

FUELS OF TODAY - FIRE BEHAVIOR OF TOMORROW

6th International Fire Behavior and Fuels Conference

Hyatt Regency Albuquerque, NM

April 29 - May 3, 2019

Monday, April 29, 2019

8:00 - 6:00

Conference Registration/Information Desk Open

EDUCATIONAL WORKSHOPS & TRAINING

Room One

Room Two

Room Three

9:00 - 1:00

Wildfire Storm Survival
Troop Emonds

Soil Moisture and Wildfire
Prediction Workshop

Planning for Fire in Future Climates: Best Management
Practices

1:00 - 2:00

Lunch - on your own

EDUCATIONAL WORKSHOPS & TRAINING (cont.)

Room One

Room Two

Room Three

Room Four

Room Five

2:00 - 6:00

Operational Incident Support with Wildfire Analyst and fiResponse
Joaquin Ramirez and David Jones

Continued... **Soil Moisture and Wildfire Prediction Workshop**

Continued.. **Planning for Fire in Future Climates: Best Management Practices**

Learning the Photoload Sampling Technique: Visually estimating surface fuel loadings from photographs for research and management applications
Robert E Keane, Rachel Loehman and Duncan Lutes

Fire and Fuels Management Tools
Susan Prichard, Roger Ottmar and James Cronan

2:00 - 6:00

Early Exhibitor Set-up

6:00 pm

Pre-Conference Gathering - JC's New York Pizza Department & Back Alley Draft House

Tuesday, April 30, 2019

7:00 - 9:30

Exhibitor Set-up

7:15 - 7:45

Greet the Day Yoga/Stretching - Led by Johnny Stowe

8:30 - 10:00

Welcome and Opening Keynote
Tom Zimmerman, Conference Chair and IAWF Immediate Past President
Arthur "Butch" Blazer, President, Mescalero Apache Tribe

10:00 - 10:30

Networking Break with Exhibitors

	CONCURRENT SESSIONS			
	Room One	Room Two	Room Three	Room Four
	Smoke	Deep Dive: Emerging Technologies used to inform fire management	Management Decisions	Fire Behavior
	Moderator: TBD	Moderator: Tami Parkinson	Moderator: TBD	Moderator: TBD
10:30 - 10:50	AI-based early wildfire smoke detection and suppression using optical sensors Azarm Nowzad	Todd Lindley	Why the Phoenix does not rise from today's ashes. Patrick Shea	A reduced fire-physics fire behavior model: Development and evaluation William Mell
10:50 - 11:10	Improving Spatial Resolution of Wildland Fire Location and Fuel Biomass Data Inputs to NOAA's NAQFC ShihMing Huang	Applying Antecedent Land Surface Conditions and Machine Learning to Wildfire Events and Seasonal Burn Prediction Jonathan Case	A Changing Fire Environment – Is Fire Program Development Matching Complexity? Tom Zimmerman/Joe Stutler	Camp Swift Research Burn: Fire behavior observations and numerical simulations Tom Milac
11:10 - 11:30	Predicting PM Emissions with FIRETEC Simulations Alexander Josephson	Adam C. Watts	Structure Loss to Wildfires - It's Effect On Suppression and Community Recovery David Shew	Understanding the Dynamics of Inclined Flames in Wildland Fires Michael Gollner
11:30 - 11:50	Modeling of smoke impacts on air quality using direct observation of hourly fire activity from geostationary satellites Nathan Pavlovic	Jessica Block	Looking For New Ways to Approach Lessons from the Past: Revisiting After Action Reports Tamara Wall	The Colorado Fire Prediction System (CO-FPS) and how it incorporates fuel moisture in simulations Jason C. Knievel
11:50 - 12:10	Development of a compact, portable smoke emissions sampling instrument appropriate for use with small Unmanned Aircraft Systems Jayne Boehmler	Dan McEvoy	Identifying Indigenous Burning Practices and Patterns using Historical Photographs Rick Arthur	Advancing fuel loading estimates for next-generation mapping, regional smoke management, emissions inventories and air-quality models Nancy French

