California, Santa Barbara and has experience doing research and data analysis on climate change mitigation policies and local government sustainability initiatives. He also worked at an international non-profit organization focusing on corporate sustainability and GHG inventorying.

Molly Morabito
Molly Morabito is a Senior Research Associate at Berkeley Lab working on the topics of clean energy technology adoption and the implementation of improved sustainability practices in the federal government. Her research focuses on encouraging increased compliance with energy efficiency standards in federal procurement and the purchasing and adoption of clean energy technologies by California organizations in the state and private sector.

Liyang Wang

Liyang is a Senior Research Associate at Lawrence Berkeley National Laboratory. She works to accelerate the adoption of clean energy technology nationally by identifying institutional barriers and implementing programs to overcome obstacles in technology acquisition. Before joining the lab, she worked as an energy efficiency consultant in Massachusetts, where she managed utility energy-efficiency incentive programs and helped to implement emerging technology program. She is a Certified Energy Manager (CEM) and Engineer-in-Training (EIT) and holds a Bachelor of Science degree in Mechanical Engineering from the University of Massachusetts-Amherst.

4.2

Richard S. Wermers
Mr. Wermers currently serves as the Health Facilities Environmental Compliance and Energy Manager for the Division of Facilities Operations and the Deputy Chief Sustainability Officer for the Office of Environmental Health and Engineering at the Indian Health Service Headquarters. Mr. Wermers has 31 years of facilities operations, engineering, and construction management experience in the Indian Health Service. He has worked in healthcare engineering at the hospitals in Bethel, AK and Chinle, AZ, and regional facilities management at the Navajo and California Area Offices before accepting his current assignment at Indian Health Service Headquarters in Rockville, MD. He is registered as a Professional Engineer in Maryland and has a Master's Degree in Engineering Management from the University of Colorado at Boulder.

Michael R. Young
Mr. Young is a Project Manager for the Division of Engineering Services (stationed in Seattle, WA) for the Office of Environmental Health and Engineering at the Indian Health Service Headquarters. Mr. Young has 29 years of experience working for the Indian Health Service. For the past 16 years he has worked as a healthcare engineer, serving in both the Architecture & Engineering Branch as a sustainability coordinator and in the Project Management Branch, managing the design and construction of healthcare facilities on Indian Reservations across the nation. He has previously served as an Environmental Engineer, designing and managing water, sewer and solid waste projects in Arizona, California and Washington. He is registered as a Professional Engineer in the State of Washington and has a Master's Degree in Civil Engineering from the University of Washington.

Jeffrey Williams
Jeffrey Williams is a Senior Environmental Engineer for the National Security Agency. He holds a BS in Nuclear Engineering and an MS in Environmental Engineering, both from the University of Maryland. He also has an MA in Legal Studies from the University of Baltimore, and has attended the Center for Advanced Engineering Studies at MIT. His responsibilities include multimedia environmental support to NSA operations. He has been the initiator and developer of the Sustainable Design initiative with the Office of Facilities.

5.1
Daniel Kreeger

Daniel Kreeger is co-founder and executive director of the Association of Climate Change Officers (ACCO) and has a unique familiarity of climate change and sustainability initiatives being undertaken across the public and private sectors. Dan has led ACCO's programming efforts since 2008, as well as the establishment of its certification and training programs. In 2017, Dan co-founded the nation's first state-run climate change institution, the Maryland Climate Leadership Academy. Dan is a recognized expert on institutionalizing climate change into decision-making in the public and private sectors. Over the years, Dan led ACCO's partnership with the White House Council on Environmental Quality to twice produce their flagship conference on sustainability in Federal agency operations, the GreenGov Symposium, and also served as a co-founding steering committee member for the consortium that jointly administered EPA's Climate Leadership Awards from 2012-2015. He has also served as a reviewer for the IPCC 5th Assessment in 2014 and numerous Federal agency grant committees. An accomplished business executive with more than 20 years of cross-functional experience in change management and enterprise business strategies across sectors, Dan focuses upon the human capital, economic and operational implications of environmental and public health issues. Dan serves on the Dean's Council of Advisors at the FIU College of Architecture and the Arts and frequently lectures at graduate and executive education programs nationwide.

5.2

David Herring

David Herring is Chief of the Communication, Education, and Engagement Division within NOAA's Climate Program Office, where he also serves as Program Manager of NOAA Climate.gov (www.climate.gov) and the U.S. Climate Resilience Toolkit (toolkit.climate.gov) websites. In 2015, David was awarded NOAA's highest award for Outstanding Science Communication. David received his Master's Degree in Science and Technical Communication in 1992 from East Carolina University.

6.2

Steve Luzzi

Steve Luzzi is a Project Manager for the U.S. Army Corps of Engineers, Engineering Research Development Center, Construction Engineering Research Laboratory. He has been developing, managing and operating environmental information management systems for the Federal community for the past 29 years. He is current manager of the Federal Facilities Environmental Stewardship and Compliance Assistance Center (FedCenter) and has previously managed the Defense Environmental Network & Information eXchange (DENIX) and EnviroText Retrieval System (ETRS). Steve has a B.S. in Agricultural Economics from the University of Illinois and an A.S. in Computer Science from Parkland College, Ill.

7.2

Janine Pollack

Janine Pollack works in the Medical and Environmental Management Division at NASA's Goddard Space Flight Center in Greenbelt, Maryland. Janine's primary responsibility is managing the Center's National Pollutant Discharge Elimination System (NPDES) industrial discharge permit, but is also interested in pursuing more sustainable landscaping at the Center, particularly focusing on native plants and their relationship with our native insects.

Darlene Squibb

Darlene Squibb works in the Medical and Environmental Management Division at NASA's Goddard Space Flight Center in Greenbelt, Maryland. Darlene is responsible for natural resources management on the Center and is curious to understand how both the natural and social worlds are impacted by the surrounding landscape.

8.2

Laura Winter

Ms. Winter is the chief of the Office of Forensic Sciences, Environmental Operations Unit. She has almost 20 years of experience with environmental management systems, ten of those years have been in the federal government.

Steven Davis

Steven Davis is an Environmental Protection Specialist with the Drug Enforcement Administration (DEA), and is responsible for managing the DEA's overall EMS program.

Breakout Session 3

6.3

Peter Heinricher

Mr. Peter M. Heinricher has been part of CERL's Compliance Working Group for 29 years. During that time, Mr. Heinricher has written compliance protocol manuals, trained internal assessors, developed web-based auditing solutions, and conducted compliance assessments and conformance audits at over 120 installations in North America, Europe and Asia. Mr. Heinricher is currently responsible for the ListBuilder(tm) and the production of the State Supplements to the TEAM Guide.

7.3

Gordon Taylor

Mr. Gordon Taylor was assigned to the Air Force Life Cycle Management Center, Acquisition and Environmental and Industrial Facilities in December 2014. Since March 2016 he serves as Chief of Compliance for USAF Industrial Facilities and the Environmental Compliance Branch which provides oversight of environmental programs supporting U.S. and DoD policy, and sustains operational, suitable, and effective facilities for the weapons systems industrial base.

8.3

Bani Bhattacharya

Ms. Bani Bhattacharya serves as the Environmental Management System Program Manager at NIH. Ms. Bhattacharya collaborates with Environmental Management Program Leads and Sustainability Goal Leads to implement and communicate environmental management initiatives. Initiatives that are part of various environmental management programs such as greenhouse gas emission reduction, solid waste management and recycling, chemical waste handling and disposal, etc. These are cross-jurisdictional programs involving teams of participants who continuously strive to innovate ways to protect the environment and health. Prior to joining NIH, Ms. Bhattacharya worked as a toxicologist (Contractor) at Environmental Protection Agency, Environmental and Occupational Health Specialist (Contractor) at Department of Defense. Bani holds a MS and MPH degrees.

Bill Steinmetz

Mr. Steinmetz serves as the Environmental Management System Coordinator at the National Institute of Environmental Health Sciences in Research Triangle Park, North Carolina. He splits his time between managing environmental permits for air emissions and water discharges with collaborative team efforts to reduce environmental impacts from NIEHS Campus activities. Mr. Steinmetz has nearly 30 years of experience in the environmental field with 18 of those years at the NIEHS. Employment prior to NIEHS included performing environmental inspections and conducting air monitoring studies with Kentucky and North Carolina state governments. Bill has a MS degree in environmental planning.

Paul Johnson

Mr. Johnson serves as the site environmental manager at the National Institute of Environmental Health Sciences (NIEHS) in Research Triangle Park, North Carolina, providing oversight and direction for campus environmental programs and activities. He has over 25 years of experience in the environmental field and holds a master's degree in environmental policy and management.

<u>Breakout Session 4</u>

1.4

Susannah Davidson

Susannah Davidson is a Community Planner at the US Army Corps of Engineers Construction Engineering Research Laboratory in Champaign, IL, with a research focus on waste streams and source reduction. Her experience working on an organic vegetable farm in Connecticut piqued her interest in waste streams. She has a Master's degree in Urban Planning from the University of Illinois at Urbana-Champaign and a Bachelor's degree in Japanese Language from University of California - Berkeley.

Jan Jackson

Jan Jackson is the Sustainability and Stewardship Program Manager at the U.S. Department of Energy Y-12 National Security Complex. She has over 27 years of experience in sustainability and environmental compliance. Jan has a B.S. Degree in Biology from Lincoln Memorial University.

