

ADVENTURES IN GEOLOGY, AND MORE

We will discuss three or four of the topics outlined below during our 8 sessions and one Saturday walk (if permitted!) amongst Princeton's buildings.

1) Paul Steinhardt, of the Princeton Physics Department, postulated in the early 80's the existence of a new form of matter, which he named quasicrystals. In January 2009, Paul enlisted my help to determine whether a sample of a quasicrystal, discovered by an Italian mineralogist, formed naturally and, if so, how. Paul has written a book about the saga: "The second kind of impossible." This sets the stage for the other topics, below.

2) Most of my geologic career (55 years!) involved field work in the Coast Mountains of British Columbia, and several mountain ranges in Alaska. This involved living in the mountains for weeks at a time. Along the way I met with tribal councils and learned to cook porcupine and other delicacies. [We will discuss the why and the how for doing the "impossible"](#). This topic will be in two parts and will begin with the stories leading up to organizing the "driving" of a seismic ship along a fjord across the mountains in order to make an ultrasound-like image of the rocks in the upper 40 km of Earth's crust.

3) I have organized several expeditions to the Kingdom of Bhutan to study the geology of the Himalayas, beginning in 1987 and continuing to 2012. Our class discussions will include addressing the question: why are the Himalayas so high? And: how did I get into Bhutan and do geological research, which was initially not permitted?

4) Fifty-one years ago the Apollo moon rocks began to arrive, and I studied the samples from all six successful Apollo missions and from two Russian (Luna) missions. [We will discuss everything you might want to know about the moon, and more.](#)

5) The geology of Princeton and New Jersey. Did you know that Morocco used to be right over there? A useful reference book is "Roadside Geology of New Jersey" by David Harper. However, the main reference material will be the Geologic Map of New Jersey. On a good-weather Saturday (and social distancing permitting), we will take a stroll amongst the building stones of the Princeton University campus. Many of the building stones are from local quarries.

We will not have time to do all of these topics. The final choice of which topics I will cover will be made close to the beginning of the course. Right now, based on what we did and did not do in the fall 2020 class, I am inclined toward the first three topics.

Leader: Lincoln Hollister is professor emeritus of geosciences at Princeton University, where he taught geology from 1968 until 2011. He received a BA from Harvard University in 1961 and a PhD from Caltech in 1966.

Thursdays: 1:00 to 3:00 p.m., 8 weeks: February 25 through April 15

Maximum: 30