

Ninth Triennial International Aircraft Fire and Cabin Safety Research Conference

October 28-31, 2019

Resorts Hotel, Atlantic City, New Jersey, USA

"Improving Safety Through Data Driven Innovation"

OPENING SESSION

MONDAY, OCTOBER 28, 2019

1:30 PM

Superstar Theater

Welcome and Logistics

International Fire and Cabin Safety Research Group Member

Welcome Address

William J. Hughes Technical Center Director (Invited)

United States Federal Aviation Administration

Keynote Address

Ali Bahrami

Associate Administrator for Aviation Safety

United States Federal Aviation Administration

Additional Talks on Futuristic Air Transport

TUESDAY AM		TUESDAY PM		WEDNESDAY AM	
HORIZON BALLROOM		HORIZON BALLROOM		HORIZON BALLROOM	
BATTERY I		BATTERY II		BATTERY III	
8:00-8:30	Detecting Hidden Fires on Aircraft Using Thermal Imaging Cameras <i>Simon Hind</i> National Research Council - Canada	1:30-2:00	Training Enhancements in Response to Lithium Battery Fires <i>Captain Scott Schwartz / Candace Kolander</i> Air Line Pilots Association International (ALPA)	8:00-8:30	SAE G-27 Lithium Battery Packaging Performance Committee <i>Doug Ferguson</i> The Boeing Company
8:30-9:00	Fire Mitigation Strategies for Aircraft <i>Captain Bob Brown</i> UPS	2:00-2:30	Flight Deck and Cabin Risk Reduction Informational Videos <i>Richard Hill</i> US Federal Aviation Administration Technical Center	8:30-9:00	Current Battery Safety Research Projects at Underwriters Laboratories Inc. <i>Judy Jeevarajan, PhD</i> Underwriters Laboratories (UL) LLC
9:00-9:30	PED Checked Bags <i>Steve Summer</i> US Federal Aviation Administration Technical Center	2:30-3:00	ICAO Presentation <i>Lynn McGuigan</i> International Civil Aviation Organization (ICAO)	9:00-9:30	EASA Participation in Research Projects on Transportation of Lithium Batteries by Air <i>Enzo Canari</i> European Union Aviation Safety Agency (EASA)
9:30-10:00	BREAK	3:00-3:30	BREAK	9:30-10:00	BREAK
10:00-10:30	Practical Considerations for Fighting a Lithium Battery Fire in the Aircraft Cabin <i>Steve Summer</i> US Federal Aviation Administration Technical Center	3:30-4:00	A New Hazard-Based Classification System for Shipping Lithium Batteries as Dangerous Goods: Background and Update <i>George Kerchner</i> PRBA-The Rechargeable Battery Association	10:00-10:30	FAA Testing for G-27 Packaging Standard <i>Tom Maloney</i> US Federal Aviation Administration Technical Center
10:30-11:00	Developing the 1st Edition of the Standard for Safety for Battery Fire Containment Products, UL 5800 - Harmonized Standard for the U.S. & Canada <i>Alexandra Klieger</i> Underwriters Laboratories (UL) LLC	4:00-4:30	FAA Dangerous Goods Program: Incidents and Undeclared Prospects for Safer Batteries for Transportation <i>Michael Givens</i> US Federal Aviation Administration	10:30-11:00	Improving the SAE G-27 Draft Standard Through Validation Testing <i>Ian Whittel / Manuel Hernandez</i> Transport Canada / National Research Council - Canada
11:00-11:30	Lithium Ion Battery Thermal Runaway Propagation Mitigation with Carbon Fiber Thermal Runaway Shield (TRS) <i>Michael Mo</i> KULR Technology	4:30-5:00	Prospects for Safer Batteries for Transportation <i>Aron Newman, PhD</i> Booz Allen Hamilton	11:00-11:30	Material Application Considerations in Fire Safety Packaging <i>Robby Kinsala</i> Fulcrum Labs

