

**The Department of Geological and Environmental Sciences (GEOS)
and
The Association of Geology and Environmental Students (AGES)**

**Present GASS...the
GEOS/AGES Seminar Series**

Tuesday, February 12 – 5:00 p.m. - PHSC 109

Dr. Russell Shapiro

Geological and Environmental Sciences ~ CSU Chico

“Alteration of Ancient Microbes: When is a Fossil no longer a Fossil? Implications for Early Earth History and Astrobiology”

- ✚ Fossils provide our insight to the rich record of the past life on Earth. However, very ancient rocks and potentially rocks from extraterrestrial targets like Mars have a very poor fossil record—if there are even fossils! Not only are the life forms, bacteria primarily, tiny and simple in morphology, they are also very hard to preserve. To complicate issues further, most often these ancient rocks have been subjected to intense heat and pressure, changing their fabrics and minerals.
- ✚ This talk will discuss ongoing research into fossiliferous rocks that are nearly two billion years old from Minnesota and Ontario that have been altered by various geologic forces. The question is: “At what point do we no longer recognize a life signature in an ancient rock? How can we apply these studies to astrobiology targets?”
- ✚ As an added bonus, there will also be a segue into how this information was used to foil a devious plot to sell a bogus mine to an Italian art dealer!
- ✚ This talk will be presented to a general audience and should appeal to those interested in geology, biology, and paleontology.