

Empowering Student–Led Organizations to Create Effective Safety Policies

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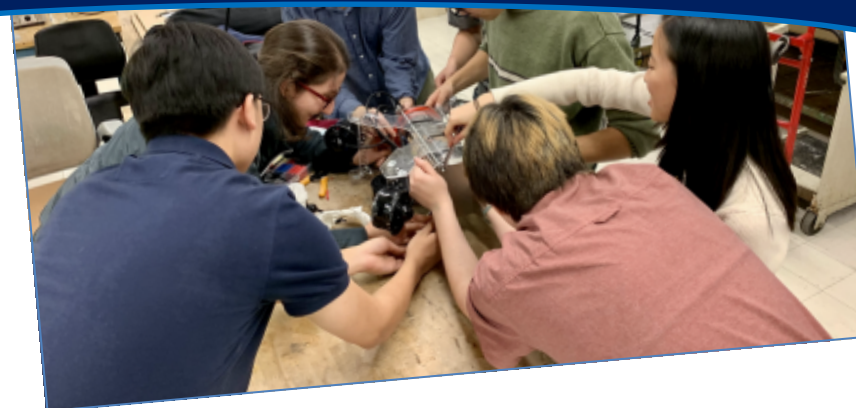
ACS DCHAS Presentation

Student Life on Campus

- Considered vital to post secondary experience
- Chance to hone leadership
- Apply knowledge



Goal: Empower students to increase safety in these operations & have metrics for this.



Stakeholders

- A. University Leadership
- B. Department
- C. Faculty
- D. Student
- E. EH&S



Challenges and Opportunities

- Challenge 1: Nature of Student Groups
- Challenge 2: Identification of Hazards
- Challenge 3: Identifying Current Infrastructure Blind Spots



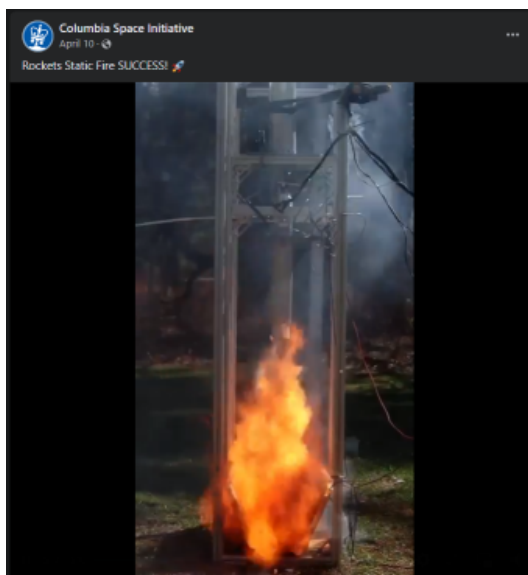
Challenge 1: Nature of Student Groups

Stakeholders:

- A. University Leadership
- B. Department
- C. Faculty
- D. Student
- E. EH&S

The Concerns:

1. They value trial and error
2. Busy mentors



The Opportunities:

1. Unify on helping group achieve goal
 - Safety recommendations vs. requirements
 - Seek local resources
 - Example: Rocketry's fire safety concerns
2. Support and make allies with those present
 - Non-judgmental conversations to understand constraints
 - Provide resources as option for additional help
 - Example: FSAE fire extinguishers

Empower as ally

Empower who we can

Challenge 1: Nature of Student Groups

Stakeholders:

- A. University Leadership
- B. Department
- C. Faculty
- D. Student
- E. EH&S

The Concerns:

- 3. Yearly student turnovers



The Opportunities:

- 3. SOPs help, not hinder

- Knowledge transfer
- Encourages longer term training
- Example: Rocketry's new enthusiasm for SOPs

Empower with tools

Challenge 2: Identification of Hazards

Stakeholders:

- A. University Leadership
- B. Department
- C. Faculty
- D. Student
- E. EH&S

The Concerns:

1. University Governance may not realize hazard severity
2. Reliance on self-reporting

The Opportunities:

1. EH&S must recognize & alert

- Latest information needed
- **Empower via structure**

2. Systemic change

- For current and new groups

- **Empower via structure**
- Examples: discussions with Provost & Deans' offices,

Chemical Engineering Car Club



Challenge 2: Identification of Hazards

Stakeholders:

- A. University Leadership
- B. Department
- C. Faculty
- D. Student
- E. EH&S

The Concern:

3. Limits of in-house knowledge



The Opportunity:

