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NCAR Tip Sheet: Wildfire Science Background, Experts, and Web Sites

BOULDER—By the end of August, six million acres of mostly forest—an area roughly the size of New Hampshire—had been consumed by flames across the United States. With double the annual average in scorched acreage, U.S. damages have soared to \$1.5 billion so far—and large fires still burn in the West. Scientists and policy makers are taking a fresh look at how drought, weather, and wildfire interact and how society can plan for wildfire more effectively. This tip sheet lists experts specializing in wildfire topics and useful Web sites for more information. A fact sheet on the science and environmental impacts of wildfires can be found at www.ucar.edu/communications/factsheets.

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Wildfire science experts

Elliot Atlas 305-361-4128 eatlas@mail.vsmas.miami.edu

University of Miami

Specialty: Chemical composition of smoke plumes from forest fires and other biomass burning.

Janice Coen 303-497-8986 janicec@ucar.edu

Project scientist, NCAR

Specialty: Coen is a developer of the NCAR fire-behavior model, which captures the interaction of atmospheric and fire conditions. The model takes the highly local weather generated by a wildfire and feeds that "fire weather" back into the model. The results explain erratic and intense winds that drive fire spread and can complicate fire suppression.

Jack Cohen 406-329-4821 jcohen@fs.fed.us

Research physical scientist, Fire Sciences Laboratory, USDA Forest Service, Missoula, MT

<http://www.firelab.org/fbp/home.htm>

Specialty: Fire behavior at the urban-wildland interface, especially how homes ignite in wildfires, and resistance of exterior building materials to ignition. Use of research to aid community decision making for fire resilience. Cohen studies physical characteristics at the urban-wildland interface that pose new challenges for wildland fire managers, governmental organizations, and private property owners.

John Daily 303-492-7110 john.daily@colorado.edu

Professor of mechanical engineering, director of the Joint Center for Combustion and Environmental Research, University of Colorado

Specialty: The mechanics of wildfire, especially combustion, weather impacts on combustion, and the fuel breakdown process.

Hans Friedli 303-497-1395 friedli@ucar.edu

Senior research associate, NCAR

Specialty: Toxic emissions from wildfires. Friedli has measured significant levels of mercury in smoke as he flew over wildfires in research aircraft or burned forest vegetation in the laboratory.

Chris Geron 919-541-4639 geron.chris@epa.gov

Environmental scientist, U.S. Environmental Protection Agency

<http://www.epa.gov/appcdwww/apb/bio.htm#geron>

Specialty: The composition of emissions from biomass burning, including forest fires. With colleagues at NCAR he is building computer models and inventories to characterize the emissions from different evergreens and hardwood trees to see how much toxic emission per unit is emitted from each type of fuel.

Robert Harriss 303-497-8106 harriss@ucar.edu

Director, Environmental and Societal Impacts Group, NCAR

http://www.esig.ucar.edu/HP_harriss.html

Specialty: Designing decision support tools to aid community planners and decision makers in reducing wildfire risks; using satellite remote imaging to assess wildfire risks.

Rodman Linn 505-665-6254 rrl@lanl.gov

Team leader, Atmospheric Modeling Team, Los Alamos National Laboratory

Specialty: The development of a fully-coupled, physics-based computer model showing the interaction between the atmosphere and wildfire; coupling models that represent the essence of the physical processes that drive wildfires, such as combustion, turbulence, and convective and radiative heat transfer. Linn uses the models to examine complex wildfire behavior in the vicinity of rugged terrain, a mix of fuels, or variable winds.

Steven Running 406-243-6311 swr@ntsg.umt.edu

Director, Numerical Terradynamic Simulation Group, School of Forestry, University of Montana

<http://www.forestry.umt.edu/ntsg/>

Specialty: Using satellite remote sensing from the MODIS instrument to create a weekly picture of where the driest fuels are located around the globe. Running studies ecosystem dynamics and has worked extensively with U.S. Forest Service researchers based in Missoula and elsewhere.

David Schimel 303-497-1610 schimel@ucar.edu

Senior scientist, head of the Ecosystem Dynamics and the Atmosphere group, NCAR

<http://www.cgd.ucar.edu/edas/dave/cv.html>

Specialty: Interaction of Earth's ecosystems with the atmosphere, including the carbon cycle, a key component of the greenhouse effect; how fire suppression, wildland fire, and prescribed burning affect the amount of carbon dioxide in the atmosphere.

Scott Swerdlin 303-497-8378 swerdlin@ucar.edu

Software engineer, NCAR

Specialty: Program manager for NCAR's four-dimensional weather forecasting system, 4DWX, which provided detailed weather forecasting for major wildfires in Colorado and Wyoming, including the Hayman fire in Colorado.

Stanley Trier 303-497-8912 trier@ucar.edu

Project scientist, NCAR

Specialty: How nearby weather conditions may or may not be influenced by a large wildfire; thunderstorms, including large-system formation and how different environmental conditions influence the strength and character of precipitation systems; improving forecasts of thunderstorm formation over broad areas.

Richard Wagoner 303-497-8404 wagoner@ucar.edu

Program director, Wildland Fire R&D Collaboratory; deputy director, Research Applications Program, NCAR

Specialty: Integrating and coordinating research across institutions. The new Wildland Fire R&D Collaboratory (see "Web Sites" below) is designed to create an interactive international forum for exchanging information on R&D activities associated with wildland fire and for assessing research priorities in harmony with the National Fire Plan. The collaboratory will help accelerate technology transfer from the research community to the operational community.

World Wide Web sites for information on wildfires

[COMET Introduction to Fire Behavior: Topography, Fuels, and Weather](#)

3-D graphics and animations, audio descriptions and commentary provide an overview of fire ignition and spread. The content was originally developed for and distributed to operational weather forecasters by UCAR's Cooperative Program for Operational Meteorology, Education and Training (COMET).

[International Association of Wildland Fire](#)

IAWF is an organization of global wildland fire professionals. The site includes Wildfire magazine and the Journal of Wildland Fire.

[National Interagency Fire Center](#)

Current wildland fire updates, national fire maps, wildland fire statistics. See particularly the [NIFC Coordination Center](#) for information on specific geographic areas.

[National Wildland Fire R&D Collaboratory](#)

The site's Press Room section offers news releases from various sources, congressional news, Web links to relevant organizations, presentations by researchers on wildfire, and a list of current research papers.

[UCAR Fact Sheets: Wildfire](#)

Background for reporters and the public on the science and environmental impacts of wildland fires.

[USDA Forest Service Fire & Aviation Management News and Information](#)

Information on fire management on public lands, including current fire activity, fire weather reports, closures and restrictions, and fire news.

[U.S. National Fire Plan, 2001](#)

Presents a collaborative framework for managing impacts of wildfires on communities and the environment. The plan addresses wildland fire, hazardous fuels, restoration, and rehabilitation. The site includes a glossary of fire terms and an acronym list.

-The End-

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Prepared for the web by Carlye Calvin

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