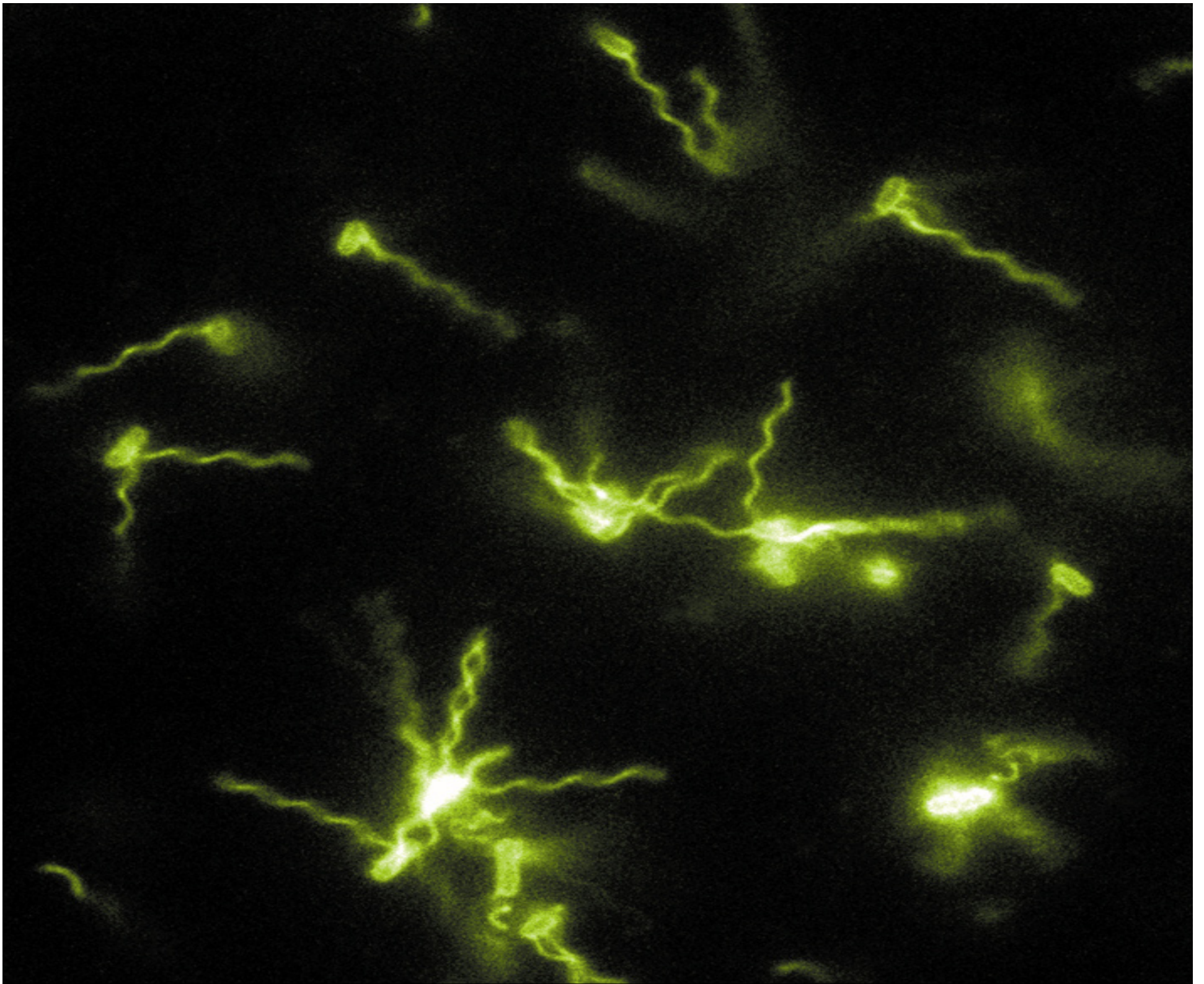


Boston University Physics Colloquium



Cells of the bacterium *Escherichia coli* stained with a fluorescent dye (Alexa Fluor 488) that enables one to visualize flagellar filaments. Both individual filaments and flagellar bundles can be seen. The cell bodies are about 1 micrometer in diameter.

Marvels of Bacterial Behavior

Escherichia coli swims by rotating long, thin, helical filaments that arise at different points on the cell surface. Each filament is driven at its base by a rotary motor only 45 nm in diameter made from about 20 different kinds of parts. Cells are able to swim up gradients of chemical attractants by controlling the direction of rotation of these motors, a process known as chemotaxis. I will touch upon the history of this subject, tell you about some of the physics that *E. coli* knows, and describe some recent experiments related to the signaling pathway, the operation of the flagellar motor, and the social behavior observed when cells flock.

Howard Berg
Harvard University

October 19, 2010 (Tuesday) at 3:30pm (Refreshments at 3:15pm)
SCI 107, Metcalf Science Center, Boston University
Call: Winna Somers (wsomers@bu.edu) (617) 353-9320
Host: Sidney Redner