WEDNESDAY PM		THURSDAY AM		
HORIZON BALLROOM		HORIZON BALLROOM		
BATTERY IV		BATTERY V		
1:30-2:00	<p>On Measuring Energy from Li ion Batteries in Runaway and Combustion <i>James Quintiere, PhD</i> University of Maryland</p>	8:00-8:30	<p>Coupling Fractional Calorimetry Results with Statistical Methods to Characterize the Influence of Trigger <i>William Q. Walker, PhD</i> NASA Johnson Space Center (JSC)</p>	
2:00-2:30	<p>Fire Hazards from 18650 Li-ion Cells Used in Electronic Items for Aviation <i>Pravinray Gandhi, PhD</i> Underwriters Laboratories (UL) LLC</p>	8:30-9:00	<p>Thermal Runaway Event Analysis - Gas, Temperature and Pressure <i>Matthew Karp</i> US Federal Aviation Administration Technical Center</p>	
2:30-3:00	<p>Certification and Installation Guidance on Lithium Battery on Aircraft <i>Norman Pereira</i> US Federal Aviation Administration</p>	9:00-9:30	<p>Mitigation of Failure Propagation in Multi-Cell Lithium Ion Batteries <i>Lorraine Torres-Castro, PhD</i> Sandia National Laboratories</p>	
3:00-3:30	BREAK		9:30-10:00	BREAK
3:30-4:00	<p>Solid-State Li-ion Battery for High-Safety and Longevity <i>Jitendra Kumar, PhD</i> University of Dayton Research Institute (UDRI)</p>	10:00-10:30	<p>Electrical Energy Storage for Safe Installations <i>TBD</i> US Federal Aviation Administration Technical Center</p>	
4:00-4:30	<p>Experimental Investigation of Cascading Failure in 18650 Lithium Ion Cell Arrays: Impact of Cathode <i>Ahmed O. Said</i> University of Maryland</p>	10:30-11:00	<p>Nonwoven Battery Separators Change the Safety Paradigm for Lithium Ion Batteries <i>Brian Morin, PhD</i> Dreamweaver International, Inc.</p>	
4:30-5:00	<p>Predicting and Mitigating Cascading Failure of Thermal Runaway in Stacks of Li-ion Pouch Cells <i>Andrew Kurzawski, PhD</i> Sandia National Laboratories</p>	11:00-11:30		

WEDNESDAY PM		THURSDAY AM		THURSDAY PM	
SUPERSTAR THEATER		SUPERSTAR THEATER		SUPERSTAR THEATER	
MATERIALS I - General Session on the Challenges of Material Flammability Testing		MATERIALS II: Heat Release Testing		MATERIALS III: Heat Flux Influence in Flammability Tests	
Chair: Tim Marker, FAA Technical Center		Chair: TBD		Chair: TBD	
1:30-2:00	New Frontier for Flammability Testing <i>Andrea Scialpi</i> Testori Aero Supply	8:00-8:30	Revised Rate of Heat Release Test Method (HR2) <i>Mike Burns</i> US Federal Aviation Administration Technical Center	1:30-2:00	Vertical Flame Propagation Test <i>Tina Emami</i> US Federal Aviation Administration Technical Center
2:00-2:30	MCC as a Characterization Tool for Fire Resistant Adhesives <i>Patrick Zimmerman, PhD</i> 3M	8:30-9:00	Discovery of Supply Voltage Variation Effect on Materials Heat Release Results <i>Brian Johnson</i> The Boeing Company	2:00-2:30	Vertical Flame Propagation Heater <i>Martin Spencer</i> Marlin Engineering, Inc.
2:30-3:00	Waste Compartment Fire Containment Task Group Study <i>Jim Davis / Scott Campbell</i> AccuFleet / Safran Cabin Inc.	9:00-9:30	Discussion on Effect of Airflow Variation on Material Heat Release Results <i>Theodoros Spanos</i> The Boeing Company	2:30-3:00	Calibration of Heat Flux Transducers <i>Mike Burns</i> US Federal Aviation Administration Technical Center
3:00-3:30	BREAK	9:30-10:00	BREAK	3:00-3:30	BREAK
3:30-4:00	Relationship Between 3D Printed Materials and Flammability <i>Steve Rehn</i> US Federal Aviation Administration Technical Center	10:00-10:30	OSU Voltage Round Robin <i>Yonas Behboud</i> The Boeing Company	3:30-4:00	MATERIALS IV: New Test Methods RTCA Development of a New Flammability Test for Electronic Boxes <i>Steve Rehn</i> US Federal Aviation Administration Technical Center
4:00-4:30	Influence of Printing Parameters on the Flammability Behavior of 3D Printed Polyetherimide <i>Thomas Krause, PhD</i> Airbus	10:30-11:00	Paint Effect on Heat Release of Aircraft Materials <i>Michael Yue</i> Safran Seats Santa Maria LLC	4:00-4:30	Air Baffles Used to Minimize Air Current Influence during Cargo Liner Testing <i>Tim Salter</i> US Federal Aviation Administration Technical Center
4:30-5:00	TBD <i>Thomas Fabian</i> Underwriters Laboratories (UL) LLC	11:00-11:30	Flow Visualization in the OSU <i>Tina Emami</i> US Federal Aviation Administration Technical Center	4:30-5:00	Evacuation Slide Test, Calibration of Heater <i>Steve Rehn</i> US Federal Aviation Administration Technical Center

