

The 4D Earth Initiative: A community initiative to characterize and investigate the evolution of the North American continent

This breakout session focused on a new interdisciplinary 4D-Earth Initiative as a possible successor to the EarthScope program, aimed at: (1) expanding the primarily 3-D geophysical snapshot of North America into the 4th dimension of time, and (2) illuminating the crustal component that was below the resolution of much of the USArray image. The overarching scientific motivation is to develop a Community Geologic Model for the 4-D Evolution of the North American continent, to unravel how and why the continent evolved to the current state, and to firmly answer long-standing questions of how the time-integrated processes of plate tectonics and surface processes produce the mantle and crustal structures we see today. The breakout discussion focused on the vision and scope of the proposed community model and also on the implications of a more community-based approach to geologic research. Participants emphasized the importance of combining new science with synthesis of existing data and also that “big-data” research (and funding) may be moving in the direction of community projects. The community model will be a massive cyberinfrastructure challenge in and will require a close integration with the on-going EarthCube efforts. Possible next steps include distribution of the concept paper ([link](#)) and soliciting feedback from the broader community, and if positive, preparation of an RCN (Research Coordination Networks) proposal for the November EarthScope deadline.