

## RISE Talks Series

Who?

[James Balkovec, Ph.D.](#)

What?

Natural Born Killers: Natural Products in the Design of New Antifungal Agents

When?

12:00-1:00 on Wednesday, October 24th

Where?

Hall of Sciences, Room 326

The discovery and development of new drugs is a long and arduous process due to the scientific and regulatory rigor involved to ensure a safe and effective agent. Natural products have played a critical role in the discovery of new drugs, having served as lead structures for over 25% of the drugs introduced from 1981-2014. They are especially important as a source for anti-infective drugs where these “natural killers” are likely produced by the organism to gain a competitive advantage in their environment. While a number of natural products have been utilized as drugs without modification, better physical properties, potency, and safety have arisen from at least minor structural changes.

The  $\beta$ -1,3-glucan synthase inhibitors are important agents effective against life-threatening *Candida* and *Aspergillus* fungal infections which are responsible for significant morbidity and mortality in immunocompromised individuals. Two structurally distinct natural product classes (echinocandins and enfumafungin) that inhibit this fungal-specific target will be used to exemplify the drug discovery process. Time permitting, bispecific molecules that link an echinocandin to an effector moiety that engages the immune system, will be presented as a novel approach that augments the antifungal activity of the echinocandins.

**Bio:** 30+ years of experience in drug discovery in areas of infectious diseases, metabolic disorders, inflammatory and thrombosis disease. Merck Research Laboratories until 2011, started ChemTract Consulting which provides scientific and strategic guidance to biotech, big pharma, university, and not-for-profit organizations. In 2014, joined Cidara Therapeutics, a San Diego based biotech focused on discovering and advancing new anti-infectives, as SVP of Research. Continues consulting with biotech companies to the present.