

# FALL 2020 COLLOQUIUM SPEAKER

## OCTOBER 14, 2020

Wednesday's  
1-1:50pm  
ZOOM

### New Materials From High Pressure

Novel materials are required to make fundamental and applied advancements over a broad range of applications. While traditional materials synthesis relies on thermochemical methodologies, i.e., using temperature to overcome activation energy barriers and stimulate chemical bond rearrangement at ambient pressure, high-pressure synthesis methods show promise to create novel materials with superlative properties and give access to an entirely new materials space. In this talk I will provide a general overview of how high pressure (one thousand to one million times atmospheric pressure) can be used to create new materials and provide insights into novel phenomena. Specifically, I will discuss our recent discoveries of new silicon allotropes with enhanced optoelectronic properties and novel carbon-based clathrate structures with tunable electronic structures.

**ZOOM MEETING ID 967 5468 5049 | PASSWORD: 495951**



**Dr. Timothy Strobel**

Staff Scientist,  
Carnegie Institution of Science  
Washington, DC

**Timothy Strobel** is a Staff Scientist at the Carnegie Institution for Science, Earth and Planets Laboratory, in Washington, DC. Strobel received his PhD in chemical engineering from the Colorado School of Mines in 2008 and subsequently joined the Carnegie Institution for Science as a Carnegie Postdoctoral Fellow. In 2011, he was appointed Staff Scientist at Carnegie. His research group studies the physics and chemistry of materials under extreme conditions, and synthesizes novel materials for energy and other advanced applications.

**Please visit the MSE website for the 2020/21 Speaker Lineup**