2021 SJSU Fire Weather Research Workshop

Speaker and Panelist Bios

Speakers

Matt Jolly, USFS, Missoula Fire Sciences Laboratory

William Matthew "Matt" Jolly is a Research Ecologist in the Fire, Fuel and Smoke Science Program of the US Forest Service, Fire Sciences Laboratory in Missoula, MT. He received a BA in Environmental Science from the University of Virginia and a PhD in Forestry from the University of Montana. He is the science lead for the US National Fire Danger Rating System and he is also the project administrator for the Wildland Fire Assessment System (WFAS). His research explores how live and dead wildland fuel characteristics vary across space and time and how these variations impact wildland fire potential. Ultimately, his work will lead to improved wildland fire danger and behavior prediction tools.

Joaquin Ramirez, Technosylva, Inc.

Joaquin is a wildland fire technologist, training to bridge the gap between the scientific and academic community and the worldwide user's community. During the last 25 years, he's been leading the Technosylva team, which has created advanced tools for intel support to leader agencies in US, Europe, and South America.

Jeff Mirocha, Lawrence Livermore National Laboratory

Jeff Mirocha is an atmospheric scientist in the Atmosphere, Earth and Energy Division at Lawrence Livermore National Laboratory, with a background in boundary-layer meteorology, mesoscale atmospheric dynamics, and numerical simulation methods. Dr. Mirocha's current research areas include geophysical turbulence, flow in complex terrain, and mesoscale-to-microscale atmospheric coupling, with a focus on renewable energy and wildfire applications. Dr. Mirocha is leading several projects to improve multiscale atmospheric simulation capabilities, including a coupled atmosphere-wildfire prediction framework to better understand fire spread, emissions, and potential mitigation pathways in areas of complex terrain and the wildland urban interface. Dr. Mirocha holds B.S. and B. A. degrees in Geography and Mathematics from Arizona State University, and M.S. and Ph.D. degrees in Astrophysical, Planetary and Atmospheric Sciences from the University of Colorado at Boulder.

Tim Brown, Desert Research Institute

Dr. Tim Brown conducts applied research and applications development at the Desert Research Institute (DRI) in Reno, Nevada. His primary academic interests include wildland fire-climate and fire-weather connections; the wildfire environment; applications development for wildland fire management planning, decision-making and policy; the interface between science and decision-making; and user engagement through the deliberate co-production of knowledge. Dr. Brown is Director of the Western Regional Climate Center, and established and directs the Program for Climate, Ecosystem and Fire Applications (CEFA) at DRI. He is graduate faculty in the Atmospheric Sciences Program at the University of Nevada, Reno, and quandom Monash University Adjunct in the School of Earth, Atmosphere and Environment, Science Faculty in Clayton, Victoria, Australia.

Brian Potter, U.S. Forest Service

Brian has been a research meteorologist with the Forest Service for 27 years. He began as a post-doctoral researcher in East Lansing, Michigan, studying weather patterns associated with large fires in the eastern United States. His work focused on non-fire disturbances to forests, such as tornadoes, wind storms, and thaw-freeze events in the late 1990s, before he moved back to examining fire-atmosphere interactions in 2000. In 2006, he transferred to the Pacific Wildland Fire Sciences in Seattle. His work now focuses on mesoscale- to synoptic-scale fire-atmosphere interactions, and communicating science to fire management.

Tom Rolinski, Southern California Edison

Tom is currently the Fire Scientist for Southern California Edison (SCE) one of the nation's largest utilities. In this role Tom is responsible for bringing together the latest science and technology to help build a comprehensive fire program for reducing wildfire risk across SCE's service territory. Prior to joining Southern California Edison, Mr. Rolinski worked for the federal government for over 25 years as a fire meteorologist. During the last 15 years, he became a recognized leader in California's fire program. His pioneering approach to fire meteorology and his collaborative spirit have led the way in developing new tools to assess wildfire threat across the state.

