



SCAVENGING FOR BIOSAFETY:

Increasing program awareness and buy-in

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THE UNIVERSITY OF
CHICAGO

**Office of
Research Safety**



Wet labs at UChicago (PI)

- **Biological Sciences Division: 263**
- **Physical Sciences Division: 60**
- **Molecular Engineering: 22**
- **Social Sciences Division: 7**

210 PIs with IBC protocols



THE UNIVERSITY OF
CHICAGO

**Office of
Research Safety**



Office of Research Safety

Current structure formed in 2014

Report to Vice-Provost for Research



Biosafety (4 BSOs)



Chemical Safety (2 CSOs)



Rad Safety (3.5 Health physicist & RSO)



Laser Safety (0.5 LSO)



Safety Specialists (4)

- Generalists
- “Boots on the ground”





ORS Scavenger Hunt goals...

- Build awareness of ORS roles and responsibilities
- Promote ORS functions including training, consultation, and inspection
- Provide fun and memorable safety education
- Generate good-will and increase buy-in from researchers and administration





ORS Scavenger Hunt

- Coincide with



- Inclusive topics covering other aspects of laboratory safety: Bio, Chem, Rad, Laser, Fire
- Novel idea advocated by ORS Director and received funding from University leadership
- Fund covered the software and cash prize





Introducing: The Safety Games



**May the Risks
Be Ever in
Your Favor**

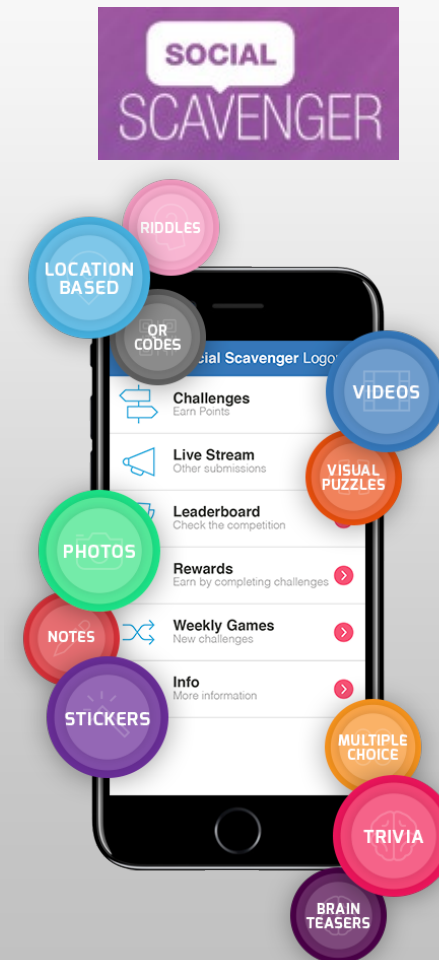




Software/app

Factors to consider

- Available game formats
 - Photo/Video
 - Trivia
 - GPS/QR code
- Team or individual
- User friendly and device compatibility
- Flexibility in review and assign “bonus points”
- \$\$\$

