



# NIMBioS

National Institute for Mathematical  
and Biological Synthesis

## “Global patterns of species ranges and speciation”

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3:30 pm\*, Room 403, Blount Hall, 1534 White Ave.

The exact nature of the relationship between geographical ranges and speciation is not very obvious: the factors that promote larger ranges, such as high dispersal abilities and broad niche widths should render species insensitive to barriers, which should damp speciation. However, large ranges not only increase the likelihood of encountering different habitats, but they could also mean larger population sizes allowing for accumulation of advantageous mutations; both of these factors could increase the probability of speciation. On the other hand, species with low dispersal abilities or narrower niche widths tend to have more fragmented populations, which should render them more prone to speciation. In this talk, I will introduce and present preliminary data from a large-scale, spatially explicit, individual-based model addressing this relationship between species ranges and speciation. Our model makes predictions on speciation rates with different dispersal ranges, trade-offs, and habitat fragmentation, while successfully capturing the expected patterns on time to speciation and species range size distributions.

*\*Join us for refreshments in the NIMBioS Lobby at 3 pm*