Jamie Lydersen, Cal Fire

Jamie is a Senior Environmental Scientist in the Fire and Resource Assessment Program at CAL FIRE. Her current work focuses on integrating climate data into the updated map of California's Fire Hazard Severity Zones and conducting research focused on fire ecology, fire weather and forest restoration, with an emphasis on scientific questions that can be applied to management. Jamie received her MS degree in Ecology at UC Davis and BS in Biology from UC Santa Cruz. Prior to joining CAL FIRE she held research positions at the USFS Pacific Southwest Research Station and UC Berkeley.

Tomasz Strzyzewski, IMGW, Poland

Tomasz Strzyzewski is a specialist at Institute of Meteorology and Water Management– National Research Institute in Poland (IMGW-PIB). Earlier he worked at Nicolaus Copernicus University in Torun, Poland as a assistant in field Meteorology and GIS. Then he worked in IMGW-PIB as flood modeling specialist. Now he is working at Centre of Numerical Weather Prediction - Department of Meteorological Analyses and Long-Range Forecasts where his point of interest are wind modeling, CFD modeling and forest fires.

Jason Sharples, University of New South Wales, Australia

Jason is Professor of Bushfire Science and leader of the UNSW Bushfire Research Group. His research interests include critical fire weather, bushfire risk management and firefighter safety, numerical simulation of wildfires, dynamic fire propagation and extreme wildfire development. He is currently the Project Leader of two Australian Research Council projects and two Bushfire and Natural Hazards Cooperative Research Centre projects. He is also a participant in several national and international research projects that involve research into various aspects of dynamic fire behaviour, fire-atmosphere interactions and extreme wildfire development. He is also a member of the ACT Rural Fire Service and has been actively involved with firefighter training and curriculum development at the State and National levels.

Mario Miguel Valero Pérez, San José State University

Dr. Valero is an Assistant Professor of Wildfire Remote Sensing in the Department of Meteorology and Climate Science at SJSU. He received his PhD from the Universitat Politècnica de Catalunya, in Barcelona, Spain, where he developed novel image processing tools for automating aerial monitoring of active wildfires. Additionally, he holds M.S. degrees in Aerospace Engineering, Biomedical Engineering and STEM Education. Dr. Valero has extensive experience in fire behavior measurement and simulation, with expertise in remote sensing, Earth observation, data-driven modeling, machine learning, computational fluid dynamics, cloud computing, high-performance computing and uncertainty quantification. Committed to providing high quality education, he is also interested in everything related to education research and teaching innovation.

Gregory Denton, Overwatch, Inc.

Greg is a passionate business leader responsible for the fire intelligence segment at Overwatch Imaging. He works to bridge the divide between engineers, academics, and end-users to develop innovative solutions in the field of remote sensing. Previously Greg held management positions with Quantum Spatial, helping utilities migrate to lidar based vegetation management, and manage non-asset based risk. He was served the BC Ministry of Forests as a Type 1 Heli-attack Firefighter.

Angel Farguell, San José State University

Dr. Angel Farguell is a post-doctoral research associate working at San José State University and the Wildfire Interdisciplinary Research Center. He holds a B.S. in Mathematics, an M.S. in Modeling for Science and Engineering, and a Ph.D. in Computer Science from the Universitat Autònoma de Barcelona (Spain). His main research interests focus on coupled atmosphere-fire modeling, statistical learning, remote sensing, and GIS. He is a co-developer of the coupled atmosphere-fire model WRF-SFIRE, as well as the fire forecasting system WRFx. He is currently working on projects applying machine learning methods to support fire-atmosphere simulations using satellite data.

James Haley, University of Colorado, Denver

James Haley is a current PhD candidate at the University of Colorado Denver studying applied mathematics under advisor Dr. Jan Mandel. James grew up in the foothills west of Denver in an area where wildfires were always a concern in the summer. His dissertation work centers around developing methods to use satellite fire observations to improve the forecast capabilities of the coupled atmosphere-fire model WRF-SFIRE. At the heart of his research is a new method for reconstructing the history of a wildfire from satellite observations. Applications of the work include initialization of fire models from an estimated fire history, data assimilation, and refining of estimates of fuel moisture content used by the fire burn model.