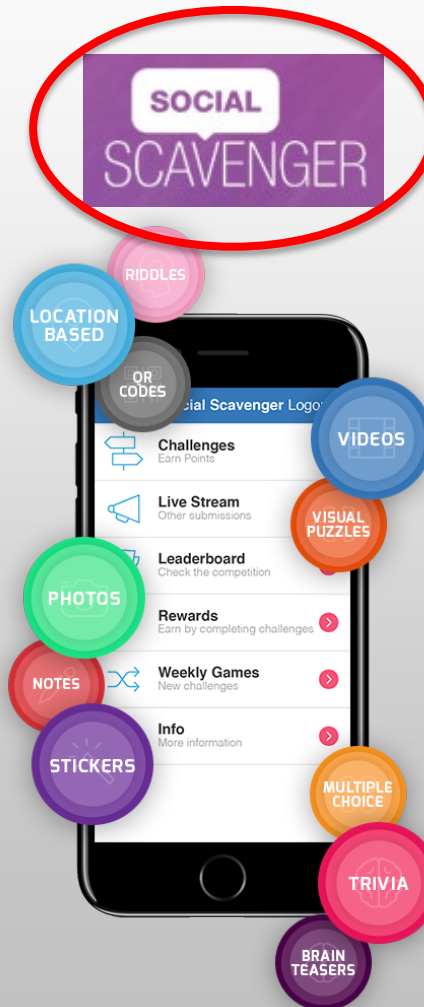




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Game plan: October 2018

- Three sessions
 - One session / week
 - Each session: ~ 20 challenges ; 1.5 days to complete
- 18 teams with total 68 participants
- Up to four members / team





Promoting the event

- Email (various lists)
- Newsletter
- Flyers
- Inspection
- Training

- [Kick-off Video](#)





Sample tasks

- Simple trivia:
 - How many risk groups are there?
 - Multiple choice: IBC membership
 - Fire extinguisher types
- More in-depth information
 - Make a video of proper donning/doffing of PPE
 - Photo of proper sample transport





Sample tasks

- Encourage collaboration: Teams got extra points if they consisted of members from different labs/departments
- Make a video showing how “safe science is good science”





Sample tasks

- Some tasks based on ORS findings during inspections and access to incident reports
- Injured student couldn't find the ER: “Find the ER”
- Didn't know difference between ORS and IBC:
 - QR code at ORS Office: Come to the office, grab a snack
 - Find QR code on IBC website
 - “Find a biosafety officer”





Weekly explanations/correct answers

- How many risk groups are there and which are represented at UChicago?

“There are four risk groups for microorganisms – from Risk Group 1 to Risk group 4. The higher the risk group, the more hazardous the microbe. **The research at UChicago Hyde Park campus includes mostly risk group 1 and 2 agents. We work with risk group 3 pathogens at the Howard Taylor Ricketts Laboratory.** There is no work with risk group 4 pathogens anywhere at the University.”

- What is the optimum % alcohol for disinfection?

“**The optimum alcohol percentage for decontamination and inactivation of pathogens is 70%.** If it’s too low it will not kill the bugs. If it’s too high it will quickly fix proteins and not allow full penetration of a microscopic clump of organisms.”





Weekly explanations/correct answers

- GPS challenge to find the Emergency Room (which had just moved):

“Some folks had a hard time finding the Emergency Room. Sorry about that...but that’s also the point. In the past we’ve had scientists who injured themselves and needed the ER immediately but couldn't find it. They had to spend extra time (and pain) wandering around campus trying to find it. Also, as at least one team indicated, the Emergency Room has recently changed locations. **Hopefully you’ll never need the ER, but if you do, now you’ll know where it’s located”**”





Weekly explanations/correct answers

- How scientifically diverse is your team?

“We saw some great examples of research collaboration/diversity, but one lab included actual biological diversity. We were glad to see that your pet reptile is safe and sound in a space somewhere that is not inside a laboratory! Nice work. We were also pleased to see photos with PIs in them. **Your PI is ultimately in charge of safety in the lab. We’re here to help your PI help you!**”

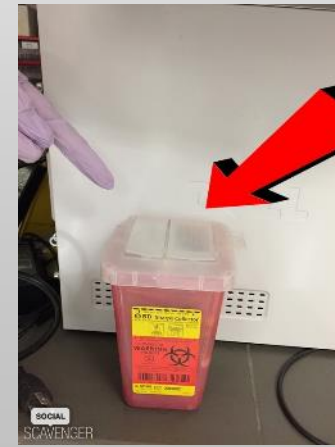




Weekly explanations/correct answers

- Give an example of proper sharps disposal

“Used needles do indeed go into a designated sharps container. At least one team pointed out that needles should never be re-capped prior to disposal. We were happy to see that none of the sharps containers were over-filled. **Overfilled sharps containers and re-capping of needles are the main causes of needle sticks in a research lab.**”

