Monday, April 20, 2020 (Mountain Daylight Time)

Training Workshops

8:30-12:30	Community Innovation: Learning from Leaders to Protect Health from Smoke
8:30-12:30	Smoke Modeling from Forest to Plume: Integrated Modeling Workshop for Smoke Management
8:30-12:30	Incorporating Smoke Impacts into Air Quality Forecasting
1:30-5:30	New Generation Satellite Products for Operational Fire and Smoke Applications
1:30-5:30	Wildfire Detection and Dispatch - Case Studies and Enabling Technologies

Tuesday, April 21, 2020 (Mountain Daylight Time)

8:00-9:00	**Poster Session**			
9:00-9:15	**Welcome and Introductions** Toddi Steelman, PhD, IAWF President, Stanback Dean, Nicholas School of the Environment, Duke University Peter Lahm, Symposium Chair, Air Resource Specialist, USDA Forest Service			
9:15-9:45	**KEYNOTE PRESENTATION** Michael Kodas, Author, Photojournalist, Editor and Educator			
9:45-10:45	**KEYNOTE PANEL** **Federal Leadership on Wildland Fire Smoke** Moderator: Peter Lahm, Air Resource Specialist, USDA Forest Service Patrick Breysse, PhD, Director, National Center for Environmental Health, U.S. Centers for Disease Control and Prevention Susan Combs, Assistant Secretary of Policy, Management and Budget, U.S. Department of the Interior Anne Idsal, Principal Deputy Assistant Administrator, Office of Air and Radiation, U.S. Environmental Protection Agency James Hubbard, Under Secretary, Natural Resources and the Environment, U.S. Department of Agriculture			
10:45-11:15	**Networking Break**			
	Room One	**Room Two**	**Room Three**	**Room Four**
	Emissions	**Observations**	**Smoke Management**	**Special Session: How Smoke Impacts on Air Quality Affect Decisions on Prescribed Fires in Forests: Current Approaches and Research Needs**
	Moderator: Nancy French Moderator: Matthew Hurteau	Moderator: Joseph Wilkins Moderator: Carol Baldwin	Moderator: Dar Mims Moderator: Mark Copple	Moderator: Mike McGown
11:15-11:30	1. Emissions from a Tropical Peatland Wildfire Experiment: from Ignition to Spread to Suppression (Yuqi Hu)	9. Smoke tracking with SensorMap: Combining regulatory and Purple Air data to fill in gaps in the PM2.5 network (Graeme Carvlin)	17. Insights From Smoke Management Collaboration in the Eastern Sierra Nevada (Sean Mueller)	25. Prescribed Fires and Prescriptions for Health: Short-Term Exposures, Research Gaps and Community Engagement (Gabriela Goldfarb, Carol Trenga)
11:30-11:45	2. Improvements to the Estimation of Emissions from Pre-harvest Sugarcane Burning (George Pouliot)	10. Validating wildfire smoke transport within a coupled fire-atmosphere model using a novel high-density instrumentation network (Derek Mallia)	18. Practitioner Smoke Management Ignition Techniques to Mitigate Emissions (Jen Croft)	26. AQ Management Tools to Support Prescribed Burning Increases (Gregory Vlasek)
11:45-12:00	4. The effect of fire emission factor uncertainty on global chemistry simulations (Rebecca Buchholz)	11. An Open Source R package for Purple Air Data Analysis (Jonathan Callahan)	19. Campaign support forecasting facilitates information based deployment decisions (Pius Lee)	27. Rx Fire Decision Making in WA State (Carolyn Kelly)
12:00-12:15	5. A new way to predict emission factors – a compositional data approach (David Weise)	12. An overview of small fire sampling during FIREX-AQ (Jim Crawford)	20. Canadian Health Portfolio Wildfire Emergency Response (Vanessa Beaulac)	28. The Colorado Approach to Smoke Permitting for Prescribed Fire (Boyd Lebeda)