Mariel Friberg, NASA Goddard Space Flight Center

Mariel is a NASA Postdoctoral Program Fellow at Goddard Space Flight Center in the Climate and Radiation Laboratory. Her research focuses on investigating new wildfire observations from the emerging stereo wind and aerosol imaging techniques paring low Earth orbit (LEO) with geostationary (GEO) satellites and GEO with GEO satellites. Her current work comparing stereo observations directly with model simulations to diagnose the modeled plume injection/top height and wind velocity, and aerosol properties leverages her research experience with data fusion and constraining chemical transport model outputs for regional wildfire and air quality applications using satellite-, aircraft- and ground-based observations. She received her PhD and MS in Environmental Engineering and a BS degree in Civil Engineering from the Georgia Institute of Technology.

Branko Kosovic, National Center for Atmospheric Research

Branko is the Director of the Weather Systems and Assessment at the Research Applications Laboratory of the National Center for Atmospheric Research. Branko's expertise is in boundary layer meteorology with a focus on high-resolution simulations of boundary layer flows. He has been involved in research and development activities in atmospheric transport and dispersion, turbulence simulations and modeling for renewable energy applications, and wildland fire modeling. Branko led model development of the Colorado Fire Prediction System. He is currently working on extending multiscale modeling capabilities in numerical weather prediction models for wind and solar energy and wildland fire prediction applications.

Theodore M. Giannaros, National Observatory of Athens, Greece

Dr Theodore M. Giannaros serves as an Associate Researcher at the Institute for Environmental Research & Sustainable Development (IERSD) of the National Observatory of Athens (NOA) in Greece. His primary field of expertise is atmospheric modelling, with particular emphasis on numerical weather prediction (NWP) and regional climate modelling (RCM). He has been working with atmospheric numerical models for more than 10 years, focusing particularly on the development of tools and services that support the protection of the environment, life, and property. In recent years, he has been specialising in fire meteorology, fire spread prediction and the study of fire-atmosphere interactions. Within this context, he led the development of a novel fire spread forecasting system that currently supports operationally the Hellenic Fire Corps (HFC). His publication record includes 33 publications in international peer-reviewed scientific journals, which have attracted 511 citations (h-index=13). He has also given 14 talks in international and/or national scientific conferences, as well as 8 invited talks.

Jo Chatelon, University of Corsica, France

François Joseph Chatelon is an associate professor at the University of Corsica, France, where he got his PhD (1996). Prior to entering the field of wildland fire he worked in the areas of fluid mechanics and physical oceanography, solving the Navier-Stokes and shallow water equations. He is now involved in the forest fire team of the University of Corsica and the developer of the Balbi model, with its creator, Jacques-Henri Balbi. His four main areas of research interests are: (1) Development of a physical simplified surface fire spread model, (2) development of acceptable safety distance models to address firefighter safety zones, (3) investigations on fire eruption's occurring, and (4) investigations on the fuel moisture content threshold related to go or no-go fires.

Jean-Baptiste Filippi, University of Corsica, France

Jean Baptiste Filippi is a Researcher at CNRS since 2006. He received his Phd from the University of Corsica in 2003. He was a Japanese Society for the promotion of Science Post doctoral fellow at the University of Tokyo where he performed research on drifting seaweeds, using discrete events simulation. In 2005 he worked in data processing for the European Center for Medium Range Weather Forecast in Reading (UK). He is now focusing his research on forest fire and atmosphere simulation, uncertainty quantification and burn probabilities using deep learning, developing methods, softwares and frameworks (from raw data storage and retrieval to front propagation simulation and result analysis). Coordinator of two national projects on wildfire forecasting tools (including the current FireCaster program), he received the 2nd prize ATOS/Fourier in 2014 for his work on fire weather computation.

