PHYSICAL MATHEMATICS SEMINAR

WEAPONS OF MASS RETRACTION: UNITED THEY STAND

NICOLAS BIAIS
Columbia University

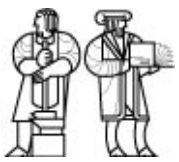
ABSTRACT:

More than 80% of pathogenic bacteria bear multifunction appendages called pili. Those structures are long helical polymers. They have a quite small diameter (4 to 8 nm) but can extend up to 30 microns in length, 20 to 30 times the size of the bacterium. Like microscale spidermen, certain bacteria can extend and retract those nano-size threads to move and to probe their environment.

In this seminar, we will see in the case of the infectious agent Neisseria gonorrhoeae, the use of pili to generate force. We will see how cooperative pulling of multiple pili enables Neisseria gonorrhoeae to claim to be the strongest microscale superhero known to date. We also will dwell into a few others of it superpowers.

TUESDAY, DECEMBER 11, 2007
2:30 PM
Building 2, Room 105

Refreshments at 3:30 PM in Building 2, Room 349
(Applied Math Common Room)



Massachusetts Institute of Technology
Department of Mathematics
Cambridge, MA 02139