Jeannette Widman

Jeannette Widman is a Senior Environmental Specialist with Strata-G. She has over 27 years of experience in environmental compliance and management. She has a B.S. Degree in Environmental Health Science and a M.S. Degree in Environmental Management.

Samuel McCord
Samuel has worked in the Pollution Prevention field for 13 years at Sandia National Laboratories, creating reuse programs, new recycle streams, and implementing information technology solutions to increase efficiency in the Lab's waste management infrastructure and customer interface. He has a bachelor's degree in Geography, and is a Lean/Six Sigma Green Belt.

2.4
Holly Elwood
Holly is a Senior Advisor for the EPA's Environmentally Preferable Purchasing Program, helping federal agencies factor the environment into purchasing decisions. She coordinates EPA and interagency technical input into product sustainability standard development efforts and helps shape and maintain EPA's Recommendations of Standards and Ecolabels for Federal Procurement. Holly received an Individual Leadership Award from the Sustainable Purchasing Leadership Council for her "...vision, leadership, and dedicated effort to the advancement of the sustainable purchasing movement" for the development of the EPA Recommendations. She also received an EPA Gold Award for her role in forming and implementing the White House's National Strategy for Electronics Stewardship, and was selected as a Fed 100, awarded to government and industry leaders who have "played pivotal roles in the federal government IT community--individuals who have gone above and beyond their daily responsibilities and have made a difference in the way technology has transformed their agency or accelerated their agency's mission". Holly holds a Master's Degree in Environmental Sciences and Public Policy from Johns Hopkins University, and a B.A. in Political Science from Macalester College.

Cate Berard
Cate Berard is the Team Lead for Sustainability in the Department of Energy (DOE) Office of Sustainable Environmental Stewardship. Cate's Team supports Departmental implementation of federal sustainability requirements, including: energy and water efficiency; sustainable acquisition; environmental management systems; and high performance and sustainable buildings and campuses. The Team focuses on providing technical assistance, training, and recognition to DOE sites.

Cate directly supports Departmental policies and programs related to electronics stewardship and data center efficiency and optimization. Cate participates in a variety of IT-related standard development activities through IEEE, NSF and UL. She also co-chairs the inter-agency Federal Electronics Stewardship Working Group. Cate holds a B.S. from James Madison University and an M.S. from Johns Hopkins University.

Jonathan Rifkin
Jonathan Rifkin is the Director for Strategic Partnerships for the Green Electronics Council. In his role he is focused on identifying and collaborating with organizations that share GEC's dedication to sustainable electronics and making them available to large-scale purchasers. Jonathan brings to GEC a unique perspective, which is informed by years as a procurement subject matter expert, and frequent and meaningful engagement with environmental experts, the manufacturing sector, and the standard setting world. Prior to joining GEC, Jonathan spent 10 years in the public sector working for the District of Columbia's Office of Contracting and Procurement. During this he developed and managed the District of Columbia's Sustainable Purchasing Program, which won two national awards and is recognized a leader in the realm of sustainable purchasing. Jonathan currently serves as an Honorary Member of the National Association of State Procurement Officials (NASPO), is a member of the Strategic Advisory Board for the Sustainable Purchasing Leadership Council and maintains a Certified Professional Public Buyer (CPPB) Certification from the UPPCC. Jonathan believes in, and works to create, a world in which all electronics are environmentally preferable and developed and used in a socially responsible manner.

3.4
Kassidy Boorman
Kassidy Boorman is the technical lead for the Pollution Prevention (P2) program at Los Alamos National Laboratory (LANL). This program provides funding to site researchers to pursue P2 projects using a set of criteria emphasizing Return on Investment, dissemination potential, and source reduction: preventing waste generation. The program also directs site-wide initiatives requires cutting across organizational silos in pursuit of optimal resource use. Ms. Boorman seeks solutions that involve and require permanent structural change and is especially motivated by the words "nearly impossible". She possesses an M.S. degree in Nutrition Science, benefits from a broad base of

experience gained in several different LANL programs as a student and postmaster's employee, and now supports others to truly do prevention first.

Michael Moss
Michael Moss earned a bachelor's degree in biology from Whitman College and a master's in sustainability management from Columbia University. He volunteered with the Peace Corps as an agroforestry extension agent in rural Paraguay. At Los Alamos National Laboratory he focuses on cost-analysis, project development and program evaluation for the Pollution Prevention program.

4.4
Jeremey Alcorn
Mr. Alcorn is a Certified Energy Manager and currently serves as a Senior Sustainability Program Manager for the Public Buildings Service, U.S. General Services Administration (GSA). He has over 15 years of experience in sustainability, facility energy and water management, high performance buildings, renewable energy, and greenhouse gas (GHG) mitigation. Prior to joining GSA, he served as a consultant with private and not-for-profit organizations and provided hands-on, federal sector support developing sustainability programs; energy and water management programs and analysis tools; high performance building guidance and plans; renewable energy analyses; and GHG reporting. He has authored publications on energy facility efficiency and renewable energy, alternative fuel sustainability, and climate implications for U.S. access to space.

Keith Bryan

Keith is an experienced program and project manager at LMI who works with organizations to improve their efficiencies and promote sustainable best practices. After nearly 15 years in the sustainable buildings industry, Keith thoroughly understands the drivers of green building from the public and private sector perspectives, and uses this knowledge to help clients grow their programs. A generalist in a technically focused discipline, he is skilled at translating highly technical concepts to extract purpose and accentuate organizational value, helping his clients to move past sustainability as a buzzword and towards meaningful implementation of its concepts. He holds a Master's of Business Administration (MBA) from Virginia Tech, and a Bachelor's of Biology from Purdue University. He is also a dual LEED AP and Certified Energy Manager.

5.4
Leslie Nicholls
Leslie Nicholls is the Strategic Director for the U.S. Department of Energy (DOE) Federal Energy Management Program (FEMP) in the Office of Energy Efficiency and Renewable Energy (EERE). She previously served as FEMP's Acting Director and Strategic Communications and Training Manager. She brings nearly three decades of clean energy and executive leadership experience to EERE. Most recently, she served as Vice President of the Building Energy Solutions Division at Energetics Incorporated, a subsidiary of VSE Corporation. In this capacity, she was responsible for the management of multiple cross-cutting programs. She also provided expertise to federal agencies and private sector energy companies in federal and commercial energy management, greenhouse gas reduction, energy efficiency, clean energy deployment, and strategic planning. Before holding that position, she worked for 17 years at the Pacific Northwest National Laboratory as a Senior Contracting Officer. During her tenure, she worked on many energy sector projects including lighting and building systems technology procurements, GovEnergy, and inventor innovation competitions. Leslie has bachelor and master degrees in business administration from Washington State University.

Rachel Shepherd
Rachel Shepherd currently leads the Distributed Energy and Energy Procurement Program at the U.S. Department of Energy (DOE) Federal Energy Management Program (FEMP), which helps federal agencies accomplish their missions through investment in lasting and reliable energy-generation projects and purchases. This program focuses on technical and procurement assistance for projects that include renewable energy, storage, and combine heat and

power technologies. Shepherd also leads FEMP's Critical Buildings program, focused on best practices for optimizing data centers, laboratories, and hospitals. Prior to FEMP, Shepherd was a project engineer conducting energy audits and retro-commissioning studies for existing commercial and industrial facilities. She worked with building owners to identify and prioritize deployment of energy efficiency and renewable energy projects.

Schuyler Schell
Schuyler Schell supervises Project Procurement and Distributed Generation Services at the Federal Energy Management Program (FEMP), within the Energy Efficiency and Renewable Energy Office of the Department of Energy, in Washington, D.C. FEMP assists Federal Agencies in their efforts to achieve high levels of energy and cost efficiency and resiliency in their facilities. FEMP supports agencies through a variety of means, including: performance contracting mechanisms; design and technical assistance; technical information, tools, and training; outreach; quality assurance; and interagency working groups, among other activities and resources. Most of FEMP's tools and training are web-based and available to, and used by, a wide range of public and private market participants. Mr. Schell leads the FEMP Program relating to DOE's Energy Savings Performance Contracts, Utility Energy Services Contracts, Distributed Energy Project and Procurement support, DOE Utility Contract Oversight, and other initiatives. Before coming to the DOE in 2001, Mr. Schell served in a variety of capacities at a leading housing finance Government Sponsored Enterprise in McLean VA. These roles included: Director of Sales and Integration, Director of Structured Transactions, and Director of Marketing Strategy and Planning. Earlier in his career, Mr. Schell was Vice President for Secondary Marketing and Product Development for a Dallas based Mortgage Company and was an economist and the Director of Government Agency Relations for a trade association in Washington. He has an undergraduate degree in Economics from the State University of New York at Albany, and a Master of Planning degree from the School of Architecture at University of Virginia.

Jay Wrobel
Jay Wrobel serves as the Supervisor of Facility Optimization: Facility Design, Operations and Policy for the Federal Energy Management Program (FEMP) in the Office of Energy Efficiency and Renewable Energy (EERE). Mr. Wrobel previously served as the Manager of Technical Assistance for the Advanced Manufacturing Office in EERE, overseeing major programs that help industry reduce energy use, increase competitiveness, and develop trained workforces. Previous to joining DOE, Mr. Wrobel was the Executive Director of the Midwest Energy Efficiency Alliance (MEEA). In addition to managing MEEA, Mr. Wrobel created the HVAC System Analysis for Verified Efficiency (SAVE) program. Mr. Wrobel has over 15 years' experience in the energy, efficiency, and sustainability fields, including time at the Gas Technology Institute and Cambridge Energy Research Associates (CERA). Mr. Wrobel has a Master's degree in Energy and Environmental Analysis from Boston University and an Economics degree from the University of Chicago.