12:10 - 12:30	Exploring the Vertical Distribution of Wildland Fire Smoke in CMAQ Joseph Wilkins	Discussion	Understanding fire spread in wildland urban interface communities Fernando Jose Szasdi Bardales	Flammability of American pines Morgan Varner
12:30 - 2:00	Lunch - on your own			
1:30-1:45	Work the Kinks Out Stretching - Led by Johnny Stowe			
	CONCURRENT SESSIONS			
	Room One	Room Two	Room Three	Room Four
	Smoke	Risk Management	Fire Behavior	Fire Effects
	Moderator: Nancy French	Moderator: TBD	Moderator: TBD	Moderator: TBD
2:00 - 2:20	Increases in PM _{2.5} emissions from wildfires in continental United States under climate change Yongqiang Liu	An evaluation of alternative weather inputs on fire risk simulations in southern California Alex Dye	Understanding Fire Behavior Mechanics in a Complex Landscape: Simulating Wildfires in Northeastern Minnesota Jacob Olbrich	Geographic patterns of fire severity following an extreme Eucalyptus forest fire in Southern Australia: 2013 Forcett-Dunalley fire Mercy Ndalila
2:20 - 2:40	Consumption and Emissions from Wildfires in Mexico Karla Oceguera-Salazar	Quantifying Community Risk to Wildfires Akshat Chalahwat	Appropriate Analysis of Wildland Fuel Composition David Weise	Burning Questions: Response of Interior B.C. Ecosystems to Fire Evelyn Hamilton
2:40 - 3:00	Micrometeorology and turbulence structures observed in a grass fire plume Maritza Arreola Amaya	Wildfire risk assessment and fuel treatment prioritization at Yosemite National Park, USA Dave Schmidt	Modeling the Wind Disturbances on Fires Near a Slope Tom Fletcher	Effects of fire intensity and abiotic factors on persistence of an encroaching woody species Heath Starns
3:00 - 3:20	CALIOP-based Biomass Burning Smoke Plume Height Amber Soja	Modeling and mapping fire risk from human factors in Mexico Norma Angélica Monjarás Vega	Dynamism of bark roughness as a possible factor in firebrand production Michael Gallagher	Mechanisms of Bark Beetle-Caused Mortality Following Variable Density Thinning and Prescribed Fire Treatments in a Central Sierra Mixed-Conifer Forest Alexis Bernal

3:20 - 3:40	Using GOES-16 to construct hourly time profiles of fire emissions from the Camp Wildfire in 2018 Northern California Susan O'Neill	Simulating Wildfire Risk through Time in Southern California Kevin Vogler	New Zealand Prescribed Fire Experiments to Test Convective Heat Transfer in Wildland Fires Sara McAllister	Carrying capacity of fire-prone landscapes: lessons from the Reburn project for carbon and wildlife habitat dynamics Susan Prichard
3:40 - 4:00	A new way to analyze the composition of materials – application to wildland fire gases David Weise	International and US Lessons on Engaging Local Officials for Wildfire Risk Reduction Michele Steinberg	Managing the Complexities and Consequences of Peat Fires Around Communities Mark Gunning	Fire-scar compartmentalization and bark-thickness as proxies of fire regimes in two tropical montane coniferous forests Jesus Sáenz-Ceja
4:00-4:30	NETWORKING BREAK with Exhibitors			
4:30 - 5:15	KEYNOTE - Live streamed to Sydney Jen Beverly, Assistant Professor (Wildland Fire) Agricultural Life and Environmental Sciences Renewable Resources, University of Alberta			
5:15 - 6:00	KEYNOTE - Live streamed from Sydney Jeremy Russell - Smith, Professor of Fire Ecology, Charles Darwin University, Darwin			
6:00 - 8:00	Poster Session/Exhibitor Reception			
Wednesday, May 1, 2019				
7:30 - 5:00	Conference Registration/Information Desk Open			
7:00 - 8:00	Fun Run/Walk			
7:00 - 8:00	Greet the Day Yoga/Stretching - Led by Johnny Stowe			
8:30 - 9:30	Keynote Robert H. Ziel, Fire Analyst, Alaska Fire Science Consortium, University of Alaska Fairbanks			
9:30 - 10:00	Networking Break with Exhibitors			

