



Department of Biomathematics Seminar Series:  
Frontiers in Systems and Integrative Biology

# Temperature Dependency of Energy and Mass Fluxes in Dynamic Energy Budget Theory



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**ABSTRACT:** Dynamic Energy Budget (DEB) theory is a process based theory that describes the rates at which an organism acquires resources from the environment and subsequently utilizes the energy and nutrients therein for production and maintenance. The core model covers all life stages of heterotrophic organisms with just 3 state variables and 12 parameters. Despite its focus on processes, the theory currently describes the impact of temperature on the dynamics of energy acquisition and allocation in a purely descriptive manner. In order to improve realism in the representation of temperature effects in DEB theory, I am using formalism from complex network theory. Before presenting this work in detail, I will survey the implications of the theory for seemingly unrelated biological phenomena, such as body-size scaling relationships, symbiogenesis and toxic effects.

Host: Van Savage, Ph.D.

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