

A Strategy for Advancing Critical Zone Science

February 2016 – one-page summary

Mission – Our Core Purpose

To discover how Earth's living skin is structured, evolves, and provides critical functions that sustain life



Critical Zone Observatories

U.S. NSF National Program

Core Values – Our Aspirations

Interdisciplinary Collaboration

- Critical Zone science requires insights from a wide range of disciplines
- Our interdisciplinary, integrative approach drives innovation and transformative findings
- Working together in an open community, we are greater than the sum of the parts

“Deep” Science

- We encompass deep time from the instantaneous all the way to geologic time
- We embrace deep structure from the vegetative canopy down to fresh bedrock
- We explore deep linkages resulting in deep insights and impacts

Predictive Knowledge

- We believe exploration and quantitative modeling go hand in hand
- We test generalizable hypotheses to advance the field of Critical Zone science
- We generate and disseminate new knowledge that benefits humankind

Our Vision for Critical Zone Science in 2026

Digging deep to project the future

- Critical Zone science is recognized as an important and groundbreaking new field of science
- We act as a vibrant and dynamic network of science sites strategically arrayed along environmental gradients and optimized to advance the state of Critical Zone science
- We have strong connections with other important networks and partners around the globe
- We have a growing set of conceptual models that guide our research
- We have adopted a set of common measurements
- We are collecting real-time data with a system of integrated sensors – the data is organized, available and easily accessible on shared platforms to everyone
- We have an ensemble of modular and integrated models and tools that are widely used to test important hypotheses at multiple scales and timeframes across the network
- We are viewed as an open, inclusive, collaborative community of researchers and educators

Our 4 Major Goals – the Focus for the Next 3 Years

Goal 1: Demonstrate the transformative nature of Critical Zone science

Goal 2: Integrate specific elements of infrastructure for the Critical Zone network by 2018

Goal 3: Increase awareness of and participation in Critical Zone science and network activities as an open and inclusive community

Goal 4: Articulate a compelling vision and structure for the future network of CZOs