	CONCURRENT SESSIONS			
	Room One	Room Two	Room Three	Room Four
	Smoke	Fire Behavior/Fuels Treatment	DEEP DIVE Measuring and modeling pyrolysis in longleaf pine fuel beds to improve fire behavior models	Fire Effects
	Moderator: TBD	Moderator: TBD	Moderator: David Weise	Moderator: TBD
10:30 - 10:50	A Dispersion Model Assessment of the Ventilation Index in southwestern Colorado Michael Kiefer	Multi-criteria model selection for wildfire decision-making Harry Podschwit	Kinetic study of slow pyrolysis of live and dead wildland fuels Elham Amini	Invasive Grasses: A New Perfect Storm for Forested Ecosystems? Becky Kerns
10:50 - 11:10	The interaction of moisture content, ventilation, and fuel bed structure on the burning rate Sara McAllister	Mountain Pine Beetle Infestation and Wildfire, the British Columbia Experience Dana Hicks	Infrared spectroscopy for detection of gas-phase pyrolysis species: detection of naphthalene, methyl nitrite, allene, acrolein and acetaldehyde Tanya L. Myers	Rethinking our wildland fire management focus on forested lands Michele Crist
11:10 - 11:30	Critical Conditions for Ignition of Structural Materials by Piles of Smoldering Firebrands Hamed Salehizadeh	Fuels mapping in heterogeneous forests: comparison of interpolation methods and consequences for fire behavior prediction Justin Ziegler	Sampling SE vegetation pyrolysis products in canisters from field and wind tunnel fire experiments and analysis by GC/FID and GC /MS Steve Baker	Under Pressure: Uncovering the mechanisms in fire induced ruptures of live needles Kara Yedinak
11:30 - 11:50	Turbulence statistics and sensible heat fluxes associated with head fire and flank fires Melissa Gonzalez-Fuentes	Impact of fuel treatments on fire behaviour in boreal forest stands: a factorial study using FIRETEC Dan Thompson	Pyrolysis products emitted by prescribed fires in longleaf pine forests in the southeastern United States Timothy J. Johnson	The effects of fire return interval on the aboveground biomass and flowering of wiregrass in the southeastern USA Timothy Shearman

11:50 - 12:10	Automated real-time ensemble fire forecasting in California Chris Lautenberger	Funding fuel treatments: Quantifying ecosystem service benefits derived from fuel treatments Thomas Buchholz	Heats for evaporation, capacity, and combustion of fresh leaves and their relationships to leaf composition and moisture content Mark Dietenberger	Mesophyte impacts on forest floor moisture and litter flammability in fire-excluded pyrophytic oak-hickory woodlands Jesse Kreye
12:10 - 12:30	Discussion	Reconnaissance and preliminary findings regarding the Camp Fire with a focus on structure vulnerabilities Alexander Maranghids	Pre- and post-fire characterization of fuels at prescribed burns in longleaf pine stands in the southeastern United States Joseph Restaino	Discussion
12:30 - 2:00	Lunch - on your own			
	CONCURRENT SESSIONS			
	Room One	Room Two	Room Three	Room Four
	Smoke	Fuels Treatment	DEEP DIVE Measuring and modeling pyrolysis in longleaf pine fuel beds to improve fire behavior	Vegetation Analysis
	Moderator: Brian Potter	Moderator: TBD	Moderator: David Weise	Moderator: TBD
2:00 - 2:20	Examining weather factors associated with the largest of the large fires Brian Potter	Before, During and After the Fire. Preparing Youth Camps for Wildland Fire in 2019 Michael Jensen	Drone aerial photography to assess change in biomass J. Batchelor	Effects of Douglas-fir encroachment and removal on live and dead fuel moisture in a northwestern California oak woodland Jeffrey Kane
2:20 - 2:40	Sweep-Ejection Dynamics for Momentum and Heat Fluxes During Wildland Fires in Forested Environments Warren Heilman	Aerial Firefighting: Ground pattern formation from a vortex dynamics perspective. Saad Qureshi	Fire monitoring using 3D data from drone based PhoDAR and Terrestrial Laser Scanner A. Kato	Repeated fire sets trajectory for persistent herbaceous dominance and suppression of woody vegetation in basin big sagebrush ecosystems Lisa Ellsworth