12:15-12:30	6. Emission Factors of Gaseous and Particulate Air Pollutants from the Simulated African Biomass Burning (Rudra Pokhrel)	13. Building the Right Solution for Real-Time Smoke Monitoring Deployments (Zoë Fyfe)	21. Challenges of Smoke Forecasting on Mendocino Complex Fire (Bret Anderson)	29. Montana/Idaho Smoke: Coordinating Interstate Smoke from Prescribed Burning (Seth Morphis)
12:30-12:45	7. Wildland Fire Emissions Factors in North America and the new Smoke Emissions Reference Application (SERA) (Susan O'Neill)	14. Characteristics and evolution of particles and gases in a Canadian boreal forest wild fire plume (Katherine Hayden)	22. Model Performance and Sensitivity Analysis of 2016 Western North Carolina Wildfire Events (Sadia Afrin)	30. Panel Discussion
12:45-1:00	8. Performance assessment of Fire Inventory from the National Center for Atmospheric Research (FINNv2) wildfire emissions estimates using satellite aerosol observations (Nathan Pavlovic)	15. Fueled from below: Linking Fire, Fuels and Weather to Atmospheric Chemistry for FIREX-AQ (Amber Soja)	OPEN	

1:00-2:00	**Lunch Break**			
	Room One	**Room Two**	**Room Three**	**Room Four**
	Health and Other Impacts	**Observations**	**Smoke Modeling**	**Climate Change**
	Moderator: Michele Steinberg Moderator: Nathan Pavlovic	Moderator: David Weise	Moderator: Marlin Martinez Moderator: Dar Mims Moderator: Cabe Speary	Moderator: Chuck Bushey Moderator: Paul Garbe Moderator: Yong Liu
2:00-2:15	IGNITE TALK 33. The JFSP Fire Science Exchange Network (Stacey Frederick)	IGNITE TALK 40. Use of amateur radio during wildfires to transmit data: A low-tech solution to a high tech problem (Vanessa Beaulac)	47. The role of the fire-atmosphere coupling in high smoke concentration episodes in complex terrain (Adam Kochanski)	IGNITE TALK 54. Identification of Persistent Fire Sources in High Northern Latitudes (Justin Fain)
2:15-2:30	34. Mapping Modeled Exposure of Wildland Fire Smoke for Human Health Studies in California (Nancy French)	41. Comparison of Ozone Measurement Methods in Biomass Burning Plumes (Russell Long)	48. A Numerical Modeling Study of Smoke Dispersion and the Ventilation Index in Southwestern Colorado (Michael Kiefer)	55. Impact of Anthropogenic Climate Change on the Diablo Winds Associated with Wildfires in California (Yi-Chin Karry Liu)
2:30-2:45	35. Communication Interventions for Public Health Protection from Wildland Fire Smoke: A Scoping Review (Ryan Michael)	42. Connecting Crop Productivity, Residue Fires, and Air Quality over Northern India: A Long-term Inference from NASA A-train Satellites (Hiren Jethva)	50. Environment and Climate Change Canada's wildland fire smoke modelling applications and forecast services: informing the public, delivering critical information for decision making and supporting international initiatives (Didier Davignon)	56. The impact of smoke exposure on grape and wine composition and the development of smoke taint (Anita Oberholster)
2:45-3:00	36. Evaluating the Acute Health Impact of PM2.5 Exposure During the October 2017 California Wildfires (Stephanie Cleland)	43. Ecosystem impacts in the atmosphere: How much fuel goes up in smoke? (Rainer Volkamer)	51. Evaluation of biomass burning smoke forecasts over the Western U.S. during the FIREX-AQ 2019 field campaign (Pablo Saide)	57. Examing Recent Trends in Fires and Air Quality using SNPP VIIRS Data (Shobha Kondragunta)
3:00-3:15	37. Hazardous Air Pollutants (HAPs) in Fresh and Aged Western US Wildfire Smoke (Katelyn O'Dell)	44. PurpleAir PM2.5 U.S. Correction and Performance During Smoke Events (Karoline Johnson Barkjohn)	52. Air quality and aerosol predictions at NOAA/National Weather Service and their applications (Ivanka Stajner)	58. A Framework for Assessment and Mitigation of Wildfire-induced Air Pollution Considering Climate Change (Michele Barbato)