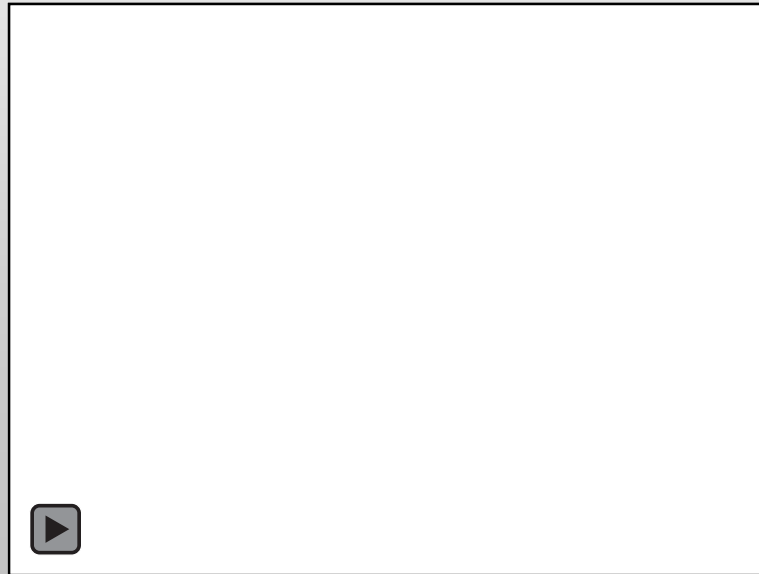
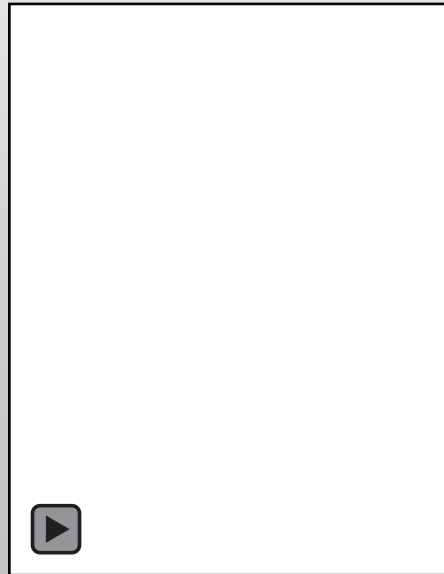




Weekly explanations/correct answers

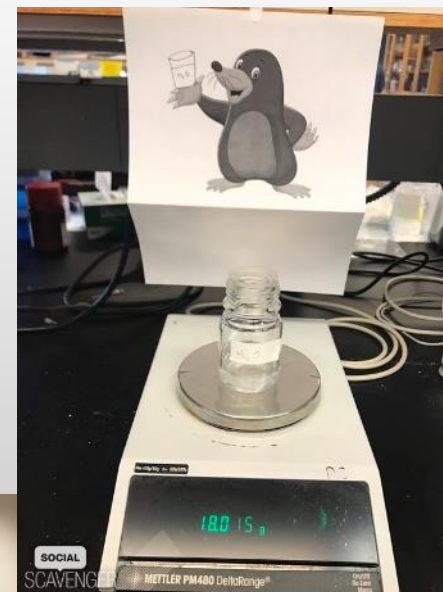
- Show a video of proper glove removal

“We were pleased to see such good demonstrations of glove removal...but we were super-pleased to see at least two teams wash their hands afterward.”