6.4

Dominique Freyre
Dominique Freyre is an Attorney-Advisor in EPA's Federal Facilities Enforcement Office (FFEO) within the Office of Enforcement and Compliance Assurance (OECA). Dominique leads the federal facilities sub-group within EPA's NPDES SNC National Compliance Initiative, and also works on a myriad of other regulatory and cleanup topics as they relate to federal facilities. Dominique graduated from the University of Wisconsin-Stevens Point with a B.S. in Biology, and has an M.S. in Biology from the University of Nebraska-Omaha. She also holds a J.D. from Northwestern University School of Law.

7.4

Jinelle Sperry

Dr. Sperry received her PhD in Ecology, Evolution and Conservation Biology from University of Illinois in 2008, her Master's degree in Wildlife from Humboldt State University in 2004, and her Bachelor of Science in Wildlife Biology from University of Montana in 1999. She has been a Wildlife Biologist with ERDC-CERL since 2010 where she leads a team examining Threatened and Endangered Species (TES) on military lands. Her work focuses on improving management strategies for TES, assisting installation with consultation and policy initiatives, and use of novel and innovative tools for TES monitoring. She supports TES management and Endangered Species Act compliance on 10+ military installations across the US and Pacific Islands.

8.4

Una Song

Una Song manages the Energy Department's Environmental Management System Technical assistance program, providing assistance and guidance to DOE sites.

Jerrilyn Goldberg

Jerrilyn Goldberg is a Research Associate at Lawrence Berkeley National Laboratory. She leads outreach and training for FEMP's support of federal adoption of 50001 Ready using the DOE-developed 50001 Ready Navigator. She also conducts research on organizational adoption of continuous improvement management systems with attention to sector-specific value drivers.

Danae Rupp

Danae Rupp is a research analyst supporting the Office of Sustainable Environmental Stewardship at the Department of Energy, and works primarily in the areas of Environmental Management System (EMS) technical assistance and EMS/Energy Management System integration.

Paul Sheaffer
Paul Sheaffer is a Program Manager in the Building and Industrial Applications Department at Lawrence Berkeley National Laboratory with more than 20 years of experience in commercial and industrial energy efficiency and energy management.

Breakout Session 5
6.5
Rachel Simkins

Rachel Simkins has been with the EPA since 2014. She currently works in the Oil and Prevention Enforcement Section conducting inspections to verify compliance with the SPCC and FRP regulations. Rachel has also been a member of the U.S. Coast Guard since 2004, transitioning to reservist status in 2010. Rachel has a B.S. in Investigative Forensics from the University of Maryland, a B.S. in Chemistry from Stevenson University, and an M.S. in Forensic Chemistry from Stevenson University.

7.5
James D. Ray
Jim Ray is a native and 30-year veteran of the wildlife management and research community of the Texas Panhandle. He holds degrees from Texas Tech University and South Dakota State University. He spent nine years with the Texas Parks and Wildlife Department as the migratory bird and wetlands biologist for Northwest Texas and has been the wildlife biologist for the USDOE-NNSA Pantex Plant for the past 20 years. Jim has worked on private and public lands, and has served on committees dealing with Farm Bills, Partners in Flight, and the Central Flyway and North American Waterfowl Management Plan. His work at Pantex was recently awarded the 2019 Presidential Migratory Bird Federal Stewardship Award by the Council for the Conservation of Migratory Birds.

Breakout Session 6

1.6
Dianne Shoaf

Dianne manages the Corporate Sustainability Initiatives group, one of the three main policy groups within the Office of Sustainability at the USPS. Her responsibilities include integrating sustainability strategies into operations across the organization while reducing waste, cost and environmental impact. Dianne also has several years of experience leading the Energy program in the Southern Area of the USPS. Dianne holds a Bachelor of Science degree in Electrical Engineering from the University of Central Florida.

Ron Kecman

Ron Kecman has more than 35 years mailing and shipping industry experience specializing in the Federal Sector including seven years with the United States Postal Service. In his current role as a Strategic Account Manager with the Postal Service he is responsible for developing and maintaining agency relationships, studying agency strategic initiatives, and providing USPS solutions to help agencies meet their objectives. He has extensive expertise and knowledge in developing mailing and shipping strategies for public and private sector organizations.

Brett Apold

Brett is an accomplished and driven sales executive with extensive experience leading sales and account teams to deliver on aggressive goals in fast-paced, competitive industries. He has spent the last two years at ARCOA Group building a first class consultative sales team that focuses on helping clients develop and implement strong and sophisticated ITAD programs. For over 20 years Brett has been able to deliver transformational improvements through rebuilding, re-focusing, improving training and engagement to ignite results. He has a proven track record for securing new business and strengthening current relationships to instill brand loyalty, and, is a visionary leader with rock solid relationship building skills and a passion for contributing to a positive corporate environment to attract and retain top talent and clients.

2.6
Angela Urban
Angela Urban holds a Masters in Urban & Regional Planning and Minor in Global Studies. At the Construction Engineering Research Laboratory (CERL), the research component of the U.S. Army Corps of Engineers (USACE), Angela specializes in environmental support for military installations worldwide, such as pollution prevention, sanitation, and waste management. She also participates in Disaster Relief Operations and mentors engineering, environmental science, and urban planning students. Prior to working as an environmental researcher for USACE, Angela served six years as a Joint Forces Intelligence Analyst. For twenty years, Angela has facilitated classroom instruction for all ages and education levels, from grade-school through professional. Angela is also a found-object artist, creating sculptures from re-used materials, as well an avid baker.

Christopher Ackerman-Avila

Christopher Ackerman-Avila is a student contractor for the U.S. Army Corps of Engineers, CERL. He studies Urban & Regional Planning at the University of Illinois at Urbana-Champaign, where he serves as a Student Senator to advocate for sustainable campus policies. Born and raised in San Diego, Christopher has experienced the role military installations have on the surrounding community and is interested in improving military-community relationships. His work involves providing environmental support for military installations.

Heidi Howard

Heidi Howard is a Research Agronomist for Military Lands, with the Army's Engineer Research and Development Center at the Construction Engineering Research Laboratory (CERL) in Champaign, IL. Heidi is the program lead for development of methodologies and algorithms for quantification of cumulative interactions related to management of military lands and ranges. Her research has focused on development, validation and implementation of stormwater and erosion control management designs; military vehicle impact models; low impact designs; and use of biological systems for natural sustainment. She is responsible for research on sustainable lands and ranges for

military installations. Heidi holds a BS in Biology for Western Illinois University and a M.S. in Natural Resource and Environmental Sciences from University of Illinois.

3.6

Dr. Brendon Parsons

Dr. Brendon A. Parsons is a postdoctoral researcher in the Pollution Prevention (P2) team at Los Alamos National Laboratory, developing programs in chemical management, emerging contaminants, legacy chemical usage, and water conservation. Dr. Parsons specializes in analytical chemistry, with a focus in multidimensional gas chromatography and feature selection by novel methods, with emphasis on petroleum, environmental, and food analyses.

4.6

Bani Bhattacharya

Ms. Bani Bhattacharya serves as the Environmental Management System Program Manager at NIH. Ms. Bhattacharya collaborates with Environmental Management Program Leads and Sustainability Goal Leads to implement and communicate environmental management initiatives. Initiatives that are part of various environmental management programs such as greenhouse gas emission reduction, solid waste management and recycling, chemical waste handling and disposal, etc. These are cross-jurisdictional programs involving teams of participants who continuously strive to innovate ways to protect the environment and health. Prior to joining NIH, Ms. Bhattacharya worked as a toxicologist (Contractor) at Environmental Protection Agency, Environmental and Occupational Health Specialist (Contractor) at Department of Defense. Bani holds a MS and MPH degrees.

Jaroslav Sebek

Jaroslav Sebek is an Environmental Engineer at the National Institutes of health. As part of the Office of Research Facilities (ORF) and Office of Research Services (ORS) Green Team he works on sustainability projects to increase the environmental sustainability of the ORF, ORS and the NIH.

5.6

Crystall Merlino

Ms. Crystall Merlino is currently the Energy and Resilience Manager for the Department of Homeland Security. As the director of this program, she is responsible for implementing policy and guidance for the Department on resilience and energy related matters. Previously, she was a Senior Program Manager in the Office of Secretary of Defense, Installation Energy. Her portfolio spanned energy efficiency, renewable energy and distributed generation, and utilities privatization. Over the past 23 years she has led and supported large-scale government, energy, and environmental programs and projects providing leadership, mentorship, contract management, research, and technical support to government and private clients. These government entities include currently Department of Defense, U.S. Homeland Security, Architect of the Capitol, and the U.S. Environmental Protection Agency. Crystall is a LEEP Green Associate, a chapter member of the National Capital Region, U.S. Green Building Council, and sat on the board as president (2002) and secretary (2000), she was one of the original founding members and board member for the Building Commissioning Association, and is currently member of the Women’s Council on Energy and Environment (WCEE).

