

# **EarthScope: Community Collaboration in Distributed Science**

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The EarthScope facility grew out of an emerging consensus in the late 1990's that data from modern geophysical instrumentation, applied at the continental scale, could provide observations that would stimulate fundamental advances in our understanding of the structure of a continent and how it deforms. An energized and engaged community spent five years carefully defining a suite of instrumentation and observations that was appropriate and achievable and convincing NSF that this could underpin a program that would engage a broad sector of US and international Earth scientists. With ten years of continued community engagement, and dedicated effort by a group of talented scientists, engineers and technicians, a facility has emerged that has already changed our view of Earth and promises even more exciting discoveries in the future.

In EarthScope, we have created a resource for science that is fundamentally different from most other large facilities developed and supported by NSF. Not only is the facility spatially distributed, but the scientific research that it supports is broadly distributed in disciplines, institutions and individuals. In many ways, EarthScope represents an Earth science approach to large-scale research that, at its core, is fundamentally different from the way science is organized in other physical sciences.

As we think about what might lie beyond EarthScope, it is important to review some of the unique ways in which EarthScope has enabled our science; to reflect on "lessons learned"; and to help engage a new generation of Earth scientists to identify emerging scientific challenges and build the resources they require to maintain a vibrant and stimulating environment for research in the decades ahead.