Creative photos



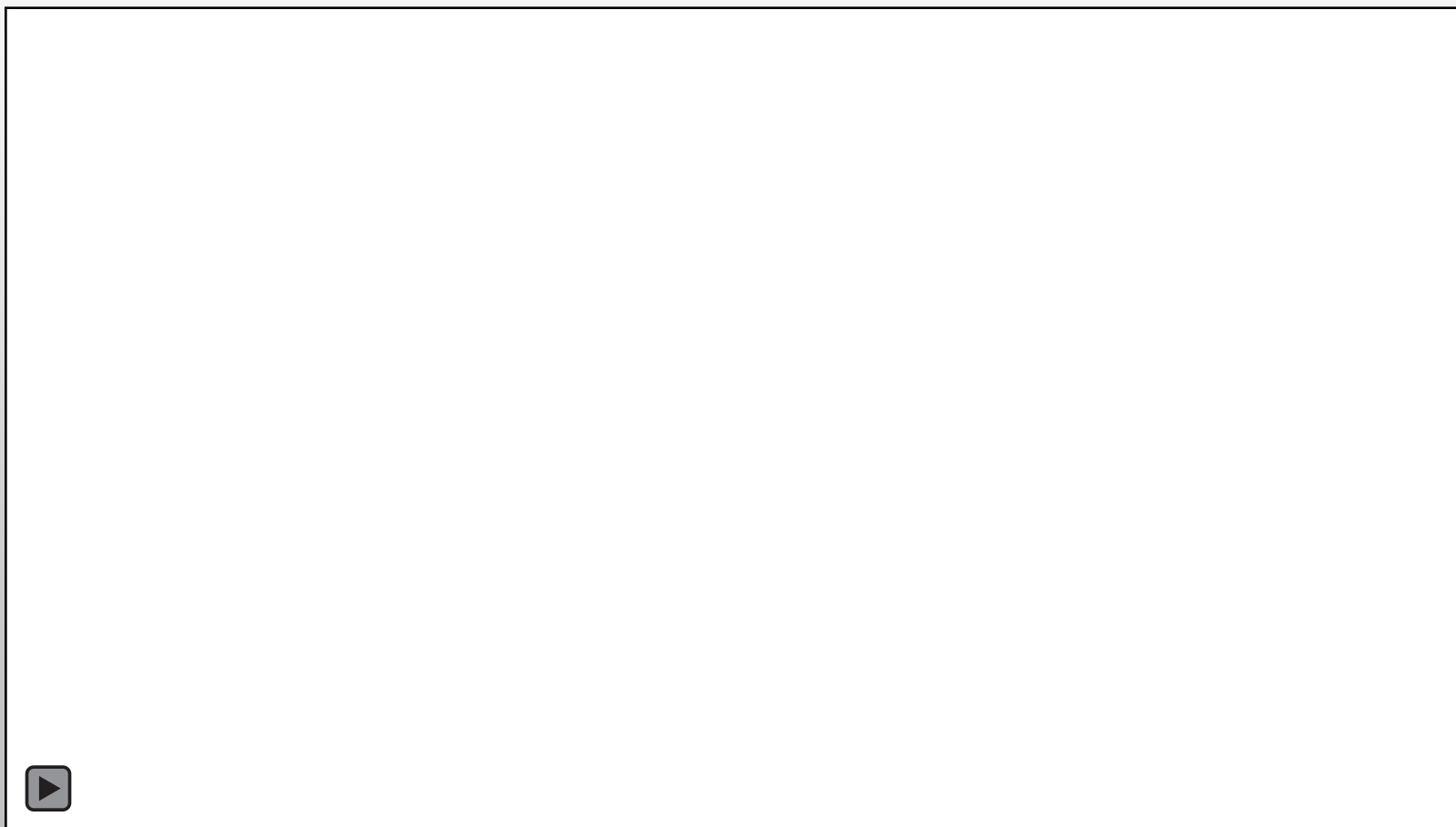


Video compilation: top 3 teams

- Catered (light refreshments)
- Oscar-style award ceremony
- Trophies for top 3 teams
- Smaller prizes for non-winners who were creative
- Open to everyone who registered
- T-shirts for all participants
- First place video: <https://youtu.be/h86lUI56Uyk>
- Second place video: <https://youtu.be/f7e3eJU-8ZQ>
- Third place video: <https://youtu.be/6mKI0RJUMH0>



2018 Safety Games 1st place





Survey says...

We had to think about how our lab approaches safety and also learned some helpful facts.

