



Dr. Stephen Mackessy

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Location: Merrill-Cazier Library room 154
February 19, 2009 from 3:30 – 4:30 PM

“Natural History to Novel Compound Discovery: Exploring the Venom Proteome of Snakes”

Snake venoms contain a myriad of potent biological activities, most of them resulting from specific proteins or peptides. Numerous venom compounds are currently being used as drugs to treat human diseases, and many other are used as molecular probes. Venoms from many front-fanged snakes have been extensively studied, and using a proteomic approach, detailed compositional analyses have revealed that the diversity of proteins in venoms belongs to a relatively small number of protein families. We are also applying this approach to venoms from colubrid snakes, a vast polyphyletic assemblage of “harmless” snakes found world-wide. Because venoms are trophic adaptations, allowing a chemical means (rather than a mechanical means) of dispatching fractious prey rapidly, there is good reason to expect that venoms from colubrids will contain novel compounds. Specific examples from both front-fanged and rear-fanged venoms will be discussed, including taxon-specific three-finger toxins (α -neurotoxins) which are found in some colubrid snake venoms. Our interest in these venoms is two-fold: as a source of novel compounds for drug leads, and to understand the evolution of this fascinating chemical weapons system of snakes.

Refreshments will follow in the Biotechnology Building Lobby

Seminar