



International Association *of* Wildland Fire

Early Career Award in Fire Science

2016 Recipient

Dr. Guillermo Rein, Senior Lecturer, Imperial College London, UK

Dr. Rein is a prominent fire behavior scientist, studying ignition, combustion emission, smoldering and interactions of fires and ecosystems. At this early stage of his career, his greatest contributions have been in the area of smoldering wildfires, where he has revolutionized the experimental and numerical description of these fires, translating science from engineering to applications such as fire history, emissions and climate change. This work has been published in over 67 journal papers, receiving more than 1700 citations throughout his short career. Among these, 17 journal papers and 6 keynote lectures have focused specifically on wildland fires.

Dr. Rein was first introduced to the subject of wildland fires by Professor Scott Stephens in his course Fire Ecology at University of California, Berkeley.

Immediately following his PhD on computational smoldering combustion (graduated in Dec. 2005), he began his early research career on wildland fires as a member of the large international

consortium, Fire Paradox (EU FP7) in 2006. Since then, he became a leader in the emerging field of smoldering wildfires, relating their effects to carbon emissions, fire ecology, and climate change. The impact of his work in both the combustion and geoscience communities has been equally impressive and measurable. The results of his wildfire work have been published in 2 book chapters, the International Journal of Wildland Fire, the Proceedings of the National Academy of Sciences (PNAS), Nature Geoscience and awarded twice the Distinguished Paper Awards (2009 and 2013) in the Proceedings of the Combustion Institute.



His research contributions have also impacted wildland fire safety through: (1) pioneering understanding peat fires whose emissions greatly impact global carbon emission and health, (2) developing techniques and improving understanding of the flammability of live and dead fuels, and (3) model development on improved forecasting for wind-driven wildland fires. Besides specific research contributions, his multidisciplinary research approach has brought together many dissimilar fields such as ecology, geoscience, fire protection engineering, and combustion to study wildland fires. This approach has spread throughout the communities he has worked with, including 5 PhD students and 2 MSc students, continuing his legacy of multidisciplinary wildland fire research. Through these ongoing research activities, he is determined to grow powerful modelling capabilities that can meet the needs of an increasingly sophisticated field of fire management and also to provide better estimations of global greenhouse gas emissions from wildfires in various ecosystems. Most recently, he was invited by the Editors of PNAS to write a commentary on recent scientific discoveries in wildland fire spread (doi: 10.1073/pnas.1512432112).

In addition to these scientific contributions, he has been an important proponent of enhancing collaboration between the wildland fire community and traditional urban fire research. As Editor-in-Chief of Fire Technology, he has been actively promoting the number of papers in wildland fires, both increasing visibility within the field and soliciting multidisciplinary contributions. Four special issues on wildland fires, especially at the intersection of the Wildland Urban Interface (WUI) have been published during his tenure. He is also a member of the board of directors of the IAWF and a member of the management committee of the International Association of Fire Safety Science (IAFSS). He has also been active in wildfire international conferences such as Int. Conference on Forest Fire Research (ICFFR), Fire Effects on Soil Properties (FESP), and General Assembly of European Geosciences Union (EGU) to bridge the gap between geoscience and wildland fire safety. He has shared the results of his research and thoughts on international media, including the New York Times, BBC, and DotEarth.

There is no doubt that through his multidisciplinary contributions, Dr. Rein has begun to deepen our understanding of wildland fire and improve worldwide wildland fire safety. Most importantly, Dr. Rein has been an emerging force for change that is paying dividends through a plethora of multidisciplinary collaborations across Europe, America and Asia.

Short Biography: Dr. Guillermo Rein first studied fire at ICAI Universidad Pontificia Comillas, Spain (MEng, 1999). After completing his MSc (2003) and PhD (2005) on smoldering fires at the University of California, Berkeley, he worked at the BRE Centre for Fire Safety Engineering at the University of Edinburgh as a Lecturer (2006-2011) and Senior Lecturer (2011-2012). Recently, he joined Imperial College, London as a Senior Lecturer (2012-2015) and Reader (previous step to full Professor) in Thermal Energy (2015). Since 2013, he has been the Editor-in-Chief of Fire Technology, not only multiplying the journal impact factor by 10, but also boosting the prevalence of wildland fire topics.

Guillermo will receive the award at the 2nd International Smoke Symposium in Long Beach, California November 14-17, 2016