

Canadian Association of Physicists and UNBC Department of Physics

How Physics Helps to Simulate a Search for Life on Mars

Dr. Kristin Poduska
Memorial University

Abstract:

Mars-based life could exist in the form of microbes that get their energy from interactions between water and certain kinds of subsurface rock. However, detecting the telltale signatures of such microbes while they are still on Mars is an epic challenge. This talk will describe physics that helps make remote detection of such microbial activity more feasible. The key is detecting and differentiating reflected light, using a combination of infrared and visible wavelengths. We use data from satellites, as well as from drones equipped with specialized cameras, to tackle this complex puzzle that has many technical constraints. You'll see how our interdisciplinary team, from academia and industry, puts all of this together to simulate a microbe-detection mission on Mars-like terrain that exists right here in Canada.

Short bio:

Kris Poduska is an experimental condensed matter physicist based at Memorial University of Newfoundland, where she has been on the faculty in the Department of Physics & Physical Oceanography since 2003. Originally from the United States, Dr. Poduska holds an undergraduate degree in physics from Carleton College (Northfield, Minnesota, USA), and a Ph.D. in physics from Cornell University. Her research is a blend between physics and chemistry, focusing on understanding structural and physical property relations in inorganic materials. The applications of the work span from technologically relevant semiconductors, to medically interesting biomaterials, to ancient archaeological materials.

+ Date

Tuesday
February 25, 2020

+ Time

1:00 – 2:30 P.M.

+ Location

8-164 Teaching Lab
Building

+ Contact

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Everyone welcome
Light refreshments served