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The Grand Challenges: Mapping the System of K-12 STEM Education. Preliminary report.

Despite billions of dedicated dollars, many of our nation's kids do not have access to quality science, technology, engineering, and math education. This talk introduces a new approach to reverse this story and enable lasting change, grounded in a simple insight: you can't solve a problem you don't understand.

100Kin10's grand challenges is an innovative approach to mapping a social system, grounded in ecology and network science and resulting in an unprecedented representation of the challenges facing quality K-12 STEM education (<https://grandchallenges.100kin10.org/>). Through 2+ years of data collection and analysis with thousands of stakeholders, we see that, like systems in the natural world, each problem in the STEM education system is connected to at least one other problem; but despite this interconnection, the problems are not all equal. There are some that, if solved, have greater influence across the system.

With this map, all kinds of stakeholders - from teachers and policymakers to researchers and district leaders - can access a full picture of the system, gain a deeper understanding about its many components, and see how they can contribute. It also enables the design and development of systems-wide solutions to improve STEM learning across our nation. (Received September 26, 2017)