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The Ecology, Evolution, Environment & Behavior UZH / ETH Joint Seminar Series

Biodiversity's interactome: functional patterns in multi-specific assemblages of plant-animal mutualisms

	Seventh Christine Mueller Lecture in Ecology and Environmental Studies
Speaker:	**Prof. Pedro Jordano** Integrative Ecology Group, Estación Biológica de Doñana, EBD-CSIC, Sevilla, Spain https://ebd10.ebd.csic.es/
Date/Time:	Thursday, 2018-03-29 15:00 to 16:00
Place:	Y15-G-40/UZH Irchel Winterthurerstr. 190;8057 Zürich
Access:	only intern
Host:	Jordi Bascompte, UZH

Abstract:
No single species on Earth persists without interacting with other species. Interspecific interactions take a tremendous variety of forms in nature and have pervasive consequences for the dynamics and evolution of species. This complex web of biotic interactions among species is biodiversity's interactome: the whole suite of ecological interactions among species that support the Web of Life by providing key functional links among species. Quantifying and characterizing this interactome is urgent and demands that a large fraction of these interactions be experimentally or computationally probed. This is challenging and very difficult, as rapid and effective actions for conservation and restoration of human-disturbed ecosystems urgently require the identification of the minimum amount of complexity that has to be restored in order to guarantee ecosystem persistence. Consider how the number of actual pairwise interactions among species in local assemblages scales with species richness in real plant-animal interaction webs. These real ecological systems would be within the range of n= 103-105 or even n= 104-106.5 component species, depending on spatial scale when we move from local to regional and up to continental spatial scales. To fully quantify the size of these interactomes we need to focus on what we know about the macroscopic properties of complex ecological interaction networks. We need new approaches based, on one hand, on the characterization and identification of forbidden links, the characterization of functional modules and compartments, and on exploring new ways to assess how complementary or redundant are ecological interactions from a functional viewpoint. I discuss how to map distinct ecological functions onto the link patterns determined for plant-pollinator and plant-frugivore networks. Most recent studies of plant-animal interaction networks have focused on frequency of interaction to map interaction patterns and to estimate interaction strength; this "frequentist" approach, however, may miss important aspects when the outcomes of an interaction are measured in relation to an specific ecological service.

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