## Fire Prediction Across Scales

**Monday, October 23rd – Union Theological Seminary**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>Sign-in</td>
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<tr>
<td>8:30 AM</td>
<td>Welcome and introduction</td>
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**Fire Prediction and Operational Needs**

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>9:00 AM</td>
<td>Matt Butler – A fire manager’s perspective on fire season potential based on climate, weather, and fire behavior predictions.</td>
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<tr>
<td>9:20 AM</td>
<td>Ed Delgado – Challenges facing wildland fire forecasters</td>
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<td>9:40 AM</td>
<td>Haiganoush Preisler – Statistical predictions of fire occurrence and spread</td>
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<tr>
<td>10:00 AM</td>
<td>George Milne – High performance wildfire prediction technology use in western Australia</td>
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<tr>
<td>10:20 AM</td>
<td>Karin Riley – Fire prediction and uncertainty across temporal and spatial scales</td>
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**Process-Based Fire Prediction**

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>11:00 AM</td>
<td>Mark Finney – Physical process in wildland fire spread at fine scales</td>
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<tr>
<td>11:20 AM</td>
<td>Rod Linn – Using coupled wildfire/atmosphere models to further to expand our understanding of wildfire behavior</td>
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<tr>
<td>11:40 AM</td>
<td>Ali Tohidi – Firebrand formation and transport, a critical mechanism of wildfire propagation</td>
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<tr>
<td>12:00 PM</td>
<td>Nicholas Nauslar – Improving lightning and dry lightning guidance with calibrated probabilities from regional and convection allowing ensemble model output</td>
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<tr>
<td>12:20 PM</td>
<td>Michael Gollner – Data-driven fire modeling</td>
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<td>12:40 PM</td>
<td>Lunch</td>
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**Seasonal Fire Prediction**

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>2:00 PM</td>
<td>Jim Randerson – Advances in global fire prediction on daily to decadal timescales</td>
</tr>
<tr>
<td>2:20 PM</td>
<td>Yang Chen – Improving experimental fire season severity forecasts in the Amazon</td>
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<tr>
<td>2:40 PM</td>
<td>Francesca Di Giuseppe – From weather to fire: from fire to weather</td>
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<tr>
<td>3:00 PM</td>
<td>Andrew Robertson – Current developments in sub-seasonal to seasonal forecasting</td>
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<tr>
<td>3:20 PM</td>
<td>Break</td>
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**Fire prediction for Risk Assessment**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>3:40 PM</td>
<td>David Caballero – Fire risk assessment across spatial scales in the WUI. Some examples of practical application in Europe</td>
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<tr>
<td>4:00 PM</td>
<td>Ross Bradstock – A probabilistic model to predict property loss from fires at fine temporal and spatial scales</td>
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<tr>
<td>4:20 PM</td>
<td>Adam Kochanski – An analysis of socio-economic impact of fire modeling and fire detection data</td>
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<td>4:40 PM</td>
<td>Break</td>
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<tr>
<td>4:50 PM</td>
<td>Panel Discussion</td>
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<tr>
<td>5:20 PM</td>
<td>Evening Poster reception</td>
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<td>7:30 PM</td>
<td>End of Day 1</td>
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Tuesday, October 24th – Davis Auditorium

**Pyrogeography 1**

9:00 AM  David Bowman – The role of pyrogeographic synthesis in the attribution of climate change to ‘unprecedented’ fire regimes: the case of the 2016 Tasmanian wilderness fires

9:20 AM  Katherine Glover – Vegetation and fire in the San Bernardino Mountains, southern California since 120,000 years BP: Insights and challenges for 21st century predictions

9:40 AM  Jed Kaplan – Fire and land cover change during the Maori colonization of New Zealand: Hypothesis testing with model simulations and charcoal data

10:00 AM  Rachel Loehman – Modeling ecological resilience and human-environment interactions in engineered landscapes of the prehistoric American Southwest

10:20 AM  Jennifer Marlon – Understanding fire activity outside the range of modern environmental conditions

10:40 AM  Break

**Pyrogeography 2**

11:00 AM  Leroy Westerling – TBD: climate change and fire in the western US

11:20 AM  Trent Penman – Non-linear changes to future fire in forests and grasslands

11:40 AM  Karen Short – Modeling synchronous large-fire activity across the conterminous U.S

12:00 PM  Nathan Mietkiewicz – Drivers of historic and future wildfire occurrence across the United States: the relative contribution of human ignitions vs climate to fire size and probability

12:20 PM  Lunch

**Human and Ecological Aspects of Fire Prediction 1**

1:50 PM  Winslow Hansen – A perfect storm: multiple stressors interact to drive postfire regeneration failure of lodgepole pine and Douglas-fir forests in Yellowstone

2:10 PM  Jacquelyn Shuman – FATES-SPITFIRE: Fire within a size-structured vegetation model

2:30 PM  Cristina Montiel-Molina – Fire scenarios in the Central Mountains Range (Spain): a multi-scale concept for integrated fire management in the context of global change

2:50 PM  Ryan Bart – Development of a coupled model for investigating the effects of forest management and climate on wildfire regimes in the western U.S.