6.6

Russ Brauksieck

Russ Brauksieck is a New York State employee currently on assignment to work with EPA's Office of Underground Storage Tanks. Russ is a professional engineer with 34 years of experience working with NYS Department of Environmental Conservation with the regulations for underground and aboveground storage tanks.

7.6

Michael W. Burns
Michael W. Burns was born in Brooklyn, New York, and raised in Pittsburgh, PA for most of his life. He graduated from the United States Naval Academy, and spent eight years in the Navy as an engineering officer, visiting over ten different foreign countries. Upon leaving the Navy, he spent four years in the private sector as a plant engineer for two different companies, and returned to federal service as a civilian marine chemist. Over the last twenty plus years in the federal government, Mr. Burns has been a Supervisor of Environmental Engineers; a Chief of Facilities for the Southeast Region of the National Park Service; a Director of Regional Public Works; Deputy Director of Base Operations for the Army Reserve; and an Executive Director for the Southeast Region of the U.S. Navy. Mr. Burns is currently a Senior Advisor for the Regional Administrator of the Environmental Protection Agency, Region 4, where he manages the College/Underserved Community Partnership Program (CUPP), which he created in 2011.

8.6

Kevin Shupe

Kevin Shupe has been the ANG EMS Coordinator since 2005. Prior to that he worked at multiple AF Installations, as well as for the Army at Ft. Lewis, WA. Mr. Shupe also worked for the WA State Dept. of Ecology, providing EMS and P2 Assistance to industrial organizations and federal facilities in WA. Mr. Shupe attended Oxford Brookes University, UK graduating with a BSc in Env Science/Env Biology and MSc in Environmental Management.

Brooke Shaffer
Brooke Shaffer has been with the ANG since October 2016 as the backup EMS Coordinator and the Water Quality Program Manager. Prior to starting at the ANG, she worked for the Department of the Navy fulfilling both compliance programs and lead EMS coordinator at various installations throughout the DC Metro area. Ms. Shaffer attended Bridgewater College in Virginia graduating with a BS in Chemistry.

Heather Sours
Heather Sours is a Senior Consultant with Solution Foundry, providing EMS support to the ANG. Ms. Sours provides EMS training, EMS technical support, and oversees the development of electronic tools for tracking implementation and improvement of the ANG EMS. Ms. Sours has 22 years of professional experience focused on EMS development, implementation, and auditing, and regulatory compliance and training.

Breakout Session 7

3.7

Daryl Beardsley

Daryl Beardsley is an industrial-environmental engineer and policy analyst with over 30 years of experience. Her area of specialization involves advising governments, NGOs, and industrial/commercial facilities on technical and feasibility aspects of sustainability. For this presentation topic, she will be drawing from her over 10 years of volunteer involvement helping to manage and regulate impacts on her town's drinking water resources. Ms. Beardsley earned her M.S. at the Massachusetts Institute of Technology, Department of Civil and Environmental Engineering, Technology & Policy Program.

6.7

Robert Largent

Robert has provided compliance and operational oversight at gas stations since 2002. He became the AAFES Environmental Engineer in 2013. He has trained over 500 Federal & State UST Owners, Operators, and Inspectors on UST Installation, Inspections, removals, and site remediation. He has created several YouTube videos and a LinkedIn Group dedicated to environmental compliance of underground storage tanks and gas stations and has participated in EPA UST regulation updates.

8.7

Brent Allred

Mr. Allred is a Program Manager with Northrop Grumman, where he has been employed for 17 years. He has a B.S. in Public Health from Utah State University and has spent the past 23 years of his career focused on developing and implementing environmental compliance information management solutions for customers within the federal government and private sector.

Day 2

Breakout Session 1

1.1

Jordan Rivera

Mr. Rivera is a Transportation Specialist with the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). As a member of the Outreach and Engagement Division, Mr. Rivera promotes regulatory compliance throughout the transportation industry. His office develops trainings, publications, and oversees public awareness campaigns. He has been with PHMSA working on lithium battery issues in varying roles for more than five years, including time spent as a contractor supporting PHMSA's Hazardous Materials Information Center.

2.1

Holly Elwood
Holly is a Senior Advisor for the EPA's Environmentally Preferable Purchasing Program, helping federal agencies factor the environment into purchasing decisions. She coordinates EPA and interagency technical input into product sustainability standard development efforts and helps shape and maintain EPA's Recommendations of Standards and Ecolabels for Federal Procurement. Holly received an Individual Leadership Award from the Sustainable Purchasing Leadership Council for her "...vision, leadership, and dedicated effort to the advancement of the sustainable purchasing movement" for the development of the EPA Recommendations. She also received an EPA Gold Award for her role in forming and implementing the White House's National Strategy for Electronics Stewardship, and was selected as a Fed 100, awarded to government and industry leaders who have "played pivotal roles in the federal government IT community--individuals who have gone above and beyond their daily responsibilities and have made a difference in the way technology has transformed their agency or accelerated their agency's mission". Holly holds a Master's Degree in Environmental Sciences and Public Policy from Johns Hopkins University, and a B.A. in Political Science from Macalester College.

Shabnam Fardanesh

Shabnam (Shab) Fardanesh is the Sustainable Acquisition Coordinator at the U.S. Department of Energy's (DOE) Office of Sustainable Environmental Stewardship. She is a nationally recognized subject matter expert in environmental sustainability, sustainable acquisition, fleet management, and alternative fuel technologies. She is the DOE GreenBuy Program lead which provides the agency sites with direction and incentives for purchasing products with strong environmental attributes. The GreenBuy program was awarded the Purchaser Leadership Award for an Overall Program by the Sustainable Purchasing Leadership Council as part of its 2015 Awards for Leadership in Sustainable Purchasing.

Vernell Thompson

Vernell Thompson is a procurement analyst with the USDA's BioPreferred Program. He works on the Federal Procurement side of the program, ensuring that biobased products are being brought Government-wide. Vernell is a certified LEED Green Associate by the U.S. Green Building Council. He was a contracting officer for 22 years and has 36 years of federal service.

3.1
Clayton Johnson

Clayton Johnson is a Research Associate in the Building Technology & Urban Systems Division at Lawrence Berkeley National Laboratory. Clayton's focus area is sustainable federal operations, with a concentration on energy-efficient product procurement. Clayton holds a bachelor's degree in Environmental and Sustainability Studies from the University of Utah, and has several years of past experience working on energy efficiency and renewable energy issues in the non-profit sector. Through his past experience, Clayton has gained insights into policy issues and communications practices that provide his foundation for supporting program training and outreach for the sustainable federal operations efforts at Berkeley Labs.

4.1

David Asiello
Mr. David Asiello currently provides technical and policy support to the Assistant Secretary of Defense (Sustainment). David's areas of responsibility include overseeing DoD Environmental Technology Programs; leading development and implementation of the DoD Sustainability Plan; integrating sustainable procurement policy and maximizing the use of green products at DoD Installations; and integrating environment, safety, and occupational health considerations into weapon systems acquisition programs. David has been with the Office of the Secretary of Defense (OSD) since March 2000. Prior to coming to OSD, David held a variety of logistics, operations & maintenance, and environmental positions for the Chief of Naval Operations, and for the Commander, Naval Air Systems Command.

Cornell Sims
Cornell Sims is a Certified Professional Environmental Auditor (CPEA®) through the Board of Environmental, Health & Safety Auditor Certifications® (BEAC®). He has experience providing environmental compliance support services to Federal agencies and private sector clients, to include hazardous waste management, environmental management systems (EMS), air emissions permitting, Phase I Environmental Site Assessments (ESAs), spill prevention plans, wastewater sampling and water quality testing. With more than 18 years of experience, Mr. Sims has managed a wide variety of projects spanning the full range of the Clean Air Act, EPCRA, TSCA, RCRA, and the Clean Water Act. He is Cardno's Project Manager for the HQ AMC Enhanced EPAS project, which includes the Sustainable Materials Process Evaluation (SMPE).

5.1
Danielle Nkojo

As a member of DC's Urban Sustainability Team, Danielle is part of the core sub-team dedicated to implementing Sustainable DC 2.0, the updated plan to make DC the healthiest, greenest, most livable city in the nation by 2032. Danielle works collaboratively with other government agencies, residents, businesses and institutions to develop policies focused on source reduction and sustainable procurement. She led the launch of ReThread DC, the District's textile recovery and reuse initiative.

Adriana Hochberg

Adriana Hochberg serves as an Assistant Chief Administrative Officer for Montgomery County, Maryland. She coordinates strategic planning and implementation of the County Executive's Priority Outcomes for "A Greener County" and "Easier Commutes" and leads Montgomery County's efforts to combat climate change. Ms. Hochberg serves on the DC Water Board as an alternate member and on the Vision Zero Steering Committee. Ms. Hochberg previously spent eleven years with the Government of the District of Columbia, serving in the Office of the City Administrator and as Chief of Staff in the Department of Energy and Environment. Ms. Hochberg has also served as Presidential Management Fellow at the US Environmental Protection Agency and as Coordinator for International Relations at the Konan Town Hall in Japan.

Joan Kelsch

Joan Kelsch is Arlington County's (VA) Green Building Program Manager and co-leads Arlington's climate initiative -- the Arlington Initiative to Rethink Energy (AIRE). Joan oversees energy efficiency programs in new and existing buildings, including the Green Building Density Incentive program and Green Home Choice. Arlington's

guiding Community Energy Plan outlines specific goals and recommendations for achieving a carbon neutral community by 2050.

