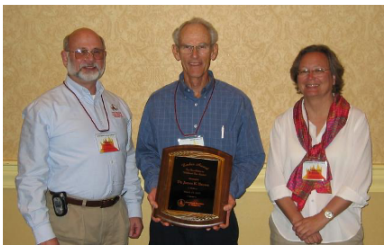
EMBER AWARD

FOR EXCELLENCE IN WILDLAND FIRE SCIENCE

Award History

The purpose of the “Ember Award” is to recognize sustained excellence in wildland fire research and to encourage innovation, exploration, application, and dissemination of important research results. The name “Ember” reflects the fact that research and science often move slowly, and their benefits or impacts may not be apparent for years. The award was established to recognize sustained and excellent research contributions to wildland fire science, innovative solutions to important wildland fire challenges, and effective and appropriate communication of wildland fire science and research results.

Award Recipients

2006	Dr. Frank Albini
 *IAWF President Chuck Bushey, Dr. James K. Brown, and Elizabeth Reinhardt*	During the 1st Fire Behavior and Fuels conference in Portland in March, 2006, the IAWF presented the first Ember Award for excellence in wildland fire science posthumously to Dr. Frank Albini who was a fire behavior scientist at the Missoula Fire Sciences Lab.

2007	Dr. James K. Brown

Jim earned his bachelor's degree from the University of Minnesota in 1960, followed by a master's from Yale in 1961 and a Ph.D. from the University of Michigan in 1968, all in Forestry. He conducted research on fuel properties and fire-danger rating systems with the U.S. Forest Service from 1961 to 1965, then moved to the Intermountain Fire Sciences Laboratory in Missoula, Montana, focusing on fuels inventory and prediction. From 1979 to 1995, he led a research unit on prescribed fire and its effects, emphasizing fuel consumption, fire ecology, and computer systems for fuel prediction. He authored over 100 technical articles and received the Forest Service's Superior Science Award in 1992 for his influential research. Jim's work intertwined fire effects and behavior, setting standards in his field and contributing to current fire behavior models.

2010	Noel Phillip (Phil) Cheney

With over 40 years of experience, Cheney significantly contributed to wildland fire management and community safety through his extensive research, public education, and innovative tools for fire management authorities. His achievements include authoring over 50 scientific articles, leading the CSIRO bushfire research team for nearly three decades, and mentoring future fire scientists. Recognized with multiple awards, including the Australian Public Service Medal, Cheney's work has shaped policies and practices in fire management both nationally and internationally.

2012	Charles E. Van Wagner

Dr. Van Wagner had a distinguished 30-year career with the Canadian Forest Service as a senior forest fire research scientist, where he became a leading figure in fire research both nationally and internationally. His most notable achievement was the development of the Canadian Forest Fire Danger Rating System (CFFDRS), which has been a cornerstone of fire management in Canada since 1970 and has influenced various countries worldwide. Key components of this system, such as the Fire Weather Index (FWI) and Fire Behavior Prediction (FBP), were developed under his leadership and vision, earning him significant recognition in the scientific community and contributing lasting value to fire management practices.

2013

Mr. Richard C. Rothermel

Richard Rothermel retired from the U.S. Forest Service in 1994 after a thirty-three-year career studying the behavior of fire. For twenty-seven of those years, he was project leader of the Fire Fundamentals Project at the Northern Forest Fire Laboratory in Missoula, Montana, studying and modeling the behavior of fire. The lab had just been completed the previous year and his knowledge of aerodynamics was put to the test setting up the wind tunnels and combustion lab for fire experiments. Working with Hal Anderson, they developed fuel arrays and instrumentation tailored for the study of fire in a wide range of fuel and atmospheric conditions. Using an engineering approach, Rothermel sought to extend research results into forms that were useful in the field and for fire management purposes. The subsequent mathematical models enabled him and his team to develop nomograms, calculator chips, and computer programs tailored for operational use.

2016

Dr. Kevin Tolhurst

Dr. Kevin Tolhurst, AM, Associate Professor, Fire Ecology and Management, Department of Forest and Ecosystem Science, University of Melbourne.

Kevin has developed a professional reputation by providing expert advice on fire behaviour and fire suppression strategies at major bushfires. Some examples include the Black Saturday fires in Victoria in 2009, and the Great Divide Fires in 2007. In 2015, Kevin was made a Member of the Order of Australia in recognition of his contribution to fire science and the community over a long period. Kevin has developed and taught a number of fire related subjects at undergraduate and post-graduate level as well as a national Fire Behaviour Analyst course for technical specialists in the fire and land management agencies. Kevin's current research activities are centered around developing and applying a bushfire risk management decision support systems. He has established a group of fire scientists in the School of Ecosystem and Forest Sciences with a range of research, fire, land management and teaching skills.

2017

Brian Stocks

Brian Stocks, B.J. Stocks Wildfire Investigations Ltd. Sault Ste. Marie, ON, Canada.

Brian has had a remarkable career in wildland fire science and management, distinguished by his prolific research output and dedication to practical applications for fire management agencies. He achieved a senior position as a Research Scientist in the Canadian government, an impressive feat for someone without a doctoral degree. His contributions include over 190 scientific papers, 20 book chapters, and editorial roles in various scientific journals. Throughout his career, Brian has received multiple awards, highlighting his commitment to advancing the field and effectively communicating scientific findings to the global wildland fire community.

