

SFB  
1078



Protonation Dynamics  
in Protein Function

Mon, November 16,  
2020

15:15 – 16:15

Freie Universität Berlin

via WebEx

## ➤ Colloquium

➤ **Dr. Olivia P. Judson**

Imperial College, London, UK

### **Dance of Rock and Life: Energy, Evolution, and the Transformation of the Earth**

Throughout its long history, life has been a force of planetary transformation, remaking the air, the rocks, the landscapes, even painting the color of the sky and increasing the variety of Earth's minerals. But are the histories of life and Earth just one thing after another, or is there an underlying pattern that we can make sense of? Here, I argue that there is a pattern, and that life-Earth history can be understood as a sequence of five epochs, each of which corresponds to the evolution of lifeforms that can access a new source of energy. With each new epoch, the diversity of life has become greater, ecosystems have become richer, and life has increased its impact on the planet. This framework of energy expansions provides a way to think about current human impacts upon the Earth—and about the probable trajectories of life-planet systems elsewhere in the cosmos.

Olivia P. Judson is an evolutionary biologist who graduated from Stanford University and received her PhD from Oxford University. She is an award-winning science writer who has published in *The Economist*, *Nature*, *Science*, *National Geographic*, *The Guardian*, to name a few. Her award-winning book, *Dr Tatiana's Sex Advice to All Creation: The Definitive Guide to the Evolutionary Biology of Sex*, has been translated into more than 15 languages. Affiliated with both Imperial College London and the Freie Universität Berlin, she is currently writing a book on the history of life and the Earth.

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