

24th New Phytologist Symposium

Plant respiration and climate change: scaling from mitochondria to the globe

St Hugh's College, University of Oxford, UK

11–14 April 2010



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Phytologist

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Symposium scope

Climate-mediated changes in plant respiration are now accepted as an important component of the biosphere's response to global climate change. Each year, whilst producing the energy and carbon intermediates necessary for biosynthesis and cellular maintenance, plant respiration releases ten times as much carbon dioxide into the atmosphere than does the burning of fossil fuels. Variations in rates of plant respiration (e.g. due to climate and/or genotypic differences in energy demand) thus have the potential to affect the functioning of individual plants and ecosystems, and the extent to which atmospheric CO₂ will be sequestered by the terrestrial Biosphere.

In recent years, much has been learnt about the importance of plant respiration for ecosystem and Earth system functioning, the underlying mechanisms responsible for variability in rates of respiration, and the roles respiration plays in helping plants survive stressful environments. There has also been growing interest in understanding the extent to which scaling relationships can be used to predict variations in plant respiration. However, compared to the relatively comprehensive understanding of photosynthetic metabolism, we still lack basic information on key determinants of respiration in photosynthetic and non-photosynthetic plant organs. Moreover, our ability to predict the scale and magnitude of future rates of respiration remains limited. Dealing with such issues requires a dialogue between researchers working over a wide range of spatial and temporal scales. The goal of this meeting will be to act as a catalyst for future cross-discipline research by bringing together plant biologists and modellers working on respiration at the molecular, cellular, whole organism and ecosystem levels. In doing so, the meeting will provide an opportunity to significantly improve our understanding of this key metabolic process.



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Symposium format

The symposium will take place over three and a half days at St Hugh's College, Oxford, UK. Over 20 talks will form the basis of discussion at what will be a relatively small meeting (up to 120 participants). Following each 30-minute talk there will be 10-minutes for questions and discussion. In this way we hope to provide a lively forum for exchanging ideas and discussing new approaches. There will be poster sessions and a conference dinner on the Tuesday evening.

Confirmed speakers

Owen Atkin ANU, Canberra, Australia
Margaret Barbour Landcare Research, Lincoln, New Zealand
Hans-Peter Braun Leibniz Universität, Hannover, Germany
Nina Buchmann ETH Zürich, Switzerland
Alisdair Fernie Max Planck Institute, Golm, Germany
Alastair Fitter University of York, UK
Jaume Flexas Universitat de les Illes Balears, Palma, Spain
Kevin Griffin University of Columbia, USA
David Macherel Université d'Angers/INH/INRA, France
Harvey Millar UWA, Perth, Australia
Sandra Oliver CSIRO Plant Industry, Canberra, Australia
Kurt Pregitzer University of Nevada, USA
Peter Reich University of Minnesota, USA
Miquel Ribas-Carbo Universitat de les Illes Balears, Palma, Spain
Stephen Sitth University of Leeds, UK
Lee Sweetlove University of Oxford, UK
Guillaume Tcherkez Université Paris XI, France
Robert Teskey University of Georgia, USA
Mark Tjoelker Texas A&M University, USA
Susan Trumbore University of California-Irvine, USA
Matthew Turnbull University of Canterbury, New Zealand
Jim Whelan UWA, Perth, Australia
Lisa Wingate INRA-Ephyse, France

Organisation

Owen Atkin, ANU, Canberra, Australia
Harvey Millar, UWA, Perth, Australia
Matthew Turnbull, University of Canterbury, New Zealand

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New Phytologist Trust

The New Phytologist Trust is a non-profit making organisation dedicated to the promotion of plant science.

Complete details and registration at
www.newphytologist.org