



THE UNIVERSITY OF ARIZONA
COLLEGE OF MEDICINE TUCSON
Pharmacology

Presents

“From Bench to Sea to the Arizona Desert: My Journey with Natural Product Chemistry So Far...”

BY

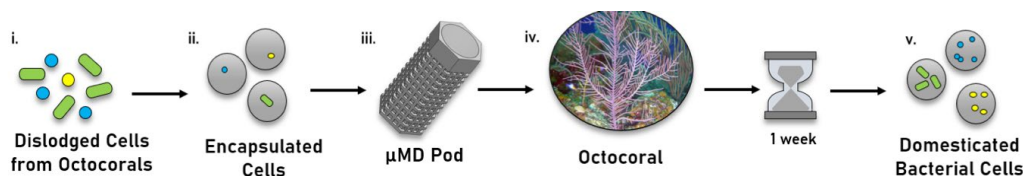


Dr. Christopher Cartmell
Associate Research Scientist
Northeastern University, Boston

Host: Dr. John Streicher

Abstract: Over the past four decades around 70% of antimicrobials and 60% of anticancer agents have been derived from natural products in one form or another. However, currently around only 1% of bacteria are cultivatable under standard lab conditions, a phenomenon known as the “Great Plate Count Anomaly”. As we currently find ourselves in a discovery void, with antibiotic resistance rising and the entry of new therapeutics into clinical trials declining the need to probe this microbial dark matter is becoming increasingly important due to the potential for novel therapeutics. It is currently unknown why the vast majority of microbes are unable to be cultured on artificial media, but it is believed to be a result of an absence of chemical signaling the microbe would be subjected to within its own natural environment from neighboring microbes. Current *in-situ* methods include that of diffusion chambers and the iChip which suffer from low throughput and a lack of chemical communication respectively with neither suitable for cultivation within octocorals.

Hyphenating natural product chemistry, bio-fabrication and microbial encapsulation, we can increase throughput, whilst allowing for chemical communication to still occur, harnessing host-symbiont relationships. This process has the potential to create a new platform for natural product discovery, allowing access to a vast array of both microbial dark matter and chemical space currently unattainable, leading to the much-needed discovery of new bioactive compounds.



Monday, March 20, 2023
11:00 am – Noon
AHSC - Room 8403