3:15-3:30	38. Integrating Data from Sensors with Regulatory Monitors during Wildfire Smoke Events (Susan Stone)	45. Smoke Observations by LIDAR and Sun Photometer Mobile Measurements during FIREX-AQ Campaign in summer 2019 (Ioana Popovici)	53. Superfog-Related Traffic Accidents in Oregon (Rick Graw)	OPEN
3:30-3:45	39. Improving Smoke Management through Collaboration (Monica Long)	46. Experiments to Measure Smoldering Behavior in Simulated Wildland Fuels (Jeanette Cobian-Iñiguez)	OPEN	OPEN
3:45-4:00	Networking Break			
4:00-5:00	**KEYNOTE PANEL** **COVID-19 and Wildfire Smoke** Moderator: Peter Lahm, Air Resource Specialist, USDA Forest Service Sarah B. Henderson, PhD, Associate Professor (Partner), Senior Scientist, Environmental Health Services, BC Centre for Disease Control, Occupational and Environmental Health (OEH), The University of British Columbia Wayne E. Cascio, M.D., FACC, FAHA, Director, Center for Public Health and Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency John Balmes, MD, Professor, University of California, San Francisco, School of Medicine George L Geissler, State Forester, Deputy Supervisor of Wildland Fire and Forest Health/Resiliency, Washington Department of Natural Resources			
5:00-6:00	**Poster Session**			

Wednesday, April 22, 2020 (Mountain Daylight Time)			
8:00-9:00	**Poster Session**		
9:00-10:00	**KEYNOTE PANEL SESSION** **Building Coalitions and Enhancing Communication Among Stakeholder Communities Panel** Faciliator, Beverly Banister, Deputy Regional Administrator, EPA Region 4 Douglas Watson, Chief, Air Monitoring and Planning Section Meteorologist, KDHE-BOA Darryl Jones, Forest Protection Chief for South Carolina Forestry Commission Jennifer Montgomery, Director, Governor's Forest Management Task Force Marcy Ballman, Division Director, Health Promotions, American Lung Association		
10:00-10:45	Networking Break		
	Room One	**Room Two**	**Room Three**
	Special Session: FASMEE	**Special Session: Smoke Management in the Southeast: Highlights of Highly Effective Collaboration between State Fire/Forestry, State Air Quality Agencies, and Non-Governmental Organizations (NGOs) across the Southeast**	**UC Davis Wildfire & Smoke Health Summit** Sponsored by the UC Davis School of Medicine and the UC Davis Office of Research
	Moderator: Roger Ottmar Moderator: Nancy French	Moderator: Rick Gillam Moderator: Jakob Lindaas Moderator: Dar Mims	Moderator: Angela Haczku
10:45-11:00	61. Fire And Smoke Model Evaluation Experiment (FASMEE)– Overview of the Project (Roger Ottmar)	69. Prescribed Fire and Air Quality in the Southeast: EPA Perspectives on Successful Collaboration for Prescribed Fire Smoke Management (Rick Gillam)	10:45-11:25 H1. The Many Health Effects of Wildfires: The Need for Research-informed Policies and Preparedness Plans Kenneth W Kizer (Atlas Research)
11:00-11:15	62. The Fire And Smoke Model Evaluation Experiment (FASMEE) Western Wildfire and Southwest Campaign: characterizing the source for fuels, fuel consumption, and total smoke (Roger Ottmar)	70. Confronting the Issues Air Quality and Wildland Smoke In South Carolina (Darryl Jones)	11:25-11:45 H2. Wildfires and Health: Assessing the Toll in Northern California Irva Hertz-Picciotto (UCD SOM)