Adam Kochanski, San José State University

Dr. Adam Kochanski is an assistant professor at the Wildfire Interdisciplinary Research Center at SJSU. He received his M.Eng in Chemical Engineering and MBA from Technical University of Lodz (Poland) and Ph.D. in Atmospheric Sciences from the University of Nevada, Reno. His main research interests include fire-atmosphere interactions including air quality impacts of wildland fires. He is a modeler with extensive experience in running numerical simulations of fire, smoke, and regional climate on high-performance computing platforms. He is a co-developer of the coupled fire-atmosphere model WRF-SFIRE, the integrated fire and air quality system WRF-SFIRE-CHEM, as well as the fire forecasting system WRFX. He is one the modeling leads for the Fire and Smoke Model Evaluation Experiment (FASMEE), a member of the Rocky Mountain Center for Fire-Weather Intelligence (RMC) steering committee and an author of over 30 scientific publications.

Susan O'Neill, U.S. Forest Service

Susan M. O'Neill is an Air Quality Scientist with the USDA Forest Service Pacific Northwest Research Station, AirFire Team. She obtained her Ph.D. from the Laboratory for Atmospheric Research at Washington State University and began her Forest Service career in 2002 leading the development effort of the first version of the BlueSky smoke modeling framework. She then continued on to the USDA Natural Resources Conservation Service (NRCS) as part of their Air Quality and Atmospheric Change Team, and in 2012 re-joined the AirFire Team. Her research interests include fire emissions calculation; modeling smoke dispersion, transport, and chemical transformation; and exploring the application of satellite data to smoke and fire.

Derek Mallia, University of Utah

Dr. Derek Mallia is a research assistant professor in the Department of Atmospheric Sciences at the University of Utah. Before joining the faculty at the University of Utah, Dr. Mallia completed a postdoctoral program under the mentorship of Dr. Adam Kochanski. The general theme of Dr. Mallia's research revolves around using atmospheric models to better understand processes that occur within the boundary layer. Dr. Mallia's latest research has been centered around using atmospheric models to elucidate key processes that governs wildfire behavior and smoke dispersion. He is also interested in determining how climate change has exacerbated wildfires and how wildfire behavior and smoke dispersion could change under future climate scenarios. He will be speaking about how the WRF-SFIRE modeling system can be used to improve smoke forecasts.

Neil Lareau, University of Nevada, Reno

Dr. Lareau is an assistant professor in the Department of Physics at the University of Nevada, Reno. His research program leverages modern observing and modeling systems to advance our understanding of atmospheric dynamics of wildfire plumes, cumulus convection, and boundary layer processes, especially in mountain settings. Dr. Lareau's previous professional appointments include: Faculty at San Jose State University, post-doctoral scholar at Lawrence Livermore National Laboratory, and Post-Doctoral Scholar at San Jose State University. Dr. Lareau earned both MS and PhD degrees in Atmospheric Science from the University of Utah. He also holds an undergraduate degree (BFA) in Fine Arts from Carnegie Mellon University and was trained as a weather observer at the Mount Washington Observatory, NH

Klaus Scott, California Air Resources Board

Klaus Scott is a Staff Air Pollution Specialist in the Air Quality Planning & Science Division of the California Air Resources Board (CARB) in Sacramento, California. Klaus is the staff lead for developing CARB's Natural and Working Lands inventory of carbon stocks and stock-change (https://ww2.arb.ca.gov/nwl-inventory), and for developing wildland fire emission inventories for use in regional air quality modelling. Prior to joining CARB, Klaus worked at the USDA Forest Service, Pacific Southwest Research Station. Mr. Scott has a BA in Biology (George Mason University) and an MS in Atmospheric Science (UC Davis).

Panelists

Mark Finney, USFS, Missoula Fire Sciences Laboratory

Mark A. Finney is a Senior Scientist and Research Forester with the US Forest Service, Rocky Mountain Research Station, Missoula Fire Sciences Laboratory. He has worked at the Fire Laboratory since 1993 on fire behavior, fire growth modeling and risk analysis, and landscape fuel management. He leads a fire behavior research team to discover fundamental physical explanations for wildland fire behavior using laboratory and field-scale experiments. He was responsible for development fire models for the national Wildland Fire Decision Support System. He holds a Ph.D. in wildland fire science from Univ. California at Berkeley (1991), an M.S. in Fire Ecology from University of Washington (1986), and a B.S. in Forestry from Colorado State University (1984).

