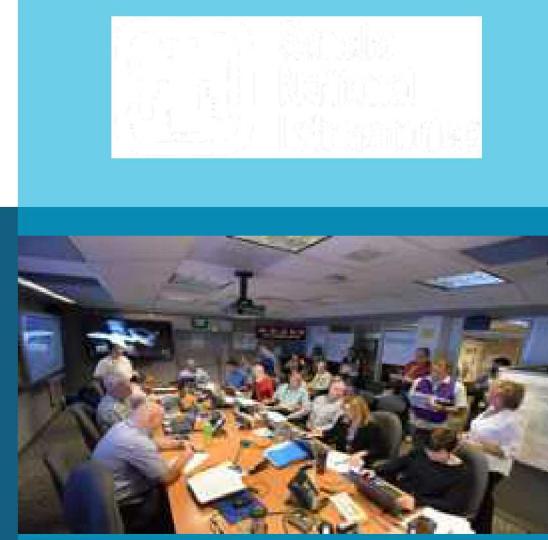
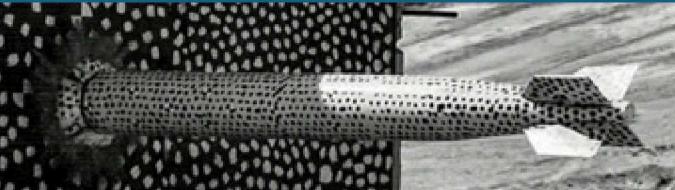
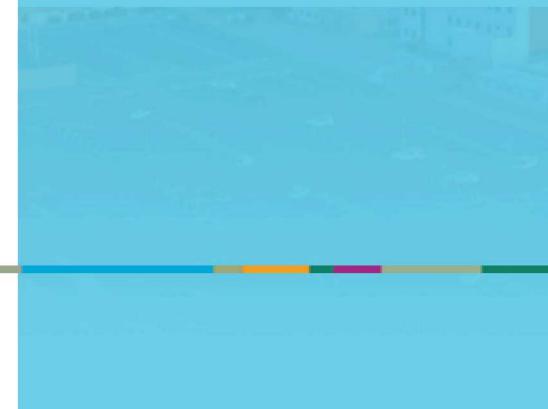


# Rapunzel Workshop



SAND2018-11447PE



*PRESENTED BY*

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## 2 Drilling for Forward Supply

### Fundamental Challenges

- Material reduction (depends on conditions)
- Tool rotation
- Navigation
- Steering
- Obstacle/formation detection
- Tool life
- Rapid, moderate diameter HDD

### Performance Limiters

- Power = speed
- Cuttings management
- Borehole stability

### Opportunities/Challenges

- See above