11:15-11:30	63. FASMEE Western Wildfire Campaign: Fuel consumption maps to reduce uncertainties in emissions (Andrew Hudak)	71. Southeast Prescribed Fire and Air Quality Workgroup: Addressing Tomorrow's Challenges Today (Scott Davis)	11:45-12:05 H3. Health Impacts of Wildfires and Airborne Particulates Kent Pinkerton (UCD SOM)
11:30-11:45	64. Direct Measurement of Flame Energy Release from Ground Based Sensors in FASMEE Manning Creek Rx Burn (Bret Butler)	72. Development and Implementation of a Smoke Management Program in North Carolina (Cabe Speary)	
11:45-12:00	65. Wildland fire emissions and atmospheric measurements from unmanned aircraft systems to support FASMEE (Adam Watts)	73. Collaboration Between Agencies for Protection of Air Quality in North Carolina (Randy Strait)	12:05-12:25 H4. A One Health Perspective on the California Wildfires Tina Palmieri (UCD SOM)
12:00-12:15	66. Microbial Emissions affect Biodiversity and Ice Nucleation Potential in FASMEE Smoke Plumes (Leda Kobziar)	74. Advances in the science of prescribed fire and smoke management: an NGO perspective on achieving successful smoke management through coproduction (Kevin Hiers)	12:25-12:35 H5. Wildfires: One Firefighters Perspective Edgar Olineka (Penryn Fire Protection District)
12:15-12:30	67. Remote Sensing for quantifying wildland fire effects: A case study of the 2019 Williams Flats Fire (Nancy French)	75. Panel Discussion	12:35-12:45 H6. Effect of Wildfire Smoke Exposure on Pregnancy Outcomes in the Non-Human Primate Bryn Willson (OBGYN resident, UCD SOM)
12:30-12:45	68. Modeling support for FASMEE western campaign (Adam Kochanski)		
12:45-1:30	**Networking Break**		

	Room One	Room Two	Room Three
	Observations	**Special Session: Emerging Plume Rise Characterization Approaches**	**UC Davis Health Summit**
	Moderator: Chuck Bushey	Moderator: Joseph Wilkins Moderator: Carol Baldwin	Moderator: Anthony Wexler Moderator: Tina Palmieri
1:30-1:45	76. The Mother of all PyroCbs: How did the Pacific Northwest PyroCb Event in 2017 Stand Out? (Michael Fromm)	84. A review of approaches to estimate wildfire plume injection height within large-scale atmospheric chemical transport models (Saulo Frietas)	1:30-2:10 H7. Smoke exposure on pregnant women and children, impacts, mitigation and messaging Camille Raynes-Greenow (University of Sydney, Australia)
1:45-2:00	77. Using column measurements to evaluate the impacts of wildfires: Emission fluxes and enhancement ratios (Kyle Zarzana)	85. Plume Rise Models: An Evaluation of Implementation and Performance (Shawn Urbanski)	
2:00-2:15	78. Using lower cost sensors to establish citizen-based monitoring networks in smoke-impacted regions (Bonne Ford)	86. Parameterization of fire plume rise in HRRR-Smoke (Ravan Ahmadov)	2:10-2:30 H8. Gestational Wildfire Exposures in the B-SAFE Pregnancy Wildfire Study Rebecca Schmidt (UCD SOM)
2:15-2:30	79. Western wildfire observation during Fire Influence on Regional to Global Environments and Air Quality (FIREX-AQ) (Carsten Warneke)	87. How Well Can We Estimate Fire Emissions Using Satellites? Assessing Five Bottom-up and Top-down Fire Products during the 2018 Camp Fires in California (Daniel Tong)	
2:30-2:45	80. Wildfire aerosol and gas-phase measurements from a NOAA Twin Otter during the 2019 Fire Influence on Regional to Global Environments and Air Quality (FIREX-AQ) Study (Ann Middlebrook)	88. CALIOP-based Biomass Burning Smoke Plume Height (Amber Soja)	2:30-2:50 H9. Health Outcomes of Early-Life Wildfire Smoke Exposure: Lessons Learned from a Nonhuman Primate Cohort Lisa A Miller (UCD SVM)
