

Thursday, September 16th, 2021

4:00 PM – 5:00 PM, Virtual

<https://asu.zoom.us/j/86960690591>

The Drivers of Bacterial Surface Motility

Professor Abhishek Shrivastava

Arizona State University
School of Life Sciences



Abstract:

Bacterial gliding has fascinated biologists and physicists for a long time, yet very little is known about its mechanism. Our understanding of motion in the low Reynolds number regime tells us that gliding bacteria must have motors that aid motility. In this talk, I will present experimental evidence that suggests the presence of a rotary motor in gliding bacteria. At the core of this rotary motor is the Type 9 protein secretion system that couples with a spirally localized cell-surface adhesin and forms a molecular rack and pinion machinery. I will discuss how collective motion of gliding bacteria and subsequent cargo transport can shape the structure of microbial communities.

Biography:

Abhishek Shrivastava is an Assistant Professor at the School of Life Science and Biodesign Institute at Arizona State University. He received a PhD from University of Wisconsin-Milwaukee (2008-2013). He was a Postdoctoral Fellow at Harvard University (2013-2019) where he had joint appointments with the Rowland Institute at Harvard (2017-2019) and the Forsyth Institute (2017-2019). The Shrivastava lab at ASU is interested in bacterial motility, protein secretion machinery, swarm behavior, and the rules that govern organization of a microbial community.

Host: Prof. Douglas Shepherd

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