2:40 - 3:00	Use of a High-Resolution Atmospheric Model for Pre-Burn Instrumentation Deployment Guidance Michael Kiefer	MASTIDON-a monster of a mastication study Robert Keane	Application of Background Oriented Schlieren to flow visualization in live vegetative fuel beds Amirhessam Aminfar	Quantifying resiliency in dry forests of the American West John Bailey
3:00 - 3:20	Supporting fire weather forecasting through a tool to identify convective outflows in numerical weather prediction models James Bresch	Mitigating wildfire hazard in black spruce (<i>Picea mariana</i>) dominated boreal forests Dave Schroeder	Analytical kinetics solutions with derived parameters for moisture desorption, pyrolysis, and char combustion for fresh leaves relative to compositions and moisture content Mark Dietenberger	Noise to Signal: Quantifying characteristics of acoustic impulse events from mature live needles Kara Yedinak
3:20 - 3:40	Evaluating forecasts of the Hot-Dry-Windy Index with GOES-16 data Brian Potter	Masticated (Mulched) Fuels and Fire Behaviour in Canada's Boreal Forest Environments Steven Hvenegaard	Physics based modeling of moisture evaporation in living leaves P. Rahimi Borujerdi	Developing a Near Real Time Monitoring System for Post Fire Vegetation Recovery for the Sierra Nevada, CA Jason Moghaddas
3:40 - 4:00	Fire smoke exposure and health impact assessment of the 2018 large wildfires in California Yufei Zou	Fuel Management research in Western Canada - FPIInnovations contributions to a complex science Chad Gardeski	Numerical Modeling of Fire Spread across pine needle fuel beds Masoud Ghasemian	Characterizing forest fuels using LiDAR data Hilary Cameron
4:00 - 4:30	NETWORKING BREAK with Exhibitors			
4:30 - 6:30	<p>JOINT PANEL SESSION WITH Sydney - Live streamed What Happens when Women Thrive – A Life and a Career in Fire</p> <p>Panelists (ABQ) Annie Benoit, NWCG Training Specialist Maria Sharpe, RPF MSc, Fire Science and Information Manager, Canadian Interagency Forest Fire Centre Michelle Walker (formerly Ryerson), Deputy State Director-Support Services, BLM Idaho State Office Deanne Shulman, Retired Forest Service</p> <p>Panelists (SYD) - TBD</p>			

7:00-8:00	Sahyinidra Fire Meditation - Led by Johnny Stowe			
7:00 pm	After Hours Networking			
Thursday, May 2, 2019				
7:30 - 5:00	Conference Registration/Information Desk Open			
7:15 - 7:45	Greet the Day Yoga/Stretching - Led by Johnny Stowe			
8:00 - 8:45	<p style="text-align: center;">Keynote - Live Streamed from Marseille Fantina Tedim, Assistant professor at the Department of Geography, Faculty of Arts, University of Porto, Portugal University Fellow at Charles Darwin University, Australia</p>			
8:45-9:30	<p style="text-align: center;">Keynote - Live Streamed from ABQ to Marseille Gwen Sanchez, US Forest Service, Acting Forest Supervisor, Modoc National Forest, Northern California</p>			
9:30 -10:00	Networking Break with Exhibitors			
CONCURRENT SESSIONS				
	Room One	Room Two	Room Three	Room Four
	Smoke	Deep Dive	Fire Behavior	
	Moderator: TBD	Moderator: Theresa Jain	Moderator: TBD	Moderator: TBD
10:00-10:20	Fire Weather Index Performance on Large Wildfire Events in California Heather Kane	Lessons from inventory analysis of fire resistance-promoting forest treatments: assessing needs, effectiveness, economic feasibility, and carbon implications	Examining sensitivity of modeled fire behavior to small perturbations in initial conditions Alex Jonko	Fuel Beds in the Monarch Butterfly Reserve, Mexico Diego Rafael Perez-Salicrup
10:20-10:40	Fire Danger and Fire Weather Indices in the Santa Cruz Mountains, California Liliana Chicas		Meteorological Conditions associated with the Camp Fire Extreme Fire Behavior. Matthew Brewer	Fire Has a Role Cheyenne Warner
10:40-11:00	An Overview of the Storm Prediction Center Fire Weather Program and Future Plans Patrick Marsh		Coupled fire-atmosphere interactions controlling the combined influences of wind and slope on fire behavior Rod Linn	Addressing the fire hazards from fences, mulch and woodpiles Kathryn Butler