6.1
Karin Leff

Karin Leff is the Director of the Federal Facilities Enforcement Office (FFEO). FFEO is responsible for ensuring that federal facilities take all necessary actions to prevent, control and abate environmental pollution. FFEO facilitates compliance through inspections and enforcement under all environmental statutes and cleanup at federal facilities. Karin has served in various management capacities at EPA for nearly 30 years.

7.1
Charlotte Parrish

Charlotte Parrish has worked at USPS giving environmental guidance for over 25 years. Her work focuses on communicating technical environmental and safety issues into laypersons' terms for nationwide internal and external audiences, including USPS employees and managers, customers, government agencies, and USPS colleagues in departments such as Legal, Safety, Engineering, Real Estate and Repairs and Alterations. Prior to joining USPS, she worked in environmental waste management enforcement at the New Jersey Department of Environmental Protection. Her bachelor's degree from Rutgers University, New Brunswick, NJ, combined a pre-med course focus with environmental coursework.

8.1
Che Shu-Nyamboli
Che is an Environmental Professional in the Environmental Systems organization at Sandia National Laboratories (SNL). He supports lab wide efforts to conform with and maintain certification to the ISO 14001:2015 standard, Environmental Management System. Prior to joining SNL, he was the Environmental Health Manager at the University of New Mexico, where he led programs to monitor and comply with environmental and occupational health and safety regulations. He has also worked for Native American tribes in the areas of environmental and land management, water resources planning and water rights. He holds a bachelor's degree in Environmental Science, a master's in Natural Resources Management from New Mexico Highlands University, and a master's in Environmental Engineering and Science from Johns Hopkins University.

Breakout Session 2

6.2
Mary Beth Sheridan
Mary Beth Sheridan has worked at EPA's Office of Resource Conservation and Recycling since 1997, primarily on hazardous waste recycling and the generator regulations. She has a B.S. from St. Lawrence University and a Master's degree from the University of Denver.

Kathy Lett

Kathy Lett has worked at EPA since 1999, primarily on hazardous waste recycling and generator issues, as well as on energy conservation, batteries, and wastewater management. She has a BA from Hamilton College in Clinton, New York.

Brian Knieser

Brian Knieser started at EPA in 2016 in the hazardous waste recycling and generator program in the Office of Resource Conservation and Recovery. He has worked on the implementation of the Generator Improvements Rule and the Hazardous Waste Pharmaceuticals Rule. He has a B.S. from the College of William & Mary, and an M.S. from Johns Hopkins University.

7.2
Linda Woestendiek
Linda has 20+ years of experience in environmental planning, infrastructure development and construction, and regulatory compliance for the U.S. Department of Defense – Southern Command. Areas of focus include NEPA

compliance, and coordination of land use, airspace, military base and range management, and project implementation environmental compliance. She has coordinated the development of the 'BMGR LEIS for Renewal of Public Lands for Military Use.' This compilation resulted in an unprecedented Congressional decision for a 25 year withdrawal. She has also been involved in emergency response planning, NEPA coordination for two military base closures, and multiple other military activities. She came to SOUTHCOM from support activities with the Army Reserves where she was the sole locally-stationed environmental coordinator for reserve activities/facilities throughout Florida.

8.2
Anthony Nagel

Anthony Nagel has a BS in Chemistry from State University of New York at Buffalo. He has worked at four commercial environmental testing laboratories and at two US Department of Energy (DOE) remediation sites. He has developed and help to implement several ISO 14001-based environmental management systems. Anthony is currently works for the CH2M Hill Plateau Remediation Company (CHPRC) at Hanford, a DOE site in Washington state, where he is an environmental quality assurance engineer. He was responsible for writing his company's ISO 14001-2015 based environmental management system manual.

Sara G. Austin
Sara Austin graduated with a B.A in English from University of Maryland College Park and an M.A. in English from University of Louisiana at Lafayette. She started working for the CH2MHILL Plateau Remediation Company (CHPRC) as a technical editor at the Department of Energy's (DOE) Hanford Site in 2008. In 2013, Sara became CHPRC's Environmental Management System (EMS) Coordinator. That year, CHPRC won "Green Event of the Year" for their Zero Waste company picnic, which generated only two bags of trash for a 2000-employee outdoor event. During her tenure as EMS Coordinator, CHPRC has successfully maintained ISO 14001 certification and has been recertified twice. In addition to her EMS role, Sara is also her company's sustainability lead.

Michelle Oates
Michelle Oates is the Environmental Management System (EMS) Coordinator and Sustainability Lead for Mission Support Alliance, LLC at the Hanford Site. Michelle's drive for collaboration and communication within her team and across the Hanford Site have helped her facilitate the site-wide working groups for EMS and sustainability efforts. She enjoys managing data and loves public speaking. Michelle earned a Bachelor of Science in Biology and a minor in Chemistry at the University of Washington. She is pursuing a Master of Science in Organizational Leadership from Columbia Southern University.

<u>Breakout Session 3</u>

1.3
Robert Holcombe

Mr. Holcombe accepted his current position at the General Services Administration (GSA) in 2002. These responsibilities include the government-wide policy and guidance on personal property assets. He is responsible for the promulgation of Federal regulations, as well as the publication of Bulletins and other guidance to support our executive agency customers. He leads the facilitation of two government-wide (interagency) groups – the Property Management Executive Council (PMEC) and the Interagency Committee on Property Management (ICPM); both of which address issues and concerns of the federal community. Bob is also an active member with the National Property Management Association (NPMA). He is also a past-chair of the ASTM E53 Committee, and currently the E53 sub chair developing international Fleet and sustainability standards. Mr. Holcombe graduated with a Bachelor's Degree in Economics/Business Administration from Western Maryland College in Westminster, MD (now McDaniel College).

2.3
Elizabeth J Keysar
Elizabeth Keysar, PhD, is an Energy and Sustainability Policy Advisor with Concurrent Technologies Corporation (CTC). For the last twenty years she has completed applied research on the implementation of sustainability for the Department of Defense, the Army's Net Zero Installation Initiative, and Army Medical Command. Recent policy efforts focus on energy and water resilience and security. Her experience covers all scales from the organizational,

facility, installation, and regional. She has focused on linking sustainability concepts with installation management, medical treatment facility operations, and implications of sustainability for contingency bases. Dr. Keysar holds a BS in Biology from the State University of New York at Buffalo, MS in Public Policy from Georgia Institute of Technology, and a PhD in Environmental Planning, also from Georgia Tech.

COL John M. Evans

COL John M. Evans was born in Topeka, Kansas and enlisted in the United States Army in 1989 as an infantryman. Upon graduation from Kansas State University, he was commissioned as a Medical Service Corps officer in 1996. He has served in a variety of worldwide assignments which include operational deployments to Operation Desert Shield/Desert Storm, Operation Joint Guard and Operation Iraqi Freedom. He is currently assigned as the Assistant Deputy Chief of Staff for Facilities, MEDCOM G9. Civilian education includes a Baccalaureate of Science, Business Management, from Kansas State University, a Master of Business Administration and a Master of Science in Construction Management from Colorado State University. He is a graduate of Command and General Staff College and is currently enrolled in the U.S. Army War College.

3.3

Bill Blair

Bill Blair, PE, is Chief, Facilities Management Branch for the NIH Research Triangle Park, NC Campus, home of the National Institute of Environmental Health Sciences (NIEHS). Bill is a degreed materials engineer from NC State (1987) and a practicing mechanical engineer.

Victor Stancil

J. Victor Stancil, PE, attended NC State University and graduated with a BS Electrical Engineering (2003) and Masters Civil Engineering (2010). Victor previously worked for the US Army Corps of Engineers at Fort Bragg, NC and currently serves as Project Manager and Senior Electrical Engineer with NIH-ORF, Facilities Management Branch, Research Triangle Park, NC.

4.3

Ron Vance

Ron Vance is the Chief of the Resource Conservation Branch in the Office of Land and Emergency Management at the U.S. Environmental Protection Agency in Washington, DC. Mr. Vance oversees efforts related to materials measurement, sustainable packaging, green sports, and greening the federal government. He has more than 18 years of experience in developing, implementing, and evaluating measurement of materials management related efforts. Before joining EPA, Mr. Vance worked in consulting, non-profit, state government, and local government. Mr. Vance holds a M.S. in Environmental Science and Management from Duquesne University and a B.S. in Biology from Wake Forest University.

Kent Foerster

Kent Foerster has been with the Environmental Protection Agency (EPA) in Washington, DC for twelve years as an environmental protection specialist working in the areas of recycling, measurement and sustainable materials management (SMM). He presently is staff lead of the State Measurement Workgroup, Federal Green Challenge and WasteWise. Kent has degrees in Political Science, Geography and Law. He has worked for the private sector, nonprofit groups, state and federal government. Kent worked twenty years for the State of Kansas in the areas of Superfund and RCRA where he helped build numerous regulatory and non-regulatory programs. He has worked for more than four decades on solid and household hazardous waste management, recycling, waste reduction, as well as energy, conservation, product stewardship and sustainability issues.

Dianne Shoaf

Dianne manages the Corporate Sustainability Initiatives group, one of the three main policy groups within the Office of Sustainability at the USPS. Her responsibilities include integrating sustainability strategies into operations across the organization while reducing waste, cost and environmental impact. Dianne also has several years of experience leading the Energy program in the Southern Area of the USPS. Dianne holds a Bachelor of Science degree in Electrical Engineering from the University of Central Florida.

