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The dark side: predicting global variations in leaf respiration

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Slatyer Seminar Room R.N. Robertson Building (Bldg. 46), Linnaeus Way, ANU



Leaf respiration plays a vital role in regulating ecosystem functioning and the Earth's climate. Because of this, it is imperative that that Earth-system, climate and ecosystem-level models be able to accurately predict variations in rates of leaf respiration. In the field of photosynthesis research, the F/vC/B model has enabled modellers to accurately predict variations in photosynthesis through time and space. By contrast, we lack an equivalent biochemical model to predict variations in leaf respiration. Consequently, we need to rely on phenomenological approaches to model variations in respiration across the Earth's surface. Such approaches require that we develop a thorough understanding of how rates of respiration vary among contrasting genotypes (G), the extent to which respiration is sensitive to environmental (E) gradients, and whether there is a GxE interaction determining variations in leaf respiration. Dealing with these issues requires that global data sets be assembled on rates of leaf respiration in biomes across the Earth's surface. However, until recently such data was not available. In this talk, I will outline initial steps that have been taken by a consortium of plant ecophysiology groups in Europe, North America and Australasia to address this deficiency. Examples of G, E and GxE effects on leaf respiration will be discussed.

Presented by

Research School of
Biology

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This lecture is free and open to the public

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<http://biology.anu.edu.au/News/events-ps.php>

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