- **Did the scavenger hunt broaden your awareness of Biosafety, Lab Safety, or safety in general?**

A GREAT DEAL	A LOT	A MODERATE AMOUNT	A LITTLE	NONE AT ALL
26.32%	31.58%	36.84%	5.26%	0.00%
5	6	7	1	0

It was a great refresher, so much better than a video, and I learned a lot about the stuff that I don't work with like radioactivity

I started transporting my samples properly after this event

Looking for the safety practices in my lab and neighboring labs made me aware that a lot of safety related practices. I also had no idea that the Office of Research of Safety in Cummings existed before the hunt.

We found out that some of the information posted near the door of our lab was out of date, and ORS came and fixed it for us!



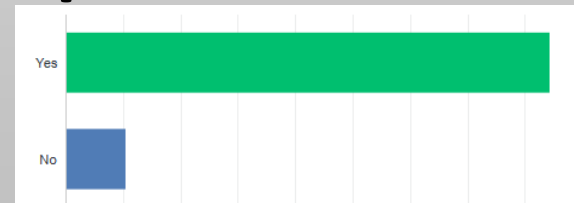


Survey says.....

- **Did the scavenger hunt effectively provide you with a stronger background of the resources available from the Office of Research Safety?**

EXTREMELY EFFECTIVE	VERY EFFECTIVE	SOMEWHAT EFFECTIVE	NOT SO EFFECTIVE	NOT AT ALL EFFECTIVE
31.58%	57.89%	10.53%	0.00%	0.00%
6	11	2	0	0

- **Did the scavenger hunt enhance your safety knowledge and/or practices?**





Survey says.....

- “This was very educational! I think the fun game aspect as well as rewards for winning were very good motivation to learn about safety in labs. It was also good bonding for our team members”
- “I enjoyed the games a lot and learned a lot about safety in the context of my daily work.”
- “This was a brilliant idea by the office, and should be written up in a journal of academic laboratory safety.”
- “Very fun, refreshed my safety knowledge, and also learned a lot along the way.”





Room for improvements

- “Need to be more specific about how to earn bonus points instead of assigning it arbitrarily” “I definitely would have liked more feedback on the challenges where we could get bonus points.”
- “Less focus on biosafety! Design it so that people who are not in the life sciences are not at a disadvantage!” “It was very biology oriented which was not very useful to me as a physics grad student.”
- “Difficult to work around group meetings, seminars, etc., especially if team members are from different labs and subfields.” “If I had more time to get people together.”





ORS Scavenger Hunt

- Build awareness of ORS roles and responsibilities
- Promote ORS functions including training, consultation, and inspection
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Goals





You can do this too...

- Tech constraints: Paper vs digital
- Budget constraints:
 - Prize doesn't have to be cash
 - Plastic trophies, snacks, and t-shirts are cheap
- Tailor the hunt to your institution's needs
 - What problems do you see consistently?
 - What should your labs to be more aware of?





Safety Games Vol. 2: Hunt for the Culture Stone





Thanks!

- Chantene Zichterman (ORS Administrator)
 - Ka Yee Lee (Vice Provost for Research)
- Larry Hill (Associate VP for Strategic Initiatives)
 - Joe Kanabrocki (ORS Director)
 - James Wright and Habib Khan (CSOs)
 - Nick Noriea (BSO)
- Jeff Melton, Jay Schroeder, Chris Delgado, Kimberly Mormann (LSS)





Technical difficulties

- Some function only on Android; GPS more accurate on iOS
- Video length unlimited on Android but limit to 3 min on iOS
- Long multiple choice answers truncated on small phones
- Challenges automatically posted when created- cannot create “draft” first and display later
- Duplicate submission makes awarding bonus points challenging (accidentally award points more than once)
- Team got accidentally deleted and cannot be easily restored
- There are functions built-in without clear indication on what it does- “approve”, “reject”, or “feature” a submission





Details

- App cost \$650: Up to 50 teams for 1 month
- Able to access data for 1 year
- Able to download ALL data at any time and keep it

- Prizes???