5.3

Ramé Hemstreet

Ramé Hemstreet joined National Facilities Services, Kaiser Permanente, as the vice president of operations in September of 2011. Ramé is a key advisor to the senior vice president and is responsible for integration and coordination among all NFS organizational components. He focuses on system interoperability to achieve lifecycle facilities management, reduce total cost of ownership, and achieve the optimal alignment of capabilities and resources to meet our clients' needs. As the Chief Sustainable Resources Officer, he collaborates with stakeholders throughout Kaiser to reduce energy intensity, utility costs and carbon footprint. Ramé joined Kaiser Permanente from the U.S. Navy, where, as commanding officer of Naval Facilities Engineering Command Washington D.C., he led a team of 70 officers and 1,500 civilians delivering $1.5B/year of facilities management and construction services to Navy and Marine Corps clients throughout the national capital region. Ramé has broad facilities management experience, leading efforts to effectively plan, build, and operate facilities and infrastructure around the world. He has extensive experience planning, negotiating, and implementing complicated facilities projects in various circumstances and cultures, having managed programs in Japan, Europe, California, and the Midwest. Ramé holds a master's of science degree in construction management from University of California, Berkeley; a master's of science degree in National Security Strategy from the National War College; and a bachelor's of science degree in civil engineering from Tulane University. He also completed the Executive Management Programs at the University of Virginia Darden Business School and the Harvard Business School. Ramé is a professional engineer in the Commonwealth of Virginia, a Board member of the Unforgotten Fund, and a member of the Project Management Institute and the Association of Energy Engineers.

Seth Goldman

Seth Goldman is Co-Founder & TeaEO Emeritus of Honest Tea and Executive Chair of Beyond Meat. Honest Tea is the nation's top selling organic bottled tea, specializing in beverages that are just a tad sweet, organic and Fair Trade Certified™. In March 2011, Honest Tea was acquired by The Coca-Cola Company, becoming the first organic and Fair Trade brand in the world's largest beverage distribution system. Honest Tea and Honest Kids are sold in more than 150,000 stores in the USA and Europe, including McDonald's, SUBWAY and Chick-fil-A. Beyond Meat is also rapidly expanding distribution, as the company seeks to expand the availability and accessibility of plant-based protein. Seth graduated from Harvard College (1987) and the Yale School of Management (1995), and is a Henry Crown Fellow of the Aspen Institute. He also serves on the board of Ripple Foods, the Yale School of Management and Bethesda Green.

Jeff King

Jeff King is the Sr. Director for Global Sustainability and Social Impact for the Hershey Company. In this position he is responsible for Hershey's environmental sustainability, farmer livelihoods programming, philanthropic giving and community programs, as well as leading Hershey's commitment to giving children the best chance to succeed through The Heartwarming Project which focuses on developing youths' ability to connect and form social connections, and childhood nutrition programs that expand economic development in underserved communities. Additionally, he led building Hershey's Energize Learning program in Ghana, opening a factory that produces the nutritional supplement snack 'ViVi', that supports the health and nutrition of Ghanaian children through a partnership with the Ghana School Feeding Program. Prior to this position King has held various commercial roles, most recently responsible for the strategic direction and regional execution for the Hershey Company's two biggest franchises, as the Sr. Director Global Hershey and Reese's. He has also been the Director of Disruptive Innovation expanding the company innovation portfolio into new businesses and business models. He has also been Sr. Brand Manager for the U.S. Reese's Franchise, where he was responsible for managing all brand activities for the $1.2 billion Reese's franchise. King joined the Hershey Company in 2008 from Procter and Gamble, where he held multiple marketing roles of increasing responsibility across brand management, innovation, and shopper marketing. While at P&G, he was noted for restoring growth to P&G's original brand, Ivory soap, reversing decades of decline. He has a BBA for the University of Toledo, and a MBA from Indiana University.

6.3
Kristin Fitzgerald

Kristin has been with the U.S. EPA's Office of Resource Conservation and Recovery for 18 years, working primarily on hazardous waste generator issues. She holds a B.A. in Government from St. Lawrence University in New York and an M.S. in Environmental Science and Policy from George Mason University in Virginia.

Brian Knieser

Brian Knieser started at EPA in 2016 in the hazardous waste recycling and generator program in the Office of Resource Conservation and Recovery. He has worked on the implementation of the Generator Improvements Rule and the Hazardous Waste Pharmaceuticals Rule. He has a B.S. from the College of William & Mary, and an M.S. from Johns Hopkins University.

Laura Stanley

Laura has been an economist with the U.S. EPA's Office of Resource Conservation and Recovery for three years, working primarily on hazardous waste generator issues. She holds a B.S. in economics from James Madison University and an M.A. in economics from George Mason University.

Kathy Lett

Kathy Lett has worked at EPA since 1999, primarily on hazardous waste recycling and generator issues, as well as on energy conservation, batteries, and wastewater management. She has a BA from Hamilton College in Clinton, New York.

Mary Beth Sheridan
Mary Beth Sheridan has worked at EPA's Office of Resource Conservation and Recycling since 1997, primarily on hazardous waste recycling and the generator regulations. She has a B.S. from St. Lawrence University and a Master's degree from the University of Denver.

7.3
Dr. Don Guan

Dr. Don Guan is the Utilities Engineering Branch Chief, Division of Technical Resources, National Institutes of Health. Dr. Guan is a Professional Engineer and has more than 20 year experiences on academic research, engineering design, construction management, energy services, system integration, commissioning and central plant optimization.

Dr. Ye Tao

Dr. Ye Tao is a Mechanical Engineer under Utilities System Design and Technical Services Branch, Division of Technical Resources, National Institutes of Health. He has five years of experience in academic research on advanced HVAC systems, and chemical engineering unit operation processes.

Andrew Gomes
Dr. Andrew Gomes is Physical Scientist at Utilities Engineering Branch, Division of Technical Resources, National Institutes of Health. He has more than 26 years of academic research experience in air pollution, wastewater treatment, and materials science. He has expertise in electrocoagulation wastewater treatment technology, and development of intercalation materials, such as layered double hydroxides. He is author of 28 peer-reviewed publications, 51 conference proceedings, and 5 book chapters.

8.3
David Kumar
David Kumar is an Environmental Engineer with the United States Air Force, working Environmental Compliance programs and policy lead for the Air Force Environmental Management System (EMS).
He has been with the Air Force working environmental programs for 25-years at several locations including Air Force Materiel Command at Wright-Patterson AFB, to HQ Pacific Air Forces, Hickam AFB, HI, and currently at HQ USAF in the Pentagon.

Breakout Session 4

3.4
Greg Leifer
Greg Leifer is the energy manager at the National Institutes of Health in Bethesda, MD. Greg has over 30 years' experience, with over 25 years in the energy management field. He is a degreed Mechanical Engineer from N.C. State University, a Registered Professional Engineer in Maryland, and a CEM.

7.4
Dr. Don Guan

Dr. Don Guan is the Utilities Engineering Branch Chief, Division of Technical Resources, National Institutes of Health. Dr. Guan is a Professional Engineer and has more than 20 year experiences on academic research, engineering design, construction management, energy services, system integration, commissioning and central plant optimization.

Dr. Ye Tao

Dr. Ye Tao is a Mechanical Engineer under Utilities System Design and Technical Services Branch, Division of Technical Resources, National Institutes of Health. He has five years of experience in academic research on advanced HVAC systems, and chemical engineering unit operation processes.

Andrew Gomes
Dr. Andrew Gomes is Physical Scientist at Utilities Engineering Branch, Division of Technical Resources, National Institutes of Health. He has more than 26 years of academic research experience in air pollution, wastewater treatment, and materials science. He has expertise in electrocoagulation wastewater treatment technology, and development of intercalation materials, such as layered double hydroxides. He is author of 28 peer-reviewed publications, 51 conference proceedings, and 5 book chapters.

Breakout Session 5

1.5
Ron Vance

Ron Vance is the Chief of the Resource Conservation Branch in the Office of Land and Emergency Management at the U.S. Environmental Protection Agency in Washington, DC. Mr. Vance oversees efforts related to materials measurement, sustainable packaging, green sports, and greening the federal government. He has more than 18 years of experience in developing, implementing, and evaluating measurement of materials management related efforts. Before joining EPA, Mr. Vance worked in consulting, non-profit, state government, and local government. Mr. Vance holds a M.S. in Environmental Science and Management from Duquesne University and a B.S. in Biology from Wake Forest University.

2.5
Stephanie Gresalfi
Stephanie Gresalfi is the manager of GSA's Alternative Fuel Vehicle Program within the Office of Fleet Management. (GSA Fleet) In this role she advises agencies on fleet sustainability, GSA's vehicle offerings and federal policy and regulation. She also provides fleet-right sizing recommendations and supports agencies in planning for electric vehicles and associated infrastructure. During her time at GSA Fleet she has also concentrated on business development with a focus on improving the customer experience. In late 2016, she undertook a temporary assignment at the White House Council on Environmental Quality within the Office of Federal Sustainability where she further the President's agenda through a campaign to deploy electric vehicles nationwide and improve acquisition management across government. Stephanie is a recent graduate from the Partnership for Public Service's Excellence in Government Leadership Program where her team enhanced FEMA-related resources for disaster mitigation. Stephanie holds a Master's Degree in Business Administration from The University of Maryland and received her Bachelor's Degree in History with a minor in International Affairs from The George Washington University.

