My Career in Failure Analysis Consulting

Presentation by:
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Senior Staff Consultant
Engineering Systems, Inc.
Background

- B.S., Mechanical Engineering, Texas A&M University, 2006
- M.S., Mechanical Engineering, Colorado School of Mines, 2010
- Ph.D., Mechanical Engineering, minor in Chemical Engineering, Colorado School of Mines, 2012
- Began working at ESI in May 2013
- Fire and Explosions Practice Group
Applying the Scientific Method

- Identify the Problem
- Define the Problem
- Collect Data
- Analyze Data
- Develop Hypotheses
- Test Hypotheses
- Select Final Hypothesis
Tools and Techniques

- Photography
- Measurements
- Non-Destructive Testing
- Destructive Testing
- Research on Standards, Product Manuals, Literature
- Documentation Review
- Calculations
- Computer Modeling
- Experiments with Exemplar Components
Gas Heater Flare Connection
Analysis Via CT Scanning (Exemplar Fittings)

Intact Flare

Pulled Out Flare

No Flare
Applying the Scientific Method

- Identify the Problem
- Define the Problem
- Collect Data
- Analyze Data
- Develop Hypotheses
- Test Hypotheses
- Select Final Hypothesis
Key Skills to Teach

- Math and science
- Inductive and Deductive Reasoning – The Scientific Method
- Photography
- Writing
- Oral Communication
- Debate Skills
Volunteer Speakers for Classrooms, Events

Physics Summer Camps for Girls

Equity Training for Educators

High Tech High Heels (Dallas Organization)
http://www.hightechhighheels.org/

National Alliance for Partnerships in Equity
Questions?

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