2018

Dr. Marty Alexander

Dr. Marty Alexander has had an illustrious 40-year career in the field of wildland fire, establishing himself as a leading expert through extensive research and collaboration across the globe. With over 350 publications, including 61 peer-reviewed articles and 5,634 citations, he has significantly influenced wildland fire policies and practices. Notable accomplishments include co-developing the Canadian Forest Fire Behavior Prediction System and popularizing innovative models for predicting fire behavior. He has delivered around 150 invited lectures and received numerous prestigious awards, including the Canadian Forestry Achievement Award, affirming his impact on fire science and management both nationally and internationally.

2019	Dr. Wendy Anderson
	Dr. Anderson has made significant contributions to wildland fire science, particularly in fuel assessment and fire behavior, through her extensive research and publications on fire propagation and fuel dynamics. Since earning her PhD in 1987, she has fostered an international community of fire behavior researchers and has mentored many current leaders in the field. Her short courses in Portugal helped clarify complex research for early career scientists. Anderson also played a vital role in bridging scientific research with the practical needs of fire and land management agencies in Australia and New Zealand. Even after retiring from the University of New South Wales, she continues to advance the field through mentoring and advising, and her work has been pivotal in enhancing fire prediction capabilities, ultimately improving safety for firefighters and the public.

2019	Dr. Mark Finney
	Research Scientist, U.S. Forest Service. Missoula Fire Sciences Laboratory. Missoula, MT. Dr. Mark Finney is a prominent figure in wildland fire science, renowned for his groundbreaking research in fire behavior and the development of FARSITE, a leading wildfire behavior model used globally by forestry and firefighting agencies. His work has transformed fire behavior analysis from tedious manual processes to advanced spatial modeling, significantly enhancing fire management strategies. In addition to FARSITE, he has co-created FlamMap, led the development of the Wildland Fire Investment Planning System, and contributed to the Fire Spread Probability Model. Finney's ongoing research aims to improve understanding of complex fire behaviors, further advancing wildland fire science and management practices worldwide.

2019	Roger Ottmar
	Roger Ottmar has delivered actionable wildland fire science for over 35 years, which has enormous benefits for the wildland fire system. He has led national programs that have resulted in 1) 19 volumes of the wildland fuels photo series (digital and hardcopy); 2) operational fuel consumption and emission production models; 3) the Fuel Characteristic Classification System (FCCS), and 4) assessing firefighter exposure to smoke. Ottmar is the original designer and project lead for the Fuel Characteristic Classification System and the CONSUME application currently in use by land managers across the country for building fuel beds and modeling fuel consumption and emissions from wildland fire.

2020	Dr. David L. Martell
	For 45 years Dr. David Martell has been a passionate and dedicated member of the wildland fire science and management community. Dr. Martell is recognized as a synergistic force for his work in operations research, renewable resource management and forest fire science, and for his contributions to the development of innovative fire occurrence prediction modelling. One of Dr. Martell's seminal research projects involved the development of an initial attack simulation model which strongly influenced the Province of Ontario's decision to expand their air tanker fleet. This decision led to the development of the Level of Protection Analysis System, which allows the structured assessment of the outcomes and costs associated with alternative fire management policies, budgets, and suppression resource mixes, and has been adapted for use by several Canadian fire management agencies.

2021	Dr. Penny Morgan
	Penny Morgan, has made significant contributions to wildland fire research and education throughout her 35-year career. Her expertise in fire ecology, landscape ecology, and conservation biology has led to groundbreaking achievements, including over 85 peer-reviewed articles and the development of the first degree programs in Fire Ecology and Management in the U.S. A dedicated mentor, she has guided numerous students and has received multiple awards for her teaching excellence. Beyond her academic accomplishments, Penny is a trailblazer and role model for women in fire science, exemplifying a commitment to outreach and professional service within the community.

2022	Prof. Domingos Viegas
	Dr. Domingos Viegas is a leading figure in wildland fire science, contributing to fire behavior, danger assessment, and firefighter safety. A professor at the University of Coimbra for nearly 40 years, he mentored numerous researchers and facilitated global collaborations. He founded ADAI and the Forest Fire Research Laboratory, advancing fire dynamics research. With over 150 publications, his work shaped fire spread modeling and fire danger rating systems. He organized the International Conference on Forest Fire Research, investigated wildfire entrapments, and received the IAWF Wildland Fire Safety Award. Even after retirement in 2020, he continues to support fire science research and policy, earning the prestigious IAWF Ember Award.

2023	Dr. David Calkin
	Dr. David Calkin is a leading expert in wildland fire risk management, significantly improving decision-making, efficiency, and firefighter safety. He co-developed the Wildland Fire Decision Support System (WFDSS), the primary tool for managing large wildfires in the U.S. As leader of the Wildfire Risk Management Science Team, he has advanced fire analytics and pre-fire planning strategies. His contributions to the Forest Service Risk Management Assistance Program have enhanced structured decision-making tools. He also played a key role in wildfire response risk assessment during the COVID-19 pandemic, shaping the future of fire management.