## **Carnegie Mellon University** Materials Science & Engineering

presents

## The Transition from Molecules to Microstructures in Agriculture

Dr. James Rogers Founder and CEO of Apeel Sciences

## ABSTRACT:

The industrialization of agriculture has relied on the use of agricultural chemicals to aid disease control and ultimately increase both farming yields and efficiency. Despite best efforts to mitigate any sort of negative externalities caused by the use of these chemicals, a growing volume of research suggests that it is impossible to poison the "bad bugs" without poisoning the "good bugs" as well.

Apeel Sciences creates plant derived formulations which are applied to the surface of plants in order to redefine the interface between the plant and the external environment. Microstructural control of the interface between the plant and the external environment is shown to enable the plant to resist both the abiotic and biotic stressors which limit agricultural productivity. This presentation will explore current opportunities in the food supply chain and highlight how this young company was born out of an understanding of structure-processing-property relationships which govern the structural evolution of solution-deposited organic thin films.

## BIOGRAPHY:

James Rogers, PhD, is Founder and CEO of Apeel Sciences, a company fighting the global food waste crisis by utilizing advances in materials science to prevent waste in the first place—a sustainable approach to the world's growing food demands. Dr. Rogers leads corporate strategy and Apeel's team of award-winning scientists in developing plant-derived technologies that naturally keep fruits and vegetables fresh longer so less is wasted. Dr. Rogers received dual undergraduate degrees from Carnegie Mellon University in Materials Science & Engineering and Biomedical Engineering and his PhD in Materials from the University of California, Santa Barbara. Dr. Rogers was the 2012 recipient of the Frank J. Padden Jr. Award in polymer physics, the premier polymer physics prize in the United States.