



# CDB SEMINAR

## Marcelo Sánchez

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Tuesday, July 26, 2011 <Date revised>

16:00~17:00 C1F CDB Auditorium

### The contributions of palaeontology to the study of development in a molecular world

#### Summary

Evolution happens in deep time, so if we wish to understand the evolution of form in organismal diversity, it would be paramount to examine the contributions that fossils can make to this task. A review of published literature, summarized in a web-database, shows that palaeontological data can address mostly late aspects of ontogeny, with palaeohistology its fastest growing field. Indirect information from fossils, even with a uniformitarian approach, reveals developmental novelties. Examples include mechanisms of skeletal mineralization, somitogenesis and Hox-gene expression domains, and patterns of fish squamation. Different ways to develop bone compactness, as in some semi-aquatic extinct marine reptiles and recent ones, are yet another example of plasticity in face of the adaptation/constraint dichotomy. Comparative ontogenetic data reveal that allometric patterns of growth are not simply 'constraints' but rather evolve largely coupled with ecological demands, as in the morphological radiation of rodents.

#### Host:

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