



Education and Policy in Soil Science: The U.S. Experience

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The Soil Science Society of America (SSSA), founded in 1936, fosters the transfer of knowledge and practices to sustain soils globally, and now serves 6,000 members worldwide. It is also home to over 1,000 certified professionals dedicated to advancing the field of soil science. The Society provides information about soils in relation to crop production, environmental quality, ecosystem sustainability, bioremediation, waste management, recycling, and wise land use. We provide high-impact research publications, educational programs, certifications, and science-policy initiatives, which will be described in more detail in this presentation.

The need for soil science education to a wider audience and development and promotion of soils-based policy initiatives, has increased in the last decade with recognition of the role soils play in sustaining life, population well-being at the nexus of food, energy, and water security. To address these needs, SSSA has two general public outreach sites online: www.soils.org/discover-soils and <https://soilsmatter.wordpress.com/>, reaching over a half-million viewers per year, as well as social media platforms. We are dedicated to increasing interest and awareness of soil science among K-12 teachers and their students, and working to integrate more information on soil science into the science curriculum of schools over multiple grade levels. For instance, we have a website dedicated to children (<http://www.soils4kids.org/>), which describes fun games to play with soil, suggestions for science-fair experiments, and opens their minds to careers in soil science. Another site (<http://www.soils4teachers.org/>) is dedicated to the needs of school teachers, providing ready resources for the classroom. Society members have even authored books ("Soil! Get the Inside Scoop" for one) to get children aged 9 to 12, excited about the living world of soil. In keeping with the times, a blog called "Soils Matter" is hosted by Society staff and now has over 24,000 views a month.

Probably, the most successful recent campaigns have been our "I Heart Soil" brand, which features an array of products with "I Heart Soil" now in 15 languages (including Klingon) and the "I Dig It! Secrets of Soil" exhibit. This exhibit, is a 375-square meter interactive display revealing the complex world of soil and how this underfoot ecosystem supports nearly every form of life on earth. Developed by the Smithsonian's National Museum of Natural History with support from SSSA, "Dig It!" includes interactive displays, hands-on models, videos, and 54 soil monoliths representing soils from each USA state. It was on display at the Smithsonian in Washington, DC for nearly two years, and in 2010, moved to museums in the states of Nebraska, Washington, Minnesota, California and then North Carolina.

Another major outreach emphasis of SSSA is the development and promotion of soils-based policy initiatives, with Society policy expert staff located in Washington, DC dedicated to this critical activity. Information on their activities is located on our Society website at <https://www.soils.org/science-policy> and includes funding concerns, educational briefings, and position statements and reports. For example, our Frontiers in Soil Science activity identified critical needs to augment federal funding and to promote innovation through partnerships between public and private sectors. The Congressional Soils Caucus Alliance communicates with Congressional members and staff to enhance knowledge and understanding of the role that soil and soil science play in addressing the most pressing issues facing the USA and the world. These SSSA activities bore fruit recently, when on December 5, 2016, the White House Office of Science and Technology Policy announced new steps to advance soil health. At the same time, the National Science and Technology Council released a Framework for a Federal Strategic Plan for Soil Science, which aims to identify needs, gaps, and opportunities in soil science; develop

opportunities for expanding soil conservation practices and enhancing soil carbon sequestration; and coordinate Federal research priorities for the future.

Clearly, the recognition and visibility of the critical role of soils to human and environmental health to diverse population of the USA has never been greater. This provides opportunities and challenges, with the SSSA at the forefront, leading the charge.