

Science Outreach – Athabasca presents...

“OBLITERATION BY SYNTHETIC PEPTIDES: A POSSIBLE APPROACH AGAINST PESKY BIOFILM INFECTIONS”



Speaker: Neel Doshi

*Bachelor of Science Project Student,
Supervisor: Dr. Shauna Reckseidler-Zenteno*

Date: May 9, 2014

**Place: Athabasca University,
Governing Council Chambers**

Time: Noon to 1 PM

Refreshments will be available. Admission is free.

Not long ago bacteria were conceptualized as free-floating entities, wafting about alone in their environments. We now know countless bacteria actually live in complex communities, biofilms, composed of diverse individuals who communicate with one another as they carry out life's functions. Living in a collective confers great survival advantages, a remarkable example being extraordinary resistance to antibacterials; a trait bacterium can easily share with one another!

The vast majority of bacterial communities are harmless, but those built by infectious species can be very dangerous. Hospitals, where pathogens congregate and hygiene is challenging, are breeding grounds for such communities. Here disease-causing bacteria, *Klebsiella* and *Pseudomonas*, routinely exploit resources of human flesh already weakened by other ailments. This presents as deadly disease, with symptoms ranging from lung tissue decimation to whole-body inflammation. Successful treatment is often, virtually impossible, a problem only exasperated by antibiotic misuse.

With this backdrop, we used cutting-edge technology to grow and observe these biofilms as they may manifest in nature. Using striking fluorescent images we present a visual picture of these communities along with data showing that synthetic peptides (short proteins similar to natural entities of our immune systems) show much promise as future therapeutics, harboring potential to successfully clear pathogenic biofilms. These encouraging results motivate investigation to codify the features that make these agents effective and explore all potential real-world applications.

Like us on Facebook.

For more information visit our website at

<http://scienceoutreach.ab.ca/>

Science Outreach – Athabasca is supported by

