

Shiladitya Banerjee

Assistant Professor at Carnegie Mellon University

Pittsburgh, PA, US

Shiladitya Banerjee develops theoretical models to understand how the internal structures of a living cell impacts its characteristics.

Biography

Shiladitya Banerjee develops theoretical models to understand how the internal structures and machineries of a living cell impacts its shape, physical properties and ability to communicate with other cells. His previous work showed that the mechanical form, function and regulatory biochemistry in living matter relate to that matter's collective decision-making strategies. He found that the interplay between protein synthesis and cell mechanics regulates cell shape, division timing and survival in stressed conditions. His recent work demonstrates how certain types of bacteria can adapt to long-term exposure to antibiotics by changing their shape.

Industry Expertise

Research, Education/Learning

Areas of Expertise

Single-cell Biophysics, Soft Living Matter, Physics, Physics of Living Systems, Molecular and Cell Biology

Affiliations

Scientific Reports : Editorial Board

Event Appearances

Quantitative Approaches to Antimicrobial Resistance

IOP conference, Physics of Life Network

Education

Syracuse University

Ph.D. Physics

Chennai Mathematical Institute

B.Sc. (Honors) Physics

Accomplishments

Young Investigator Award

2018 Human Frontiers Science Program (HFSP)

New Investigator Award

2018 UK Engineering and Physical Sciences Research Council (EPSRC)

Royal Society University Research Fellowship

2018

Kharasch Postdoc Award

2016 Department of Chemistry, University of Chicago

UCL Global Engagement Award

2017-2018

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