A Brisk Jog on the Trail of Time:

Two Billion Years of Grand Canyon Geologic History from the Rim

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Abstract:

The rocks and landscapes of Grand Canyon encode nearly two billion years of geologic history while also manifesting many dynamic geological, hydrological, and ecological processes in the present day. Grand Canyon National Park reveals this deep history and continued dynamism to millions of visitors each year. The Trail of Time Exhibition along the South Rim of Grand Canyon—a walking timeline, designed as a self-guided field trip—was developed to help visitors understand deep time, processes of change, and the evolution of the Canyon as they traverse the Rim and take in the spectacular panoramas. The Trail of Time has been called the world's largest permanent geoscience interpretive exhibition in the world's grandest geological landscape, and also the most carefully planned and evaluated exhibition in the National Park system. This presentation will be a kind of virtual walk along the Trail (a brisk jog, really, given the time frame) in which we will recap the entire rock column and geological history of Grand Canyon from the Paleoproterozoic Era through...Today.

Bio:

Steven Semken is professor of geology and education in the [School of Earth and Space Exploration](http://sese.asu.edu), [Senior Sustainability Scientist](http://sustainability.asu.edu/people/persbio.php?pid=8023) in the [Julie Ann Wrigley Global Institute of Sustainability](http://sustainability.asu.edu), and a faculty affiliate of the [Center for Education through Exploration](http://etx.asu.edu) and the [Global Drylands Center](https://sustainability.asu.edu/global-drylands/) at Arizona State University.

Professor Semken is an ethnogeologist and geoscience education researcher who works at the intersection of geology, geography, ethnography, and learning sciences. He taught at Dine College on the Navajo Nation for 15 years before coming to ASU in 2003. He and his students work extensively in the geologically and culturally diverse places of the American Southwest, Latin America, and the Caribbean, with particular attention to regional Native American and Hispanic/Latino communities and to National Parks, particularly Grand Canyon. His research group applies [place-based](https://www.earthmagazine.org/article/place-based-education-teaching-geoscience-context-location-and-culture) and culturally infused methods of geoscience teaching to foster improved access to geoscience studies and careers for underrepresented people, environmental and cultural sustainability in underserved regions, and greater public Earth-science literacy. Semken was one of the designers and creators of the Trail of Time Exhibition at Grand Canyon.

Semken is a Fellow of the [Geological Society of America](http://www.geosociety.org/members/fellow.htm), a recent [EarthScope Speaker](http://www.earthscope.org/resources/speaker-series/2016-2017-speaker-series), and a Past-President and former Distinguished Speaker of the [National Association of Geoscience Teachers](http://nagt.org/index.html). He has been a Visiting Professor at the United States Air Force Academy. He has a Ph.D. (1989) and S.B. (1980) from the Massachusetts Institute of Technology and an M.S. (1984) from the University of California, Los Angeles. Semken has received the highest awards for undergraduate teaching at three different institutions where he has taught: Arizona State University, Dine College, and the Massachusetts Institute of Technology.