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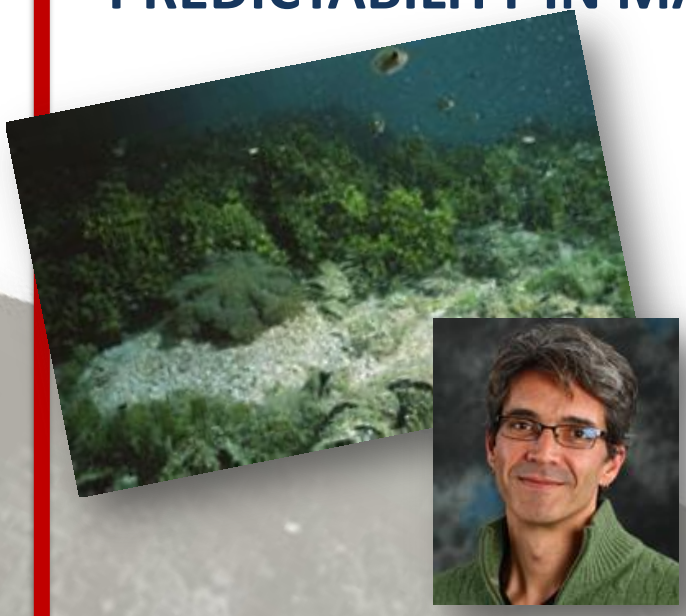
Department of Biological Sciences

NUS National University of Singapore

Monday, 23 April 2012 | 4pm | DBS Conference Room 2

Hosted by Professor Rudolf Meier

COMPARATIVE BIOGEOGRAPHY: CHANCE AND PREDICTABILITY IN MARINE BIODIVERSITY



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It is a truism that each species has its own unique history of lineage and of place, but to what extent do contingency and chance preclude general evolutionary ecological theory? Long-standing tropes distinguish marine from terrestrial systems in terms of geographic patterns of speciation, species' ranges, the degree to which populations are 'open' and thus to which gene flow is the predominant mechanism structuring communities and populations; and yet even in marine systems, dispersal potential as a function of pelagic duration confers very low predictability of gene flow. Thus, the influences of environment and chaotic genetic patchiness, as two examples of contingency and chance, seem strong.

However, some of these conclusions contradict theory that has no obvious exceptions, and so we should perhaps entertain the idea that these conclusions may be artefacts. For example, many studies of dispersal have ignored the potential effects of population size and fecundity on gene flow. In this talk I will compare sympatric sister species, synchronously-diverging co-distributed taxa, and species inhabiting marine lakes. Each of these studies suggests predictable relationships in biogeography and so hint at general 'laws'. I will finish by briefly describing our plans to distinguish the major mechanisms of evolution and the relative influences of intrinsic vs. extrinsic and deterministic vs. stochastic processes in marine lakes.

Artwork by Ann Nee, DBS, NUS