2:45-3:00	81. Ceilometers and other tools for determining vertical distributions of smoke (Phil Swartzendruber)	89. Quantifying the Impact of Intense Pyroconvection on Stratospheric Aerosol Loading (David A. Peterson)	2:50-3:10 H10. Wildfire Smoke and Innate Immune Cell Activation Angela Haczku (UCD SOM)
3:00-3:15	82. BBOP Shows Rapid Changes in Aerosol Properties in the Near Field (Arthur Sedlacek III)	90. Improving Daily Surface Particulate Matter Estimates during Extreme Fire Events using a Novel NASA Satellite Plume Injection Height Algorithm (Marcela Loria-Salazar)	3:10-3:30 H11. Personalized monitoring approaches during wildfires Nick Kenyon (UCD SOM)
3:15-3:30	83. Use of Lightning Data as a Supplementary Tool for Smoke Monitoring (Chris Vagasky)	91. Detecting Nighttime Fire Combustion Efficiency and Characterizing Plume Rise from Space (Jun Wang)	
Networking Break			
4:00 - 5:00	**KEYNOTE PANEL SESSION** **Uncharted Fire & Smoke Extremes in Australia: Rapid Responses and What We Learned** Monica Long, Meteorologist, Bureau of Meteorology, Australia, Moderator Martin Cope, PhD, Australian Commonwealth Science and Industrial Research Organisation (CSIRO), Principal Research Scientist Fay Johnston, PhD, Associate Professor, Public Health and Primary Care, University of Tasmania Mike Fromm, Meteorologist, United States Naval Research Lab		

Thursday - April 23, 2020 (Mountain Daylight Time)				
	Room One	**Room Two**	**Room Three**	**Room Four**
	Smoke Management	**Smoke Modeling**	**Special Session: Keys to Successful Prescribed and Managed Burns**	**Exposure and Health Impacts**
	Moderator: Marlin Martinez Moderator: Mark Copple Moderator: Dar Mims	Moderator: Margit Bucher	Moderator: Gregory Vlasek Moderator: Kelly Martin	Moderator: Paul Garbe Moderator: Katelyn O'Dell
9:00-9:15	92. How are We Addressing and Preparing for the Risks of Smoke? (Peter Lahm)	99. Impacts of sugarcane fires and sugar mills on PM2.5 air quality in South Florida (Holly Nowell)	106. Introducing the California Joint Prescribed Fire Monitoring Program (Joe Restaino)	113. Suppression of Peat Fire by Rain (Shaorun Lin)
9:15-9:30	93. Smoke Management: The Risk Factor (Ann Hobbs)	100. PB-Piedmont a Decision Support Tool for Wildland Smoke on Roadways (Gary Curcio)	107. Modeled Effects of Fuel Reduction on Rim Fire Daily Smoke Emissions (Leland Tarnay)	114. Can peat soil support a flaming wildfire? (Shaorun Lin)
9:30-9:45	94. Incorporating the newest satellite fire detection information into smoke modeling for public health research (Sean Raffuse)	101. Recent Enhancements to Smoke Dispersion Models to Facilitate Meteorological/Fire Behavior/Air Quality Model Integration (Bret Anderson)	108. Historical requests and occurrence of weather conditions for prescribed fires in Chelan County, Washington State, USA (Colton Miller)	115. Wildfire Smoke Readiness in Canada using the Air Quality Health Index (AQHI) (Céline Audette)
9:45-10:00	95. The US Forest Service Scientific Assessment for Wildland Fire Smoke (Sarah McCaffrey)	102. Emissions, Transport, and Chemistry of Smoke from Western U.S. Wildfires (Megan Bela)	109. A New Reporting System for Wildfire and Prescribed Fire Air Monitoring (Antonio Morales)	116. Evaluating the implementation of an emergency regulation to protect California's outdoor workers from wildfire smoke exposure (Kathryn Conlon)
10:00-10:15	96. Evaluating the Performance of Multi-Pollutant Sensor Pods in Biomass Combustion Smoke (Matthew Landis)	103. Impact of horizontal resolution on wild fire smoke plume rise (Jeffery McQueen)	110. Apportioning Smoke Impacts of 2018 Wildfires on Eastern Sierra Nevada Sites (Sean Mueller)	117. Case Controlled Comparison of Wildfire and Non-Wildfire Burn Injuries (Tina Palmieri)
