

# Cooperation in the Global Commons

S. Levin

*Princeton University. USA*

Ecological and economic systems are alike in that individual agents compete for limited resources, evolve their behaviors in response to interactions with others, and form exploitative as well as cooperative interactions as a result. In these *complex adaptive systems*, macroscopic properties like the flow patterns of resources like nutrients and capital emerge from large numbers of microscopic interactions, and feed back to affect individual behaviors. In this talk, I will explore some common features of these systems, especially as they involve the evolution of cooperation in dealing with public goods, common pool resources and collective movement. I will describe examples from bacteria and slime molds to vertebrate groups to insurance arrangements in human societies and international agreements on environmental issues.