3. Seek outside resources if needed

- EH&S knowledge may not perfectly match
- **Empower as resource**
- Example: I-5/AE switch to electric car, Rocketry liquid Nitrous Oxide use

Challenge 3: Infrastructure Blind spots

Stakeholders:

- A. University Leadership
- B. Department
- C. Faculty
- D. Student
- E. EH&S

The Concerns:

1. Insurance
2. Non classroom settings

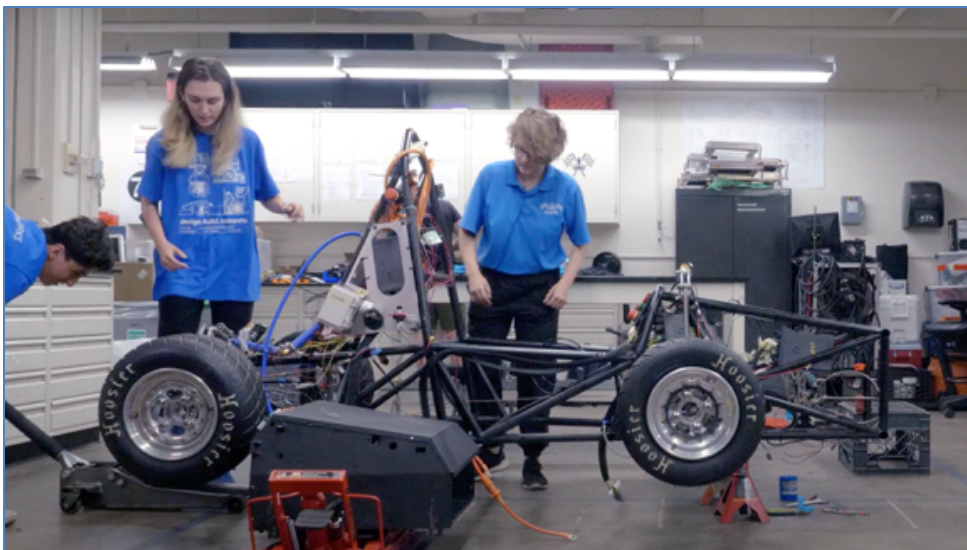
The Opportunities:

1. Always ask Office of Risk Management

- Not all activities are guaranteed to be covered
- **Empower as resource**
Example: Rocketry at competition

2. Gentle reminders

- Remind through SOPs
- Example: oil situation in garage
- **Empower as ally**



Challenge 3: Infrastructure Blind spots

Stakeholders:

- A. University Leadership
- B. Department
- C. Faculty
- D. Student
- E. EH&S

The Concerns:

3. Student ownership in safety culture



The Opportunities:

3. Propose safety position held by student

- Learning experience for student
- **Empower via structure**
- Keeps EH&S up to date on group
- *Example: Silver Snoopy*

Measuring Success

- **Quantitative :**
 - Number of safety documents spearheaded by students
 - Decrease in number of accidents
 - Number of higher hazard groups identified
- **Qualitative:**
 - Positive relationships
 - Groups reaching out for advice or help
 - Sparking discussion of systemic change/reflection
 - Increased safety culture mentality within group
 - Groups using provided resources



Picture Credits

- **Slide 2:**
 - University of Toronto Mechanical Engineering Dept (<https://www.mie.utoronto.ca/programs/undergraduate/mechanical-engineering/>)
 - Columbia University Robotics club (<https://www.columbiaroboticsclub.com/mate-rov>)
- **Slide 3:** Columbia Daily Spectator (<https://www.columbiaspectator.com/spectrum/2020/04/11/columbia-announces-online-commencement-ceremonies-barnard-to-postpone-commencement/>)
- **Slide 4:**
 - Columbia Chemistry: <https://outreach.chem.columbia.edu/>
 - Wikipedia: https://en.wikipedia.org/wiki/History_of_Columbia_University
- **Slide 5:** Columbia Space Initiative: <https://www.facebook.com/ColumbiaSpaceInitiative>
- **Slide 6:** Columbia News: <https://news.columbia.edu/news/heres-every-columbia-class-day-speaker-we-know-so-far>
- **Slide 7:** YouTube <https://www.youtube.com/watch?v=QrxAzfPgDrA>
- **Slide 8:** Meme wiki: https://en.meming.world/wiki/You_know,_I%27m_something_of_a_scientist_myself
- **Slide 9:** Columbia Engineering: <https://www.engineering.columbia.edu/news/formula-racing-design-electric-car>
- **Slide 10:** Monochrome Watches <https://monochrome-watches.com/history-snoopy-omega-speedmaster-apollo-13-nasa/>