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Mechanisms of rapid evolution in novel and changing environments

Friday 14 December 2012 1pm

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Gould Seminar Room (Room 235) Gould building, 116 Daley Road, ANU



An essential component of deciphering the impact and long-term consequences of changing climatic conditions is understanding how organisms are able to respond to the environment. While studies interested in adaptation have focused on DNA sequence variation, and the assumption that trait variation is based on sequence variation, there is now pressing need to explore the role of epigenetic processes. Epigenetic effects can result in heritable, novel phenotypes even without variation in DNA sequence and could therefore provide an unappreciated source of response. The implications of epigenetic effects for the evolution of plant characteristics are just beginning to be explored, but epigenetic variation may expand the ecological and evolutionary options of plant and animal species in the face of rapid climate change. I will describe several approaches that my lab group is taking to explore the potential role of epigenetic processes using the model plant

Arabidopsis thaliana and the worldwide invasive plant *Fallopia japonica* and the Australian native *Wahlenbergia ceracea*. Combined these studies should enhance our understanding of how epigenetic variation may be shaped by environment and contribute to adaptation.

Presented by

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