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Can They Say That?

Uncovering Hidden Truths Through Improv Theater

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Huntsville, AL

SOCIETY OF RELIABILITY ENGINEERS

Huntsville
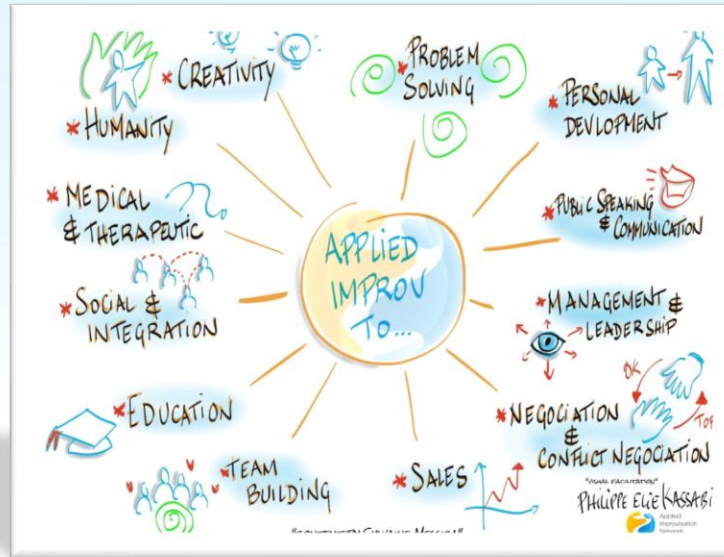
ImagEnS Lab
reImagining Engineering Systems

Background

- Project Management & Systems Engineering processes are large scale complex engineered human systems

- People interacting produce emergent behaviors

- Unexpected behaviors create unwanted outputs
  - Schedule delays
  - Cost overruns

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Background

- Physical systems can be tested and analyzed
- Human systems resist traditional research methods
  - True causes of failure can be obscure
  - Uncomfortable workplace topics are difficult to elicit
- Novel approaches may provide new insight for PM&SE challenges
  - Improv Theater

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Improv

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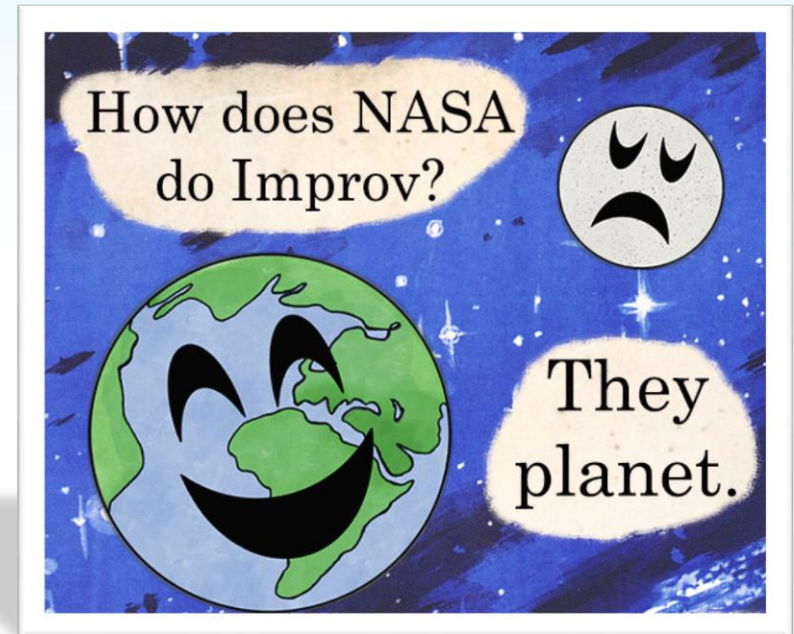
- Practitioner inhibitions can be removed in comedic settings

- Honest discovery, observation, and reaction is better than contrived invention (Close and Halpern)

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Methods

- Scene framework development
  - Partnership with NASA and theater experts
- Recruit and train members of the Systems Engineering community
- Preliminary workshop
  - NASA 2019 Cost and Schedule Symposium
  - Video recording to assist analysis
- Post-show survey of actors and audience

