

# Improvisation Engages Students in STEM-Discovery

Dr. Heath Tims and Kyle Prather

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<i>Principal Investigator:</i>	Heath Tims
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**What is the outcome or accomplishment?** (1-2 short sentences describing it and why it is transformative; 50-word maximum suggested)\*

The STEM-Discovery program has developed a series of improvisational games as a way to engage students and aid in team dynamics. The larger goal of these exercises is to help students gain awareness of their own self-censoring.

**What is the impact?** (1-2 simple sentences describing the benefits for science, industry, society, the economy, national security, *etc.*; suggested 50-word maximum)

Faculty, teachers, and students support the positive effect on team building that “improv” activities appear to have. The project team has continued to include these activities in the Discovery Weekends for both students and teachers. We developed a model, language, and activities that can be used for other programs.

**What explanation/background does the lay reader need to understand the significance of this outcome?** (1-2 paragraphs that might include, for example, more on who, when, where; NSF's role; support from multiple directorates/offices; what makes this accomplishment unique; additional intellectual merits; or broader impacts such as education, outreach, or infrastructure improvement that are integral to this outcome; suggested 150-word maximum)

We facilitated a series of improvisational games, with the intent to cultivate a mindset that accepts and builds on the ideas of others. Improvisation theatre is built upon the tenet of "Yes, and..." When a team member makes an offer, the team celebrates and accepts the idea, and builds on it. Students often self-censor ideas for fear of how they may be perceived. “Improv” teaches students to support one another, and to expect safety and support from one another. Students are encouraged not to pre-plan their responses, which help train them to be better listeners. We all may have varying degrees of phobia while being looked at while we share our ideas, and improvisation and "Yes, and..." builds a safe environment of warmth and mutual acceptance that encourage the sharing of new ideas.

There was an added benefit to playing improvisational games with professors and teachers. Students often unconsciously adopt the attitude of their professors, perhaps leaning away or leaning in to the subject matter, and having their own sense of playfulness or seriousness towards new ideas. Seeing professors participate in games alongside them helped students to feel more involved and less inhibited.



*Improv activities from STEM-Discovery used at Analysis and Investigation of Cyber Scenarios camp.*