

## **Formation of a joint technical committee between Biogeosciences and Hydrology sections of AGU on Soil Systems and Critical Zone Processes**

Soil as a biogeochemical-hydrological compartment of the biosphere and as a scientific discipline is gaining prominence in the context of some of the most pressing global challenges facing society ranging from climate change to food security and from energy and water resources to understanding of ecosystem functioning. The soil science community seeks to expand core activities beyond traditional links with agriculture. In particular, we endeavor to strengthen ties with scientific and engineering disciplines including: ecology; meteorology; biogeosciences; geochemistry; hydrology; and atmospheric sciences. In addition to enhanced relevance and impact, these interdisciplinary interactions are mandated by the nature of the scientific challenges such as water quality and quantity, carbon cycling, and nutrient availability. Such ties are needed to better address the interests and professional preparation of current and future students; and are essential for maintenance of a vibrant soil science discipline.

Many soil scientists have been active in other professional societies such as AGU, GSA, ESA, EGU, and IUSS, in addition to ASA and SSSA. It was suggested that the formation of a soil-related technical committee within the AGU would provide a platform for improved integration of soil science with related disciplines. The formation of soil/CZ technical committee and activities would galvanize some of the existing but scattered soil-related activities within the AGU and make substantial contributions to the larger objective of promoting and enhancing Earth Sciences. The soil/CZ activities would help broaden appreciation and understanding of critical functions and services of soils in Earth Systems, and provide a clear context for the proposed focus area based on the following key roles of soil:

- Soil is a functioning, complex natural system with unique characteristics that cannot be deduced from a collection of its constituents or individual processes.
- Soil is arguably the most biologically active compartment of the biosphere, hosting Earth's largest pool of biodiversity;
- Soil is a thin film of life covering much of the terrestrial surface and acting as the planet's life support system; mineral weathering in soils controls nutrient release and occlusion;
- Soil, with its related biota, is Earth's recycling system, providing most of our needs for food, feed, fiber, and energy, while forming a global biogeochemical cycle of C, N, and P and serving as the largest terrestrial stock of organic carbon; and
- Soil provides important ecosystem services such as provision of fresh and clean water, essential for human primary needs of drinking water and food production, and functions as a water purification system.

The above issues of soil-related interdisciplinary communications will be addressed by creating a joint technical committee (TC) on Soil Systems and CZ Processes created by Biogeosciences and Hydrology sections of the AGU. This new association will underscore the intertwined nature of processes in soils systems and offers opportunities to unify interests across these broad disciplines. The structure and scope of activities of the *Soil Systems and CZ Processes* TC will be defined via discussions across the soil science, hydrology, and biogeoscience communities both within and beyond the AGU. The technical committee will serve as a nucleus; actively solicit input and will be open for volunteers from all related disciplines. We anticipate that such TC will facilitate opportunities for networking, interactions, and leverage collective thinking in soil systems and critical zone processes already present at the AGU. The committee should also play an active role in enhancing links between AGU and other scientific societies, in particular with the SSSA, ASA, GSA, ESA, and EGU. The activities of this technical committee are expected to substantially contribute to goals and mission of the AGU.