Natural Product Drug Discovery in the Genomic era:
Molecular genetic mining of the *Aspergillus* secondary metabolome

The first part of the talk will focus on our efforts in genome mining of fungal natural products. The recently sequenced genomes of several *Aspergillus* species have revealed that these organisms have the potential to produce a surprisingly large range of natural products, many of which are currently unknown. We have found that *A. nidulans* produces emericellamide A, an antibiotic compound of mixed origins with polyketide and amino acid building blocks. Additionally, we describe the discovery of four previously unidentified, related compounds that we designate emericellamide C-F. Using recently developed gene targeting techniques, we have identified the genes involved in emericellamide biosynthesis. Additionally, I will present several approaches to activate cryptic biosynthesis pathways in this organism. The second part of the talk will focus on the development of a general heterologous host for natural product production and manipulations.