

## What You Can Do to Transform Education

When Jack Hidary told me about National Lab Day, I got chills. The tag line for National Lab Day is: A National Barn-Raising for Hands-On Learning. Using the internet and social computing technologies, with the support of the White House and the business and scientific communities, National Lab Day reaches out to the education community, providing a tool set that brings context, community, and passion, and that has the potential to transform our educational system into a true learning community.

How does this work exactly?

1. Teachers, scientists, organizations, and individual volunteers are invited to go to: National Lab Day
2. Then, there's an opportunity to follow the track that best identifies how you would like to contribute. Or, you can simply browse existing projects.

As you browse, you might come across the teacher in Couer D'Alene, Idaho, wanting to build a working model of a river watershed. Or, the Levittown, New York, teacher wanting help with a project on Superconductivity. You might come across the teacher in Chicago, Illinois, working with students to design, build and test bridges, and seeking engineers and Department of Transportation contacts.

Why is this one of the most important movements in education today?

Research shows that hands-on learning is powerful and effective. In the well-meaning efforts to create standards in education -- context, creativity, and our natural inclinations to explore and play, have been replaced with a mountains of homework and a curriculum that may not effectively prepare youth for the 21<sup>st</sup> century.

In schools, failure is stigmatized, emotionally disabling, and has become a label and a measure rather than part of a feedback system supporting iteration and exploration. The most productive scientists and inventors will tell you that they fail constantly, all day long. Each failure informs them, guides them toward a new direction, a new hunch, a new possibility. With hands-on learning, failure is iteration, in the spirit of how the most accomplished scientists work.

In the somewhat misguided efforts to “teacher proof” the educational system, we have lost what good teachers bring to the system: passion, curiosity, love of learning, and an ability to create a learning ecosystem in a classroom, a school and a community. Think about what touched you most in school. At a dinner, discussing education with a number of Silicon Valley CEO’s, to a person, the most significant memories were those of passionate teachers as role models.

We don’t find our passions. They find us. Not through hours of homework and standardized tests; rather, through engagement, exploration and in context learning. According to Stuart Brown, MD, author of Play: How it Shapes the Brain, Opens the Imagination, and Invigorates the Soul, highly successful people have a rich play life. Brown further suggests that play is a “biological necessity, contributing to the learning of emotional control, social competency, personal resiliency and continuing curiosity....(many) other life benefits accrue largely through rich developmentally appropriate play experiences.

An adult who has “lost” what was a playful youth and doesn’t play will demonstrate social, emotional and cognitive narrowing, be less able to handle stress, and often experience a smoldering depression.”

Brown talks about the value of recalling your play history. You can take time to do that here.

National Lab Day has the potential to revitalize a national learning community by offering an infrastructure to facilitate the spirit of play and exploration in our classrooms, schools and communities.

While there have been efforts in the past to encourage hands-on learning, the sheer scale of the consortium gathering around National Lab Day gives it the potential to have a profound transformational impact on education and learning. Respected scientific communities and organizations, including: ACS, IEEE, AAAS and 100+ other scientific societies will be promoting this effort to their members.

The Bill and Melinda Gates Foundation and the MacArthur Foundation have kicked in the capital to get the project going.

In addition to the White House, other key federal agencies have joined in, including: NASA, the Department of Energy, the Department of

Education, the National Institutes of Health and the National Science Foundation.

The National Science Teachers Association and the National Education Association are supporting this effort as are a growing number of companies, including Microsoft and Texas Instruments. O'Reilly and Make have contributed project guides to National Lab Day.

If you're reading this, please join us! Click on the links, join the movement, and lend your energy, skills, or resources to renewing education and learning for the 21<sup>st</sup> century.