10:15-10:30	97. Using climate models to schedule future prescribed fires: A case study from Central Washington, USA (Harry Podschwit)	104. Investigation of fire smoke plume injection height sensitivities during the 2017 Northern California wildfires (Joseph Wilkins)	111. Smoke impacts from Prescribed Burns in NSW Australia (Owen Price)	118. Investigating Protective Health Decision-Making in Response to Wildfire Smoke in California (Francisca Santana)
10:30-10:45	OPEN	105. Evaluation of smoke modeling tools used for estimating prescribed burning air quality impacts (Megan Johnson)	112. Discussion	119. Smoke Exposure of an Operational Prescribed Burning Program (Sadia Afrin)
11:00-12:00	**KEYNOTE PANEL** **Wildfire Smoke and Health Effects** Moderator, Jason Vargo, Lead Scientist - Climate Change and Health Equity, California Department of Public Health Moderator, Mary Clare Hano, Applied Social Scientist, U.S. Environmental Protection Agency, Office of Research and Development Kat Navarro, Research Industrial Hygienist, National Institute for Occupational Safety and Health Sheryl Magzamen, Assistant Professor, Epidemiology, Department of Environmental and Radiological Health Sciences, Colorado State University Ana Rappold, PhD, Statistician, Environmental Public Health Division of the National Health and Environmental Effects Research Lab, Environmental Protection Agency			
12:00-12:45	**Lunch Break**			
	Room One	**Room Two**	**Room Three**	**Room Four**
	Observations	**Climate Change & Health Impacts**	**Emissions**	**Smoke Modeling**
12:45-1:00	121. Nitrogen in wildfire smoke: how much is there and what happens to it? (Jakob Lindaas)	128. Accounting for prior wildfires decreases area burned and emissions under projected climate in the Sierra Nevada (Matthew Hurteau)	134. Emissions from Fires at the Wildland Urban Interface (Amara Holder)	140. A comparative study of fire emissions and smoke transport in two major wildfire regions of China (Yongqiang Liu)
1:00-1:15	122. Smoke Particle Size Distributions and Their Downwind Evolution Observed During FIREX-AQ (Richard Moore)	129. Future fire and smoke trends in the western United States under changing climate (Yongqiang Liu)	135. Spatially refined biomass burning emissions inventory in Chile (Patricia Oliva)	141. Comparing Smoke Impacts from Future Wildland Fires under Alternative Forest Management Regimes (Jonathan Long)
1:15-1:30	123. Field data? FIELD DATA! – Learning more about smoke from small fires during the NOAA/NASA FIREX-AQ campaign (Jessica McCarty)	130. Informing the use of N95 respirators by the general public during wildfires (Kaitlyn Kelly)	136. Effect of Moisture Content and Fuel Type on Emissions (Priya Garg)	142. Wildfire and Prescribed Fire Guidance under the Exceptional Events Program (Denise Scott)

1:30-1:45	124. Environmental Controls on the Physical and Optical Properties of Biomass Burning Aerosols Measured during FIREX-AQ (Elizabeth Wiggins)	131. Increasing Wildfire Smoke Readiness in the Washington State Public Health System (Kaitlyn Kelly)	137. Global Biomass Burning Emissions Product from MODIS and VIIRS Active Fire Detections (Xiaoyang Zhang)	143. Current operational products for smoke management, Part 1: Desert Research Institute Part 2: Interagency Wildland Fire Air Quality Response Program (Tim Brown and Narasimhan Larkin)
1:45-2:00	125. In-Situ Trace Gas Ratios Measured During the 2019 FIREX-AQ Airborne Field Campaign (Hannah Halliday)	132. Health Impact Analysis of Wildfire Smoke in Canada (Carlyn Matz)	OPEN	144. Rapid Update Automated Smoke Forecasting (Martin Cope)
