Science Atlantic/Atlantic Geoscience Society

2017-18 Geology Speaker Tour

Dr. Shannon Sterling Dalhousie University

Global Evolution of the Water Cycle

Abstract:

Water: it is essential for all life on the planet, and it makes our planet habitable. Yet, we know surprisingly little about how our water cycle evolved throughout Earth's history. In this lecture I will propose a new framework for the history of our global water cycle, using the questions; i) how has the water cycle been altered by life?; and ii) how has the water cycle evolved its capacity to support life? As we explore the answers to these questions, we will examine major changes to the water cycle in Earth's history, and how these changes altered the habitability of our planet. We will use insights we learned from a better understanding of the history of the water cycle to gain a new perspective on the future of our water cycle – one in which we face grand challenges in water availability.

Short Bio:

Dr. Sterling has channeled her love of water that began while growing up at the edge of the Capilano River in BC into her hydrology research. After consulting for several years in watershed assessment and restoration across western North America, she focused her hydrology training at elite international institutions (McGill, UBC, Duke, Université de Paris) to tackle complex problems related to human impacts on rivers and available water. Her first major discoveries were on how human land cover change alters the global water cycle. When arriving in the Maritimes in 2009, Dr. Sterling founded the Dalhousie Hydrology Research Group and created the Nova Scotia Watershed Assessment and Database. She has established high frequency water quality monitoring systems in several Nova Scotian watersheds. She recently has discovered that metal levels have been increasing in Nova Scotian rivers. In this seminar she will be presenting results from her latest research that she completed during her sabbatical in Europe - on the evolution of the global water cycle.