3:10 PM  Break

**Human and Ecological Aspects of Fire Prediction 2**

3:30 PM  Erin Hanan – Effects of fire suppression and climate change on wildfire activity in the Pacific Northwest

3:50 PM  Ellie Graeden – Utilizing automated fire growth models to support private industry

4:10 PM  Maria Uriarte – Rural development and fires in the Peruvian Amazon

4:30 PM  Break

4:40 PM  Panel Discussion

5:10 PM  End of Day 2
Wednesday, October 25th – Davis Auditorium

Smoke

9:00 AM  Ruth DeFries – Human causes and consequences of fire
9:20 AM  Derek Mallia – Innovative approaches for modeling smoke impacts from prescribed burns and wildfires
9:40 AM  Charles Ichoku – Understanding present-day North American fires from satellite observations to enhance predictability
10:00 AM Rebecca Buchholz - Predicting atmospheric carbon monoxide over fire regions using climate indices
10:20 AM  Rizaldi Boer – Fire risk information system for managing land and forest fire in Indonesia
10:40 AM  Break

Global fire modeling and Intercomparison 1

11:00 AM  Stijn Hantson – The status of global fire modeling: Results from the Fire Model Intercomparison Project (FireMIP).
11:20 AM  Gitta Lasslop – The impact of fire on vegetation: model intercomparison of impacts in eight global process-based models and a statistical model
11:40 AM  Keren Mezuman – PyrE, an interactive fire module within the NASA-GISS Earth System Model
12:00 PM  Yongqiang Liu – Improving climate prediction by parameterizing fire-induced land-surface changes in Earth System models
12:20 PM  Lunch

Global fire modeling and Intercomparison 2

1:20 PM  Matt Jolly – Linking ecophysiology and vegetation dynamics to improve the wildland fire models
1:40 PM  Matthias Boer – A hydroclimatic model of global fire patterns
2:00 PM  Dominique Bachelet – The challenges of modeling fire: climate and CO2 effects can be simulated but human behavior and decisions are unpredictable. FireMIP will help give directions toward progress
2:20 PM  Break
2:30 PM  Panel Discussion
3:00 PM  Closing Remarks
3:20 PM  Conference End
Poster Presentations
Monday, October 23rd, Union Theological Seminary

- John Abatzoglou - Global patterns of interannual fire-climate relationships
- Israr Albar - Fire Prediction and Management in Sumatra, Indonesia during the 2015 El-Nino
- Muhammed Ali Imron - PeatFire: An Agent-based model for peat fire prediction in a protected area of South Sumatra Indonesia under weather uncertainties
- Niels Andela - Predicting human-driven changes in global fire activity
- Paulo Artaxo - Increasing deforestation in Amazonia and its effects on the forest carbon dynamics
- Marcus V. Athaydes Liesenfeld - Underground stem: A postfire resprouting advantage for palms in Amazon forest
- Akli Benali - How can satellite data improve our knowledge on large wildfires?
- Akli Benali - Evaluation of the Global Fire WEather Database (GFWED)
- Matthias Boer - Early warning system for unseasonal forest flammability
- Jiajue Chai - Tracking nitrogen oxides, nitrous acid, and nitric acid from biomass burning
- Alireza Farahmand - Using NASA Satellite Observations to Map Wildfire Risk in the United States for Allocation of Fire Management Resources
- Melanie Follette-Cook - Predictive Fire Emissions in the NASA GEOS-5 Earth System Model
- Emily Fusco - Modeling Detection Biases in Remotely Sensed and Agency Reported Fires in the U.S. 2003-2013
- Ellie Graeden - Planning for Growth in High Wildfire Risk Zones: A Risk Accumulation Model for the Homeowners Insurance Market
- Erin Hanan - Using remote sensing to account for disturbance history in process-based, carbon cycling models
- Hety Herawati - Tools for Assessing the Impacts of Climate Variability and Change on Wildfire Regimes in Forests
- Joshua Heyer - Exploring relationships between fire, climate, land-use, and vegetation in the southwestern Amazon near Noel Kempff Mercado National Park, Bolivia
- Maggie Hurwitz - Goddard Applied Sciences: Bringing NASA Goddard’s Earth Science Data Products and Resources to End Users
- Piyush Jain - The relationship between the polar jet stream and fire spread days in Alberta, Canada
- Kyu-Myong Kim - Seasonal-to-interannual variation in biomass burning over the contiguous United States
- Zhihua Liu - Global biophysical effects of forest fire differ by region
- Jan Mandel - Coupled fire-atmosphere-fuel moisture online modeling system WRF-SFIRE
- Stéphane Mangeon - Addressing the Fuel Consumption biases in Global Fire Models
- Nicholas McCarthy - Predicting pyroconvection: a challenge for fire management as well as fire research
- Taylor McCorkle - Communicating Fire Weather Risks at Short Lead Times using the High-Resolution Rapid Refresh Forecast Modeling System

- Douglas Morton - Seasonal to sub-seasonal predictions of understory fire risk in Amazon forests
- Nicholas Nauslar - An Impact-Based Decision Support Paradigm for National Weather Service Wildfire Forecast and Warning Services
- Jonathan Nichols - Climate, Fire, and Vegetation Control on Peat Carbon Accumulation in Borneo
- Sandra Oliveira - The social context of fire-affected areas. A first assessment regarding the extreme fire events in central Portugal (June 2017)
- Lesley Ott - Chemical weather forecasting of smoke events: lessons on predictability from NASA’s GEOS modeling system
- Xiaohua Pan - Investigation of Indonesian fires during 1979-2016: connection with the type of El Niño and phase of Indian Ocean Dipole
- Mark Parrington - Estimating and predicting fire emissions for operational forecasts of global atmospheric composition in the Copernicus Atmosphere Monitoring Service
- Scott Rabenhorst - Modeling Pyrocumulonimbus Blowups and Cloud-Aerosol Interactions
- Simin Rahmani - Predicting the pollution level from smoke plumes
- Steve Taylor - Wildfire Management Decision Making – Fast and Slow: A systems framework for wildfire management research
- Steve Taylor - Predicting Severe Wildfire Occurrence in Canada
- Fengjun Zhao - Shift of fire season from spring to summer in northeastern China under global warming