Tom Budinger
Tom Budinger, P.E. is a Management and Program Analyst currently managing both the Environmental Compliance and National Environmental Policy Act (NEPA) Programs for the Federal Bureau of Investigation. He is also leading the Bureau's Electric Vehicle Charging Station Initiative aimed at installing charging stations for fleet and personal owned vehicles at FBI facilities across the country. Tom holds a Bachelor of Science degree in Civil Engineering from The Ohio State University, a Master of Public Administration degree from The George Washington University, and is a registered Professional Engineer in the State of California.

3.5
Kate McMordie Stoughton

Kate McMordie Stoughton is a research engineer with Pacific Northwest National Laboratory, specializing in Federal water management leading the water efficiency team. Kate's water expertise is focused on strategic planning, Federal water policy guidance, and development and instruction of water management training. Kate develops comprehensive facility level water evaluations, identifying implementation strategies for water efficiency and resilience. Kate provides water management expertise to Federal programs such as the Army Reserve, Department of Energy, and the General Services Administration. Kate has a B.S. in Civil Engineering from the University of Colorado and is an AEE Certified Water Efficiency Professional.

4.5
Lana Suarez
Lana is the Associate Branch Chief in the Materials Management Branch and leads the Sustainable Management of Food efforts, under the Sustainable Materials Management Program at the Environmental Protection Agency (EPA). Lana joined the agency in 2004 and previous to her present position, she supported federal agencies meet sustainability goals, coordinated federal partnerships for urban waters, and reviewed pesticide labels. She served as Peace Corps volunteer in Nicaragua from 2000 – 2003. She attended the University of Michigan, School of Natural Resources & Environment and has a BS is Environmental Policy and Behavior.

Lee Cliburn

Lee Cliburn has been with USDA's Agricultural Marketing Service since 1980, working in the following areas; commodity grading, organic standards, grants compliance and the USDA Farmers Market. She has been manager of the USDA Farmers Market since 2018. Lee earned a Bachelor of Science in Agriculture with minors in Biology, English and Education from Sam Houston State University in Huntsville, TX.

5.5
Nina Morris
Nina manages the outreach, engagement and communications team for the University of Virginia's Office for Sustainability and works collaboratively to foster a culture of sustainability at UVA and beyond. Nina and her team of engagement and communication specialists and student employees develop and implement sustainability engagement programs, outreach tools, embed sustainable practices across UVA, execute sustainability events and campaigns, and manage sustainability communications for the University. Nina started at UVA in April 2010 and holds a Bachelor of Arts in Spanish & religious studies from Virginia Commonwealth University and a Master of Science in community and regional planning from Temple University.

Mark Stewart
Mark Stewart, Sustainability Manager, helped launch the Office of Sustainability in 2007 and developed various sustainability programs in his time at the University of Maryland. He currently leads efforts to reduce the university's carbon footprint, administers the University Sustainability Fund, and runs programs that aim to prepare students with the skills they need to be change-agents for sustainability. He was nominated for the White House Champions of Change Award by the Obama Administration and honored to have his name engraved on the ODK Fountain on McKeldin Mall, which recognizes decades of leaders at UMD. Mark earned a Sustainability Certificate from Harvard University, Master's degree in Higher Education Policy & Leadership from UMD, and Bachelor's degrees in Environmental Science and Organizational Psychology from UMBC. Prior to working at UMD, he taught

high school earth and environmental sciences, worked as a GIS specialist, and worked in organizational development.

Jason Mathias

Jason Mathias is the Strategic Initiatives Coordinator, working to lower Johns Hopkins' carbon footprint through various initiatives like Smart Labs and renewable energy projects. He is also responsible for managing data and metrics. Jason joined the Office from Baltimore City government, with five years logged in the Office of Sustainable Energy managing energy and alternative transportation projects. He is a Certified Energy Manager and has a B.S. in Environmental Science and Studies from Towson University.

6.5
William V. Paul

As Chief of the Combustion and Metallurgical Division, Air Quality Permits Program of the Maryland Department of the Environment, Mr. Paul has acquired more than 40 years of experience in air pollution control and the permitting of major stationary sources. This includes more than 30 years with MDE and 10 years in the private sector designing and marketing air pollution control equipment and environmental consulting. As a Division Chief, he has primary responsibility for overseeing air quality application reviews of major stationary sources subject to Prevention of Significant Deterioration (PSD) and non-attainment New Source Review (NSR). In the past several years, Mr. Paul has been extensively involved in permitting seventeen power plant projects, two municipal waste combustion projects and one Liquid Natural Gas (LNG) facility. These projects have all involved a detailed assessment of ambient air quality impacts, the application of best available air pollution control measures, and ensuring the inclusion of all applicable federal and state air quality control requirements. Mr. Paul has a B.S. in Chemical Engineering from Lehigh University and Masters in Business Administration from Loyola University.

Mario G. Cora
Mario Cora currently works as a Senior Regulatory Compliance engineer for the Air Quality Permits Program, Maryland Department of the Environment. In this capacity, he reviews permits to construct and permits to operate applications to ensure that industrial facilities are operating in accordance with all applicable laws and air pollution control regulations. For over two decades, he has worked in several environmental areas, including but not limited to municipal wastewater treatment, water quality, industrial hygiene, and environmental management. Mr. Cora has also published papers, and conducted technical presentations in several areas of these areas. He is a licensed professional engineer. He received a BS in Chemical Engineering from the University of Puerto Rico, MS Engineering from the University of Akron, and a Doctor of Engineering degree from Cleveland State University in 2002.

Alexander Paulos

Alexander Paulos works as a Regulatory and Compliance Engineer for the Air Quality Permits program, Maryland Department of the Environment. His primary focus is on the permitting of on-site electric generation projects, in particular combined heat and power. He received a BS in Nuclear Engineering from the Pennsylvania State University in 2016.

7.5
Dr. Don Guan

Dr. Don Guan is the Utilities Engineering Branch Chief, Division of Technical Resources, National Institutes of Health. Dr. Guan is a Professional Engineer and has more than 20 year experiences on academic research, engineering design, construction management, energy services, system integration, commissioning and central plant optimization.

Dr. Ye Tao

Dr. Ye Tao is a Mechanical Engineer under Utilities System Design and Technical Services Branch, Division of Technical Resources, National Institutes of Health. He has five years of experience in academic research on advanced HVAC systems, and chemical engineering unit operation processes.

Andrew Gomes
Dr. Andrew Gomes is Physical Scientist at Utilities Engineering Branch, Division of Technical Resources, National Institutes of Health. He has more than 26 years of academic research experience in air pollution, wastewater treatment, and materials science. He has expertise in electrocoagulation wastewater treatment technology, and development of intercalation materials, such as layered double hydroxides.
He is author of 28 peer-reviewed publications, 51 conference proceedings, and 5 book chapters.

8.5
Gordon Taylor
Mr. Gordon Taylor was assigned to the Air Force Life Cycle Management Center, Acquisition and Environmental and Industrial Facilities in December 2014. Since March 2016 he serves as Chief of Compliance for USAF Industrial Facilities and the Environmental Compliance Branch which provides oversight of environmental programs supporting U.S. and DoD policy, and sustains operational, suitable, and effective facilities for the weapons systems industrial base.

Breakout Session 6

8.6
Gordon Taylor
Mr. Gordon Taylor was assigned to the Air Force Life Cycle Management Center, Acquisition and Environmental and Industrial Facilities in December 2014. Since March 2016 he serves as Chief of Compliance for USAF Industrial Facilities and the Environmental Compliance Branch which provides oversight of environmental programs supporting U.S. and DoD policy, and sustains operational, suitable, and effective facilities for the weapons systems industrial base.

Breakout Session 7

1.7
Ron Vance
Ron Vance is the Chief of the Resource Conservation Branch in the Office of Land and Emergency Management at the U.S. Environmental Protection Agency in Washington, DC. Mr. Vance oversees efforts related to materials measurement, sustainable packaging, green sports, and greening the federal government. He has more than 18 years of experience in developing, implementing, and evaluating measurement of materials management related efforts. Before joining EPA, Mr. Vance worked in consulting, non-profit, state government, and local government. Mr. Vance holds a M.S. in Environmental Science and Management from Duquesne University and a B.S. in Biology from Wake Forest University.

3.7

Martin F. Donahue

Martin Donohue, PE, is the Branch Head and responsible Engineer for Facilities Systems at PPPL. He has a BS ChE and MS Management both from New York University/Brooklyn Polytechnic Institute. He has been supporting the research work in facilities at PPPL for 6 years and before that has extensive engineering and management experience at chemical manufacturing plants operated by Witco and Lyondell-Basell. He is a licensed PE in NY and NJ.

Mark Hughes

Mark Hughes is the Environmental Compliance Manager at PPPL, ensuring the Laboratory is compliant with all local, State, and Federal environmental regulations. He has worked at PPPL for over 7 years on environmental and

sustainable initiatives, including pollution prevention, waste minimization, green purchasing, and other projects - all to help PPPL make a positive impact on the global environment.

