Fall Research Seminar 2014

Departments of BIOLOGICAL & BIOMEDICAL Sciences

Ecology & Evolutionary Studies

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November 17, 2014

4:00 pm

Irvine 159

SUCKERS, FINS, AND LEGS:

Insights into The Evolution of Functional Diversity

The functional capabilities of animals are an important aspect of their diversity. What is the scope of this diversity, and how does it evolve? This seminar will present studies on three primary systems that explore these questions. First, I will compare the margins of safety against failure in the limb bones of major clades of vertebrates (from salamanders to mammals), showing how such safety factors have changed through evolution, and how this knowledge informs understanding of the evolution of upright limb posture in the fossil ancestors of mammals. Second, I will describe studies of waterfall climbing in Hawaiian stream fishes that document functional evolution at the population scale. Finally, I will use studies of mudskipper fishes moving over land to gain insight into why animals with limbs, rather than fins, were ultimately more successful in the evolutionary invasion of land. Together these studies illustrate, at a range of scales, how biomechanical analyses can give insight into the origin of an important component of biodiversity.

SPEAKER:

Dr. Richard W. Blob, Ph. D.
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