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# Upending Assumptions About Life on Earth

## Lecture Series on Deep Life

**Prof. Dr. Sol M. Gruner**

Cornell University, Physics Dept., Ithaca, USA & Joachim Herz Fellow 2022/23 at Hamburg Institute for Advanced Study (HIAS)

**Wednesday, 11:00:**

**16 Nov. 2022**

"Upending Assumptions about Life on Earth"

**23 Nov. 2022**

"High-Pressure Biology: Protein Crystallography"

**30 Nov. 2022**

"High-Pressure Biology: Small Angle X-ray Scattering"

Discoveries of prevalent microbiota in deep rock have upended assumptions about life on Earth. This Deep Life lives on residual chemical and radioactive energy sources and is a significant fraction, if not a majority, of Earth's biomass.

Deep Life raises profound questions about how and where life evolved, how it differs from surface life, the minimum requirements to sustain cells, the maximum temperatures and pressures under which organisms can remain viable, and effects of deep environmental conditions on the properties of biomacromolecules.

Although physicists, biologists, chemists, geologists, etc. from

around the globe are engaged in Deep Life studies, the community is still quite small and relatively unknown.

The three lectures have the goal of informing all interested and in particular scientists on the DESY campus about Deep Life.

Lecture 1 in the CSSB Lecture hall (Bldg. 15)

Lecture 2 & 3 in the FLASH Seminar Room (Bldg. 28c)

Zoom Webinar link for lectures:  
<https://desy.zoom.us/j/68572076649>  
 Code: 039470