11:00-11:20	Mapping extreme fire weather and its impact on firefighter safety W. Matt Jolly		Physical and Chemical Parameters Controlling Firebrand Production David Blunck	Community in transition: Post-fire community dynamics following Colorado wildfires Camille Stevens-Rumann
11:20-11:40	Emerging Matters (5 min) Grassland Biomass Estimation During the Dormant Season: Getting Good Data With Less Effort Carolyn Baldwin		Realtime.Earth: Live Photogrammetry of Fuels and Fire Behavior Using Mobile Phone Browsers Kasra Manavi	Lessons Learned from the 2017 California Wildfires Daniel Gorham
11:40-12:00	Emerging Matters (5 min) Expanding Fuels and Fire Landscapes in a Changing World Jessica McCarty		Trend of increasing nighttime temperature and its relation to fire behavior Timothy Brown	
12:00-1:30	Lunch - on your own			
1:00-1:15	Work the Kinks Out Stretching - Led by Johnny Stowe			
	CONCURRENT SESSIONS			
	Room One	Room Two	Room Three	Room Four
	Fuels Treatment	FBF - Rx Fire	Fire Behavior	Fire Danger Ratings and Detections
	Moderator: TBD	Moderator: Gene Rogers	Moderator: TBD	Moderator: TBD
1:30-1:50	Assessing fire behavior and effects following restoration in aspen dominated forests in Lake Tahoe Basin Chad Hoffman	Intermediate-scale fire behavior measurements in the field: Bridging the gap between laboratory experiments and management-scale prescribed fires. Kenneth Clark	Use of a physics-based fire model to evaluate the influence of tree separation distance and group size on crown fire initiation and group torching behavior Scott Ritter	Quantifying skill of significant fire potential outlooks in the Northwestern U.S. Joshua Clark

1:50-2:10	Restoration of ponderosa pine forest structure: It's not just about density. Mike Battaglia	Leading from behind: the role of agency fire managers in enabling widespread change for using prescribed fire. Hugh Scanlon	Fire Spread Upslope: Numerical Simulation of Laboratory Experiments Xareni Sánchez-Monroy	The Forest Fire Danger Prediction System of Mexico Daniel Jose Vega-Nieva
2:10-2:30	Effects of landscape-scale treatment extent and prioritization scheme on annual area burned and risk homes and other assets Joe Scott	Does the range of variability in prescribed burning affect forest understory composition in longleaf pine flatwoods James Cronan	Mapping fuel loads and fire behaviour from Sentinel in Durango, NW Mexico Favian Flores-Medina	Inferring energy incident on sensors in low-intensity surface fires from remotely-sensed radiation and using it to predict tree stem injury Matthew Dickinson
2:30-2:50	Risk Perception and Mitigating Behavior: An Analysis of Wildfire Risk Mitigating Behavior Hari Katuwal	Multi-scale approach to fuel reduction in a fragmented landscape in eastern Oregon Craig Bienz	Temporal Controls on Treatment Longevity in Lower Montane Forests of the Central Rocky Mountains Wade Tinkham	Estimation of Fuel Moisture Content Based on MODIS Satellite Observations Using Machine Learning Branko Kosovic
2:50-3:10	Effects of Biomass Harvest on Restoration Treatment Outcomes in the Southwest - Fuels and Fire Behavior Graham Worley-Hood	Next-Generation Fire Model Addresses Managers' "Burning Questions" - A Case for Co-Production James Furman	Seasonal variations in live fuel chemistry, kinetics and fire behavior W. Matt Jolly	Discussion
3:10-3:30	Emerging Matters (5 min) LiDAR as a tool for assessing hazard fuel reduction projects Julia Olszewski	Drone-based fuel and fire mapping: research on prescribed fires in Sycan Marsh, Oregon Russell Parsons	Development of wildland fuel beds and fire potential maps as tools for fire management planning in Mexico Enrique J. Jardel-Pelaez	Discussion
3:30-4:00	NETWORKING BREAK			
4:00-5:00	Keynote Closing Session Shawna Legarza PsyD, Director, Fire and Aviation Management, USDA Forest Service			
6:00	After Hours - Isotopes Baseball Game			
Friday and Saturday, May 3-4, 2019				

Friday, 8-12	Field Trip - Bosque del Apache National Wildlife Refuge
Friday, 8- 5	Field Trip - Santa Fe National Forest
Fri 8 - Sat 12	Field Trip - Gila National Forest, Black Range Ranger District (Overnight Trip)