WEDNESDAY PM		THURSDAY AM		THURSDAY PM	
OCEAN BALLROOM A		OCEAN BALLROOM A		OCEAN BALLROOM A	
CARGO SMOKE		CARGO/HALON REPLACEMENT I		CARGO/HALON REPLACEMENT II	
Chair:	Matt Karp, FAA Technical Center	Chair:	Dhaval Dadia, FAA Technical Center	Chair:	Dhaval Dadia, FAA Technical Center
1:30-2:00	Smoke Generator Standardization for Certification Testing <i>Matt Karp</i> US Federal Aviation Administration Technical Center	8:00-8:30	Boeing Cargo MPS Test Cell Development <i>John Vance</i> The Boeing Company	1:30-2:00	Challenge Fire Tests Results - Boeing <i>David Shaw</i> The Boeing Company
2:00-2:30	Smoke Detection System Performance Modeling <i>Amanda Daly</i> Kidde Fire Protection Systems	8:30-9:00	Cargo MPS Task Group Updates <i>Dhaval Dadia</i> US Federal Aviation Administration Technical Center	2:00-2:30	Alternate Agent Acid Gas Capture and Analysis <i>Nels Olson</i> The Boeing Company
2:30-3:00	Aircraft Certification Testing for Smart Smoke Detectors <i>Dr. André Freiling</i> Airbus	9:00-9:30	Boeing Cargo MPS Halon Test Results <i>David Shaw</i> The Boeing Company	2:30-3:00	Lab-scale Evaluation of Potential Agents for Cargo Compartment Fire Suppression <i>Adam Chattaway</i> Kidde Fire Protection Systems - Collins Aerospace
3:00-3:30	BREAK	9:30-10:00	BREAK	3:00-3:30	BREAK
3:30-4:00	Improvements in Aircraft Smoke Detection <i>Jennifer Wood</i> University of Maryland	10:00-10:30	Alternate Agent MPS Test Results - FAATC <i>Dhaval Dadia</i> US Federal Aviation Administration Technical Center	3:30-4:00	Environmental-Friendly Fire Suppression System for Cargo Using Innovative Green Technology <i>Akhil Dinesh</i> Cranfield University
4:00-4:30	The Scalability of Smoke Density and the Viability of New Detection Methods in Aircrafts from Xtralis by Honeywell <i>Khaleel Rehman</i> Xtralis by Honeywell	10:30-11:00	Green Fire Suppression System - The Way Forward <i>TBD</i> Diehl	4:00-4:30	Charging-capable Li-ion Autonomous Safe Storage Interservice Container (CLASSIC) <i>Earl Armstrong</i> Naval Air Warfare Center-Carderock Division
4:30-5:00	<i>TBD</i>	11:00-11:30	Health and Safety Requirements for Halon Replacements - an Application-Based View <i>TBD</i> The Boeing Company	4:30-5:00	International Coordinating Council of Aerospace Industries Associations (ICCAIA) Cargo Compartment Halon Replacement Advisory Group (CCHRAG) <i>TBD</i> TBD