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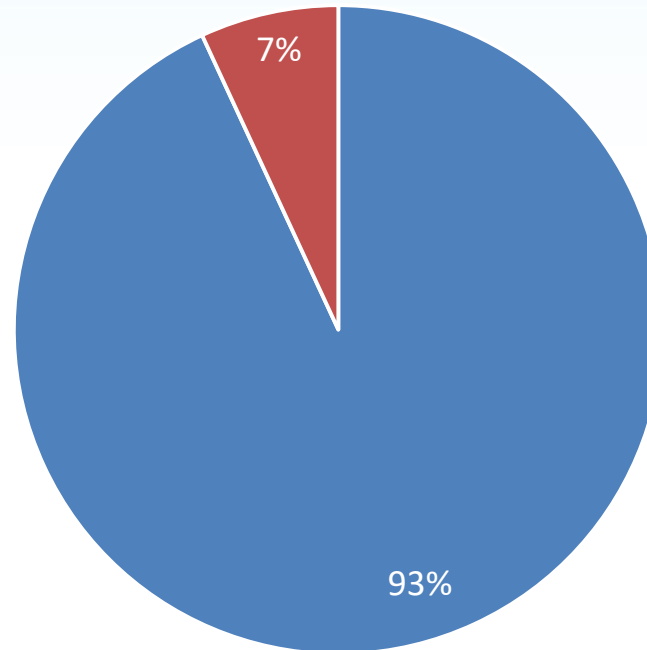ALABAMA IN HUNTSVILLE

Frameworks

- Developed by improv theater experts
- Tested with actors and systems engineering students
- Frameworks used in workshop supported by audience suggestions
  - Comment Cards
  - Live Suggestions
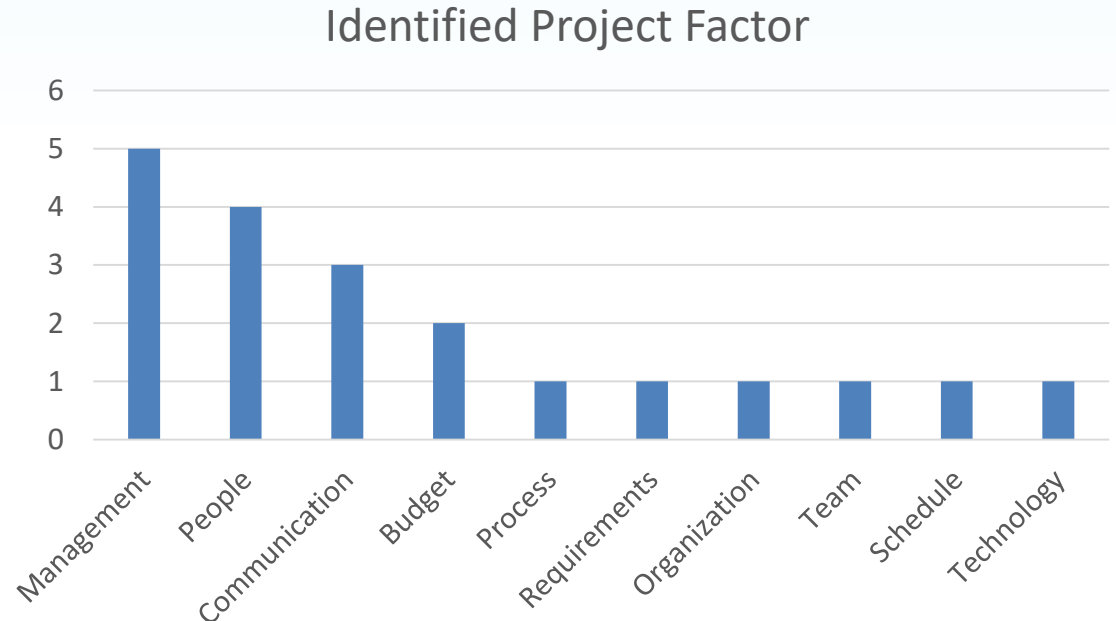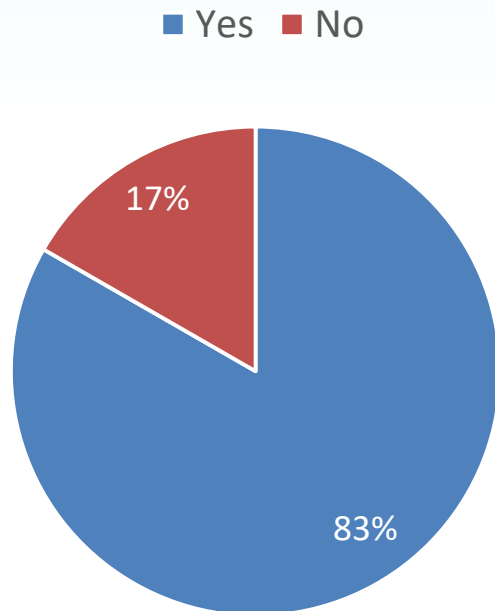
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Workshop Results

Is improv an effective way to uncover hidden truths?

