

# SEMINAR

November 2<sup>nd</sup>, 2015, Monday at 11:00am-12:00pm, MARSHAK 801

## Geologic Clues from the Sea

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**Abstract:** Millenniums of geologic history can forewarn of regional hazards that would otherwise take people by complete surprise. Coastal geology has recently served public safety in this fashion in the northwestern United States, and it may soon do so in the northeast Caribbean as well. In the Pacific Northwest, geology has revealed a history of very large earthquakes and associated tsunamis. The most recent of these, in January 1700, entered written history when its transpacific tsunami caused flooding and damage in Japan. In the northeast Caribbean, brain-coral boulders give evidence for an unusually large tsunami from a source northeast of Puerto Rico. This geologically inferred tsunami occurred in the 1300s or 1400s, and its source has not produced a comparable tsunami in the five centuries since Columbus.

**Professional Background:** Brian Atwater is a U.S. Geological Survey scientist based in Seattle at the University of Washington. He began his USGS career four decades ago with studies of sea-level changes and tidal-marsh vegetation at San Francisco Bay. In the early 1980s he worked on an Indian reservation in northeast Washington State, mapping granitic rocks and documenting ice-age floods. Since 1985 he has worked mainly on earthquake and tsunami hazards. His discoveries contributed to today's consensus that the Pacific Northwest is subject to earthquakes as large as magnitude 9 and to associated tsunamis. He also helped identify the geologic traces of unusually large tsunamis in Japan, Chile, Thailand, and the Caribbean. As a writer, illustrator, and editor of general-interest publications, he contributed to a book on Japanese written records of North American tsunami in 1700, to booklets on how people survived Chilean and Indonesian tsunamis, and to a collection of accounts from eyewitnesses to a tsunami on shores of the Arabian Sea.