WEDNESDAY AM		OCEAN BALLROOM B		WEDNESDAY PM		OCEAN BALLROOM B		THURSDAY AM		OCEAN BALLROOM B	
		CRASH DYNAMICS I: Injury Assessment & Criteria				CRASH DYNAMICS II				CRASH DYNAMICS III	
Chair:		Jeff Gardlin, FAA		Chair:		Joseph Pelletiere, PhD, FAA		Chair:		Amanda Taylor, FAA CAMI	
8:00-8:30		Comparison of Lower Leg RESPONSES USING Hybrid 3, THOR, and THUMS in Simulated Aircraft Crashes Garrett Mattos, PhD Freidman Research Corporation		1:30-2:00		Comparison of Dynamic Responses of Anthropometric Test Devices (ATD) Hybrid II and FAA Hybrid III Prasanna Bhonge, PhD Gulfstream Aerospace Corporation		8:00-8:30		Transport Aircraft Water Mishap Kinematics & Regional Jet Mishap Kinematics Lance C. Labun, PhD Labun LLC	
8:30-9:00		Multilayer 16g Cushions Replacement Project Andrea Scialpi Testori Aero Supply		2:00-2:30		Injury Mechanisms in Obliquely Oriented Seats John Humm Medical College of Wisconsin		8:30-9:00		Narrow-body & Wide-body Mishap Kinematics Study Lance C. Labun, PhD Labun LLC	
9:00-9:30		Assessment of Lumbar Tension Loads in a Forward-Facing Seat Configuration Using Both Hybrid II and FAA Hybrid III ATDs Jeff Thompson Collins Aerospace		2:30-3:00		Pediatric Response to Oblique Loading in Aircraft Seats with Standard and Inflatable Seat Belots Julie Mansfield, PhD Ohio State University		9:00-9:30		Crash Simulation of YS-11 Transport Fuselage Sections Hiromitsu Miyaki Japan Aerospace Exploration Agency (JAXA)	
9:30-10:00		BREAK		3:00-3:30		BREAK		9:30-10:00		BREAK	
10:00-10:30		Human Body Model Evaluations for Aerospace Seat Applications Gerardo Olivares, PhD National Institute for Aviation Research (NIAR) Wichita State University		3:30-4:00		Use of the ES2 Anthropomorphic Test Dummy David Moorcraft US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)		10:00-10:30		Method Development for Full Aircraft Crash Simulation at Different Levels of Modeling Detail Paul Schatrow German Aerospace Center (DLR) Institute of Structures and Design	
10:30-11:00		UAS Airborne Collision Severity Evaluation Luis Gomez National Institute for Aviation Research (NIAR) Wichita State University		4:00-4:30		Evaluating the Influence of Armrests and ATD Arm Position on Hybrid II and FAA Hybrid III Lumbar Loads Robert Huculak, PhD National Institute for Aviation Research (NIAR) Wichita State University		10:30-11:00		Crashworthiness by Analysis: Vertical Drop Test and Simulation of a Composite H4000 Fuselage Section Chandresh Zinzuwadia National Institute for Aviation Research (NIAR) Wichita State University	
11:00-11:30		High-Energy Head Impacts in Athletes to the Side and Rear Cause Observable Deficits, Similar Magnitude Impacts to the Front Do Not Cause Observable Deficits Adam Bartsch, PhD Prevent Biometrics		4:30-5:00		The Effectiveness of Dynamic Analysis in the Qualification of an Aircraft Seat Against Emergency Landing Dynamic Conditions Luis Colus / P.L.G. Loureiro LHColus Technologia Ltd.		11:00-11:30		System Level Crashworthiness Trade Studies Lance Frazier, PhD Southwest Research Institute (SRI)	

THURSDAY PM

OCEAN BALLROOM B

CRASH DYNAMICS IV: F-28 Full Scale Crash Test Program

Chair: David Moorcroft, FAA CAMI

1:30-2:00
F-28 Program Overview (Part I)
Joseph Pelletiere, PhD
US Federal Aviation Administration

2:00-2:30
F-28 Program Overview (Part II)
Joseph Pelletiere, PhD
US Federal Aviation Administration

2:30-3:00
Development of a Full-Scale Finite Element Model of the Fokker F-28 Fellowship Aircraft and Crash Simulation Predictions
Karen Jackson, PhD
NASA Langley Research Center

3:00-3:30
BREAK

3:30-4:00
Summary of Results from a Fokker F-28 Full Scale Crash Test
Justin D. Littell, PhD
NASA Langley Research Center

4:00-4:30
Response from a Range of Occupants in Fokker F-28 Full Scale Crash Test
Amanda Taylor
US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

4:30-5:00
Simulation Development and Prediction of Occupant Response in a Fokker F-28 Full Scale Crash Test
Jacob B. Putnam
NASA Langley Research Center