Workshop Results

Were hidden truths in PM and/or SE uncovered in the improv show and, if so, what were they?

Yes ■ No

17%

83%

Identified Project Factor

Management	5
People	4
Communication	3
Budget	2
Process	1
Requirements	1
Organization	1
Team	1
Schedule	1
Technology	1

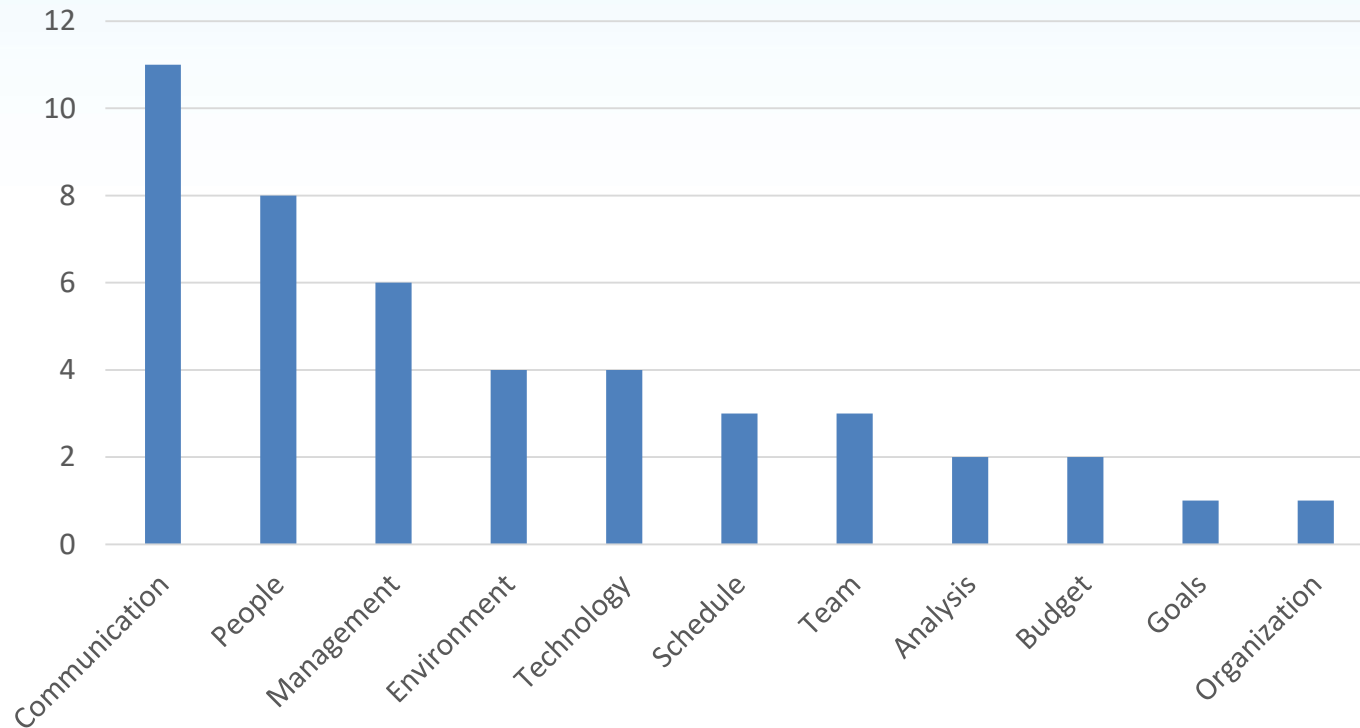THE UNIVERSITY OF
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Uncovered Truths

- Workshop
  - People
    - "The improv shows the different personality types at NASA."
  - Communication
    - "Hidden truths boil down to one - importance of clear communication through project's life cycle."

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Comment Card Results

Some topics can be difficult to address in the workplace. What is one project related hidden or inconvenient truth you would like to see discussed that no one really talks about?

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Uncovered Truths

- Comment cards
  - Communication
    - "Even though not all of us are engineers, we need to be included in technical discussions to better find cost estimating relationships. "
  - People
    - "(There is a) culture of over-optimism (in project cost estimates) ."

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Conclusions

- Improv workshop highlights communication issues within NASA Cost and Schedule community

- Audience receptive to workshop concept, would participate in future efforts

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Next Steps

- Scene framework refinement

- Workshop with professional actors and community members at MSFC

- Additional workshop offerings at various engineering conferences and training events

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Questions?