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Excellence in Physics Education Award Talk: PhET Interactive Simulations: Making physics engaging and accessible for all[1]

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With a collection of 142 interactive simulations for teaching and learning, and nearly 100 million uses per year worldwide, the PhET Interactive Simulations project has come a long way since its beginning in 2002. Founded as the "Physics Education Technology" project, the vision was to make physics engaging and accessible for all learners by tapping into a natural curiosity about real world phenomena. From motion to E&M to quantum, each simulation creates an inviting, interactive environment where students learn through exploration, where the invisible is made visible, and which include the visual models that physicists use. Today, teachers use PhET simulations with diverse students from elementary through college, and in diverse ways from interactive lecture, to lab, to homework. The journey from 2002 to today has included many cycles of innovation and learning as PhET expanded from physics to chemistry to math, from college to middle school, and from a local resource to an international mainstay. We will reflect on the challenges and the successes, and how physics and the physicist's perspective has shaped and advanced our work throughout. Finally, we will look ahead to what's on the horizon for PhET – bringing physics learning to students with disabilities, advancing assessment of science practices, and building a sustainable business model.

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