TUESDAY AM		TUESDAY PM		WEDNESDAY AM	
OCEAN BALLROOM A		OCEAN BALLROOM A		OCEAN BALLROOM A	
POWERPLANT I		POWERPLANT II		ENGINE-APU/HALON REPLACEMENT	
Chair: Robert Ochs, PhD, FAA Technical Center		Chair: Robert Ochs, PhD, FAA Technical Center		Chair: Doug Ingerson, FAA Technical Center	
8:00-8:30	SAE AS6826 Powerplant Fire Test Standard and FAA AC20-135 Update <i>Phil Dang / John Ostic</i> Honeywell / The Boeing Company	1:30-2:00	Comparative Review of Kerosene Burners via an Assessment of the Post-test Material Allowables of Composite Panels TBD CTL Ireland	8:00-8:30	Hot Surface Ignition Temperature of Aircraft Fluids <i>Albert Moussa, PhD</i> BlazeTech
8:30-9:00	[SAE A-22] Development of AS6826/3: Fire Test Pass-Fail Criteria/Development of AIRxxxx: Assessment of Fire Test Results Daniel Laborie GE Aviation	2:00-2:30	Sonic Burner Compared to Carlin® for Propulsion Grade Fire Testing - How Equivalency can be Maintained? <i>Mary Kelly, PhD</i> Resonate Testing LTD	8:30-9:00	Release Altitudes of Fire Extinguishing Agents <i>The Boeing Company</i> TBD
9:00-9:30	[SAE A-22] Development of AS6826/4: Powerplant Fire Test Boundary Conditions Palmer Booth / Gregg Wozniak Gulfstream Aerospace	2:30-3:00	Available Burners for Propulsion Grade Fire Testing - A Review <i>Tom Mallon</i> Resonate Testing LTD	9:00-9:30	Investigating Carbon Dioxide in a Generic Nacelle Fire Simulator as a Halon 1301 Replacement for the Powerplant Fire Zone Douglas Ingerson US Federal Aviation Administration Technical Center
9:30-10:00	BREAK	3:00-3:30	BREAK	9:30-10:00	BREAK
10:00-10:30	An Air Framer's Pursuit of AC 20-135 Testing <i>Greg Roberts</i> Northrup Grumman Corporation	3:30-4:00	The BTU Heat Transfer Device: Adapting a Standard Tool in Aircraft Fire Testing to Small Scale Experiments <i>Tanja Pelzmann</i> École Polytechnique-Montreal	10:00-10:30	Solid Aerosol and Halon 1301 Results During Full-Scale Demonstration Testing <i>Stephane Pugliese / Terry Simpson</i> Airbus / Kidde Aerospace
10:30-11:00	FAATC Powerplant Testing <i>Timothy Salter</i> US Federal Aviation Administration Technical Center	4:00-4:30	Research on Flame Characteristics of the Oil Burner <i>Fei Xie / Wenting Bao</i> Test Center of CAAC	10:30-11:00	Preliminary Investigation in a Generic Nacelle Fire Simulator of a Sodium Bicarbonate/Bromotrifluoropropene Blend as a Powerplant Halon 1301 Replacement Douglas Ingerson US Federal Aviation Administration Technical Center
11:00-11:30	Concerns with Baseline Fire Barrier Recommendations of FAA AC 20-135 <i>Greg Roberts</i> Northrup Grumman Corporation	4:30-5:00	Temperature Rise Study on Fluid in Tube Subjected to Oil Burner <i>Long Chen</i> Test Center of CAAC	11:00-11:30	TBD

TUESDAY AM

OCEAN BALLROOM B

CABIN SAFETY I: Egress

Chair: Rick DeWeese, FAA CAMI

8:00-8:30

Evaluation of Egress from Side-Facing Seating with Deployed Inflatable Safety Equipment
David Weed
US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

8:30-9:00

Inflatable Emergency Egress II: Evaluation of Individual Inflatable Aviation Life Preserver Retention Characteristics
Melissa Beben
US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

9:00-9:30

Aircraft Seat Dimensions: Evaluation of the Effects of Seat Pitch and Width on Transport Category Airplane Egress
David Weed
US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

9:30-10:00

BREAK

10:00-10:30

Evaluation of Serious Games for Passenger Education
Melissa Beben
US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