4.7

Chandra Shah

Ms. Shah is a Senior Project Leader with the National Renewable Energy Laboratory. She has supported the FEMP program since 1998 and has over 15 years of experience helping federal partners reduce costs using distributed energy (through ESPC Energy Sales Agreements, PPAs and utility partnerships) and off-site renewable purchases. She is a Certified Energy Manager and holds an MBA from the University of Washington and a Bachelor of Science in Mechanical Engineering from the University of Michigan.

John Bollinger

John Bollinger is a 40-year federal government employee. He spent his first 24 years in the US Navy in the facilities management and Seabees areas of work at several duty stations around the world, and retired in 2002. For the past 17 years, he has worked at the National Institute of Standards and Technology (NIST) in Gaithersburg, MD. He was the day to day facilities manager of the campus for the first ten years. Now he is the Capital Assessment Management group leader, responsible for facilities condition assessments, energy conservation, sustainability, and campus long range and master planning.

Elisabeth Pinsker

A nearly 30-year GSA program analyst for the Public Buildings Service, Office of Facilities Management, Ms. Pinsker has worked in the sustainability field since 2011, focusing on reducing energy and water consumption and improving waste diversion in the national capital region's federally-owned and operated buildings. As a lead analyst for the regional energy and sustainability team, she is currently involved in project planning, regulation compliance, stormwater and erosion management, improving and tracking energy and water use as well as recycling and composting rates, and documenting compliance with the Federal Guiding Principles.

6.7

John Herrmann
Mr. Herrmann is a licensed PE (TX) with over 30 years of experience, working as a civil servant, consultant, and contractor primarily supporting NASA's environmental compliance programs. He is a graduate of Texas Tech (BS ChE) and Georgia Tech (MS ChE). His current assignment is Air Program Compliance (since 2016). Because Houston is considered a non-attainment area for ozone, NASA-JSC is subject to a complex regulatory environment associated with permitting, recordkeeping, and reporting as a major source of air emissions.

8.7

Una Song

Una Song manages the Energy Department's Environmental Management System Technical assistance program, providing assistance and guidance to DOE sites.

Morgan Gerard

Morgan Gerard is an environmental professional in the Environmental Protection and Compliance Division at Los Alamos National Laboratory. He graduated from New Mexico State University in 1996 with a B.S. in Chemical Engineering and received a Master's in Business Administration from the University of New Mexico in 2002. He worked for ten years as a process engineer in the semiconductor, automobile and telecommunications industries and later at Sandia National Laboratory. At Sandia, he worked in the pollution prevention department and was instrumental in certifying the Lab to the ISO 14001:2004 Environmental Management Systems standard. He has also worked for an independent, ISO certifying registrar and led audits for ISO 14001, OHSAS 18001, ISO 9001, Responsible Care Management Systems and RC 14001 in many different industries across the United States. Mr. Gerard currently leads efforts to maintain and improve the Los Alamos National Laboratory's environmental management system.

Joseph Pillittere

Joseph T. Pillittere is the Vice President of Communication and External Affairs for CH2M HILL BWXT West Valley, LLC (CHBWV) a subsidiary of Jacobs Engineering. Prior to his position with CHBWV, Mr. Pillittere was the Commissioner of Public Works for Cattaraugus County where he oversaw six divisions, 228 employees, and $36 million budget. Previously, he held upper-level management positions with Westinghouse, Northeast Utilities and New York Power Authority. He has taught Business and Communication classes at Jamestown Community College, Jamestown Business College, SUNY Fredonia and Niagara University. Mr. Pillittere is a co-author of a college course textbook on Communication and is a guest lecturer on leadership and communication. He is the President of the Springville Chamber of Commerce, and a Board member of the West Valley Chamber of Commerce.

Michelle Oates
Michelle Oates is the Environmental Management System (EMS) Coordinator and Sustainability Lead for Mission Support Alliance, LLC at the Hanford Site. Michelle's drive for collaboration and communication within her team and across the Hanford Site have helped her facilitate the site-wide working groups for EMS and sustainability efforts. She enjoys managing data and loves public speaking. Michelle earned a Bachelor of Science in Biology and a minor in Chemistry at the University of Washington. She is pursuing a Master of Science in Organizational Leadership from Columbia Southern University.

Breakout Session 8

6.8
Ouattara Fatogoma
Ouattara Fatogoma is an environmental Engineer specializing in air quality management with over 20 years of experience air quality consulting. Currently, he is the air quality program lead of the NASA's Goddard Space Flight Center environmental compliance contract. He has a PhD in environmental engineering from Purdue University.

Kathleen Moxley
Kathleen Moxley is an environmental engineer with over 20 years of experience in the federal government. Currently she is the Air Quality Program Manager at NASA's Goddard Space Flight Center (GSFC). She has a BS in environmental engineering from The Pennsylvania State University and a MSE from The Johns Hopkins University and is member of Chi Epsilon.

Breakout Session 9

6.9
Wilber Martinez
Wilbur Martinez serves as a multimedia inspector in the ECAD Enforcement Support Section – Ft. Meade Office conducting, primarily, hazardous waste and underground storage tank compliance inspections. Wilbur has been with ESS since February, 2008, but had previously worked as a superfund enforcement officer from 1987 through 1989. He has also worked as an environmental engineer for the US Army and the USDA Forest Service, and has worked as an environmental engineering consultant writing permit applications for hazardous waste treatment, storage, and disposal facilities, and conducting environmental sampling investigations. Wilbur has a degree in Chemical Engineering from the University of Puerto Rico, Mayagüez.

Garth Connor
Garth is an Environmental Scientist & Multi-Media Inspector in the Enforcement Support Section within the Office of Enforcement and Compliance Assurance, EPA Region III. He currently performs multi-media inspections in a variety of industrial sectors out of EPA’s Enforcement Division in Philadelphia, Pennsylvania. Mr. Connor is often involved in case development with facilities that have been inspected by his office and participates regularly in negotiations and enforcement settlements. He frequently provides compliance assistance to the regulated community. He has a Bachelor of Science degree in Biology from the University of Scranton in Scranton, Pennsylvania. He also has a Master of Science degree in Environmental Science, with a Concentration in Toxicology, from Drexel University’s School of Environmental Science and Engineering.

Michael Prescott
Michael Prescott is an expert licensed professional environmental engineer and has conducted over 1,300 environmental audits, inspections, and assessments of regulated facilities. Currently, he is a contractor to EPA helping Regional Offices and Headquarters conducting multi-media compliance evaluation inspections of regulated facilities and assisting with targeting and enforcement support. Mr. Prescott is a fully credentialed EPA lead inspector for Resource Conservation and Recovery Act (RCRA) Hazardous Waste, Underground Storage Tanks (USTs), Clean Air Act (CAA), and Clean Water Act (CWA).
Mr. Prescott has also provided diverse environmental services to Fortune 1000 companies and federal, state, and local government agencies.

Andrew Seligman

Andrew Seligman began his career in January, 1993 at EPA Region 2. Andrew started as a Clean Air Act Inspector and Enforcement Officer. He developed his foundation skills for four years before transferring to EPA Region 3 in February, 1997. In 1997 Andrew was an integral member of the air enforcement program in Region 3 where as part of a small team that developed innovative targeting and inspection methods for the New Source Review/Prevention of Significant Deterioration enforcement program where he negotiated many settlements that included millions of dollars in injunctive relief as well as penalties. These programs became the model for the national enforcement initiatives for the Kraft Pulp and Paper, Petroleum Refinery, Synthetic Organic Chemical, and Portland Cement Plant initiatives. As part of these initiatives, Andrew was one of the national trainers to instruct staff in other EPA Regions and States on these new targeting, inspection and enforcement techniques. In 2003, Andrew changed direction and applied these same skills in the water enforcement program and attained similar results. Starting in 2005, Andrew began working on joint EPA/State Department programs instructing foreign government environmental agencies and staff on how to apply inspection and enforcement techniques within the context of their country's own laws and culture. Some of the countries to which Andrew has provided instruction and assistance include: Israel; Jordan; Morocco; Taiwan; Vietnam; Philippines; Indonesia; Singapore; South Korea; Nepal; Spain; and Chile. Andrew has been awarded several EPA Gold and Bronze medals as well as other special recognitions.

Kelly Crawford

Kelly Crawford serves as Chief of DOEE's Air Quality Division Compliance and Enforcement Branch. She leads a team of air quality inspectors ensuring compliance with air quality regulations for major and minor stationary sources in the District of Columbia. She also manages Districts asbestos abatement permitting and inspection team. Prior to her tenure at DOEE, Mrs. Crawford served as contract environmental engineer and program manager at NASA's Goddard Space Flight Center supporting the Oil Control Program and Air Quality Program. Mrs. Crawford holds a M.S. in Management with a focus in Emergency Management from University of Maryland, and a B.S. in Environmental Science from Rochester Institute of Technology. She is also an LEED Accredited Professional by the US Green Building Council.

Joyce Johnson

Joyce Johnson is the Federal Facilities Program Manager and an Enforcement Officer in the Enforcement & Compliance Assurance Division, Waste Enforcement Branch, for EPA Region 6. Joyce was a Clean Air Act inspector for 10 years before joining RCRA enforcement in 2010. She is a member of the Region 6 Response Support Corps serving two rotations in New Orleans after Hurricanes Katrina and Rita, and most recently in Corpus Christi after Hurricane Harvey. Joyce is a graduate from the University of Arkansas at Little Rock and also served 34 years in the US Air Force.