Mark Brown, Retired, Deputy Fire Chief, Marin County Fire Department

Chief Brown started his career as a volunteer firefighter in 1986 in Sonoma County. He was hired by the Marin County Fire Department as a Firefighter/Paramedic in 1991 and retired as the Deputy Fire Chief. After serving for nearly 30 years with the Marin County Fire Department, Mark retired in order to assume the position as Executive Officer for the Marin Wildfire Prevention Authority, a joint powers agency charged with increasing the safety of Marin's residents through vegetation management projects, evacuation route clearing, evacuation system improvements, public education and defensible space evaluations. Chief Brown served on a CAL FIRE Incident Management Team for 15 years as a Type I Operations Section Chief and was qualified as a Type II Incident Commander. Chief Brown was a founding member of the North Bay Incident Management Team, a Type III All-Hazards IMT in the San Francisco Bay Area and was the Program Manager and one of the Incident Commanders. Significant wildland fire incident deployments: Oakland Hills, Jones, Cedar, Butte Lightning Complex, Rocky, Valley, Soberanes, Detwiler, Nuns, Thomas, Camp, Kincade, August Complex, North Complex and Glass Fires.

Alex Hoon, Incident Meteorologist, NWS Reno

Alex Hoon is an Incident Meteorologist with the National Weather Service in Reno, Nevada. Alex graduated from Texas A&M University in 2003 and entered into the U.S. Air Force as a weather officer. After serving in the Air Force, he joined the National Weather Service. His passion is fire weather, the impact of weather events in causing extreme fire behavior, and providing on-site decision support to fire leadership and personnel. Alex is now a Lead Forecaster for NWS and has been an Incident Meteorologist for 10 years, deploying to numerous large high-impact wildfires across the Western States, including both the 2018 Carr Fire in Redding, California and the 2018 Camp Fire in Paradise, California. Alex also serves as the Fire Weather Program Manager for the Eastern Sierra, Lake Tahoe, and western Nevada region and is a weather instructor for Basic, Intermediate, and Advanced Wildland Fire Behavior courses. Outside of work, Alex loves to spend time with his wife and kids, serving with his church, or time outdoors trail running or hunting.

Tamara Wall, Desert Research Institute

Dr. Tamara Wall is an associate research professor at the Desert Research Institute in Reno, NV and deputy director of the Western Regional Climate Center. Additionally, Dr. Wall works with the Center for Climate, Ecosystems, and Fire Applications, and is a co-PI of California-Nevada Climate Applications Program (part of the national NOAA-sponsored Regional Integrated Sciences and Assessments network) and the Southwest Climate Science Center Consortium. Dr. Wall has worked extensively with stakeholders in California, Nevada and other regions of the West in co-produced climate science projects for the last nine years. Her research focuses on qualitative and quantitative social science research in climate information use by stakeholders, evaluating co-produced climate science, understanding the process of climate information dissemination and utilization for climate resiliency and adaptation in natural resource management agencies, and public and agency use of fire weather forecasts and fire behavior/fire danger information. Dr. Wall also has extensive expertise and training in organizational development, facilitation, graphic recording, workshop and meeting design, strategic planning, collaboration training and working with both small and large groups in-person and in virtual collaborative settings. Recent work has focused on developing expertise in applying change theory and frameworks to better support mixed research/practitioner teams address the evolving dynamics between research, social processes, and climate change adaptation actions.

Brian D'Agostino, San Diego Gas & Electric Company

Brian D'Agostino is the director of fire science and climate adaptation for San Diego Gas & Electric (SDG&E). As director, D'Agostino is responsible for meteorology, fire science, the Community Fire Safety Program, and climate adaptation initiatives. D'Agostino joined the SDG&E in 2009 and oversaw the development of the SDG&E's weather network, one of the nation's largest and most sophisticated weather networks. D'Agostino serves as an advisor and former chair of the American Meteorological Society's National Energy Committee and sits on several advisory committees specializing in climate adaptation and fire science. D'Agostino is a graduate of Plymouth State University with a bachelor of science in meteorology.