10:30-11:00

WiWaves: Civil Aerospace Medical Institute Wind and Wave Water Survival Research Facility, Project Description, Outlook and Timeline
David Weed
US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

11:00-11:30

TBD

TUESDAY PM

OCEAN BALLROOM B

CABIN SAFETY II-Operations & Design

Chair: David Weed, FAA CAMI

1:30-2:00

Rational for New Brace Position Guidance
Richard DeWeese
US Federal Aviation Administration Civil Aerospace Medical Institute (CAMI)

2:00-2:30

Rethinking Complacency
Peter Zografos
Cabin Safety/Regulatory Professional Sr.
Cabin Crew - Major U.S. Operator

2:30-3:00

Design for Cabin Safety
Cesar Alberto Silva
EMBRAER

3:00-3:30

BREAK

3:30-4:00

TBD

4:00-4:30

TBD

4:30-5:00

TBD

TUESDAY AM		SUPERSTAR THEATER		TUESDAY PM		SUPERSTAR THEATER		WEDNESDAY AM		SUPERSTAR THEATER	
		Fire Research I: Advanced Materials				Fire Research II: Characterization				Fire Research III: Fire Modeling	
Chair:		Alexander B. Morgan, PhD		Chair:		Richard E. Lyon, PhD		Chair:		James Quintiere, PhD	
8:00-8:30		Deoxybenzoin-containing Polymers: Combining Tailored Polymer Architecture with Non-halogenated Materials <i>Todd Emrick, PhD</i> University of Massachusetts		1:30-2:00		Recent Developments in Microscale Combustion Calorimetry <i>Richard N. Walters, PhD</i> US Federal Aviation Administration Technical Center		8:00-8:30		Fire and Toxicity Test for Seats (Phase II: US ARMY CCDC Project on Seat Flammability and Toxicity) <i>James Quintiere, PhD</i> University of Maryland	
8:30-9:00		Effects of Thermal Conductivity on Flame Spread over Carbon-fiber Composites <i>Haiqing Guo, PhD</i> C-Far Services		2:00-2:30		Automated Characterization of Pyrolysis Kinetics and Heats of Combustion of Flammable Materials <i>Morgan C. Bruns</i> Virginia Military Institute		8:30-9:00		Flame Spread on Black Poly(methyl methacrylate) in Corner Configuration <i>Dushyant Chaudhari</i> University of Maryland	
9:00-9:30		Textile Heat Release Testing: Effect of Thermally Insulating Backing Materials <i>Alexander B. Morgan, PhD</i> University of Dayton Research Institute		2:30-3:00		Process Control Future State: How the Micro-Scale Combustion Calorimeter is Changing How Industry Characterizes Flammability Properties <i>John Harris, PhD</i> The Boeing Company		9:00-9:30		Assessment of FDS Unstructured Geometry Capability on FAA Boeing 747 Cargo Compartment Fire Tests <i>Marcos Vanella, PhD</i> University of Maryland / National Institute of Standards and Technology (NIST)	
9:30-10:00		BREAK		3:00-3:30		BREAK		9:30-10:00		BREAK	
10:00-10:30		The Effect of Phosphorus on Flame Retardancy of Plastics <i>Haiqing Guo, PhD</i> C-Far Services		3:30-4:00		Using Microscale Combustion Calorimetry as a Predictor for Radiant Panel Behavior of Insulating Microfiber Blankets <i>Frederick Vance, PhD</i> Aearo Technologies LLC, a 3M Company		10:00-10:30		Isokinetic Parameters for Ignition of Solids in Fire Models <i>Richard E. Lyon, PhD</i> US Federal Aviation Administration Technical Center	
10:30-11:00		Phosphorus Hydrazides - New Potential Flame Retardants for Epoxy-Based Materials <i>Alexander B. Morgan, PhD</i> University of Dayton Research Institute		4:00-4:30		Measuring Toxic Potency of Smoke Over a Range of Fire Stages Using Milligram Samples <i>Louise Speitel</i> US Federal Aviation Administration Technical Center		10:30-11:00		Analysis and Modeling of the UL-94V Test <i>Conor G. McCoy</i> University of Maryland	
11:00-11:30		TBD		4:30-5:00		TBD		11:00-11:30		Small Scale Fire Test for Component Substitutions in Aircraft Materials <i>Natallia Safronava</i> Technology and Management International, LLC (TAMI)	