2:00-2:15	126. Combining global observations and models to monitor wildfires, smoke and their impact on air quality (Mark Parrington)	133. Knowing Your Audience: A Typology of Smoke Sense Participants to Inform Wildland Fire Smoke Health Risk Communication (Mary Clare Hano)	OPEN	OPEN
2:30 - 2:45	**Closing Session**			
	Poster Presentations			
	P1. NWCG Smoke Committee (SmoC) (David Mueller)	P2. CALIOP View of Smoke in the Northern Hemisphere (Jason Tackett)	P3. Wildfire Smoke Exposure Activates Innate Immune Cells in the Circulation: 2018 California Wildfires (Melissa Teuber)	P4. Improved Fire Activity Time Series by Modeling Fire Energy Distributions (Edward J. Hyer)
	P5. Characterization of Carbon Dioxide, Methane, and Black Carbon Emissions from Two California Wildfires in 2019 (Shang Liu)	P6. Effect of plant species on composition of pyrolysis products (David Weise)	P7. Southern Fire Exchange: Uniting Fire Science and Natural Resource Management (Laurel Kays)	P8. Constraining wildfire emission inventories using airborne flux measurements (Johana Romero)
	P9. Evaluation of Volatile Organic Compounds in Wildfires Using an Unmanned Aerial Vehicle Equipped with a Micro-gas-preconcentrator Sampler (Leslie Simms)	P10. Communicating Smoke Plume Forecasts for Prescribed Burns via Augmented Reality (Martin Cope)	P11. The Effect of Prescribed Burn Smoke on Emergency Department Visits and Hospitalizations in California (Anna Boser)	P12. Smoke Management Information Resources on the FRAMES Emissions and Smoke Portal (Josh Hyde)
	P13. The Interagency Fuels Treatment Decision Support System (IFTDSS) (Josh Hyde)	P14. Public Health Applications of Historical Smoke Forecasts: An Evaluation of Archived BlueSky data for the Coterminous United States, 2015 (Ryan Michael)	P15. Design of a Wildland Fire Smoke Exposure System to Assess Cardiopulmonary Dysfunction in a Murine Model (Matthew Eden)	P16. CALIOP-based Biomass Burning Smoke Plume Detrainment Height (Emily Gargulinski)
	P17. Long-term adverse effects on lung function in community members following an exposure to significant levels of smoke from wildfires (Christopher Migliaccio)	P18. Reducing the Impacts of Wildland Fire: Public Health Partnership with Local Forestry (Lauren Thie)	P19. The Effect of Fuel Characteristics and Fire Dynamics on Emissions, Dispersion, and Air Quality Impacts (Brian Gullett)	P20. Wildland Fire Smoke Exposure and Systemic Health Effects of Wildland Firefighters in the Midwestern United States (Wu Chieh-Ming)
	P21. New NWCG Smoke Committee Product: The Smoke, Roadways and Safety Guide (Peter Lahm)	P22. Methods for Prescribed Fire Smoke Management in the Southern U.S. (Jennifer Fawcett)	P23. Using a Particle Sensor Network to Characterize Indoor and Outdoor Air Quality During Fire Season in Missoula, Montana (Heidi Vreeland)	P24. Estimation of Forest Fire Emissions in Southwest China from 2013 to 2017 (Qixing Zhang)
	P25. Visualization and Modeling Tools for Wildland Fire and Smoke: Remotely-sensed Data and Hands-On Applications (Susan O'Neill)	P26. Suppression of Peat Fire by Rain (Shaorun Lin)	P27. Can peat soil support a flaming wildfire? (Shaorun Lin)	P.28 Laboratory Analysis of Gas Emissions from Southeastern Forest Fuels (Andrew Johnson)
	P29. Health Impact Analysis of Wildfire Smoke in Canada (Carlyn Matz)	P 30. Effects Of Using an Assumption of Persistence for Fire Growth to Model Smoke Impacts (Marlin Martinez)	P31. Wildfire risk communication and management at U.S. diplomatic posts overseas (Molini Patel)	