Breaking Through the Noise: Virtual Training to Effectively Communicate Science

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RUTGERS Environmental and Occupational Health Sciences Institute | EOHSI

NIH National Institute of Environmental Health Sciences

Abstract

The ability to effectively communicate is a key requirement for scientists to disseminate their research. Due to the COVID-19 pandemic, the Rutgers Summer Undergraduate Research Fellowship (SURF) was run remotely for 6-weeks. In addition to pursuing independent virtual projects, students met twice weekly with instructors to engage in career development activities. We sought to develop and evaluate a series of interactive trainings for SURF students to build their communication skills. Twenty undergraduate students across the U.S. participated in activities to: 1) distill their scientific message, 2) develop effective graphical and written abstracts, and 3) build and utilize a professional profile on LinkedIn to communicate their science. Zoom breakout rooms were used for small group interactions. Competitions across the activities aided student involvement. Pre- and post-program self-assessments using 5-point Likert rating scales were conducted online. Each participant had a unique identifier that was blinded to instructors. The greatest improvements in communication were in the development of written and graphical scientific abstracts (means: pre-1.5; post-3.4, $p<0.0001$). Likewise, students were able to not only develop effective LinkedIn profiles ($p<0.0001$), but they used their platforms to disseminate graphical abstracts to the scientific community. Improvements were also made in the ability of students to convey complex ideas simply ($p=0.007$), consider their audience ($p=0.02$), and communicate the 'so what' of their research in an understandable manner ($p=0.004$). Targeted training in diverse communication skills can improve students' ability to organize, communicate, and disseminate key research findings. Supported by R25ES020721, T32ES007148, P30ES005022, UL1TR003017, U54AR055073 and the SOT and ASPET SURF Intern Programs.

Training Session Overview

Didactic Lectures on: **Science Communication** (Alyssa Bellomo, Jaclynn Andres), **Abstract Writing** (Dr. Lauren Aleksunes) and, **LinkedIn** (Dr. Mindy O'Mealia) (Rutgers University)

Interactive Main Session Activities and Small Group Activities in Zoom Breakout Rooms

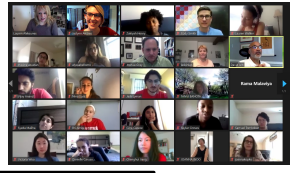
Students Draft their Own Abstracts and LinkedIn Profiles

Peer, Instructor, and Mentor Feedback to Guide Student Revisions

Components of Interactive Training Session

Part 1: "Distilling Your Scientific Message" lecture and small group activity.

- *Breakout room 1: Participants were tasked with creating the most complicated title possible to describe a current or previous research project. The most complicated title in each small group was shared with larger group in main session room.*
- *Breakout room 2: Participants were tasked with revising their complicated title to a simpler and catchy version. Most easy-to-understand title was selected to share in main session room.*
- *Breakout room 3: Prepare a 15 second overview that describes the "why" of your research. The clearest description from each group was shared with main session room.*
- *Each return to the main room included a competition amongst teams using the polling function.*



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15 Second Description

- **Goal:** A sentence or two to clearly describe the "why" of your research (importance, process, etc)
- **How will this work?**
  - Meet in your group for 15 min and share your titles
  - Provide feedback to each other
  - Select the clearest description from your group
  - We will return to the main room and the clearest description from each group will be shared
  - Vote for the favorite description

SCIENCE for the PEOPLE

Part 2: Moderator presents "best practices" for constructing an effective LinkedIn profile page followed by interactive case study of mock LinkedIn profile.

- *Activity 1: Participants are tasked with identifying strong and weak aspects of a mock student LinkedIn profile.*
- *Activity 2: Participants given 2 weeks to construct and revise LinkedIn profiles. LinkedIn profile quality was judged upon completeness and quality of profile content. Top 10 profiles were awarded a gift card.*

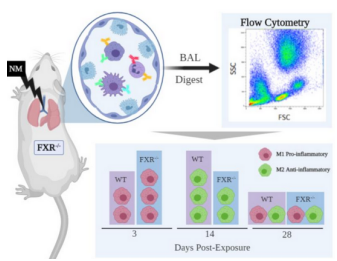
LinkedIn

This summer through the lens of the pandemic has been a crazy time for us all, and not being able to go back into lab has been a challenging experience, to say the least. (I'm suffering from pipette withdrawal!)

I am incredibly fortunate that I was able to continue my research in the Laskin Lab remotely, through the Summer Undergraduate Research Fellowship at the Ernest Mario School of Pharmacy. SURF was an amazing virtual experience and I was able to build great connections with fellow students in the program. Today, I presented the work I had been doing this summer, titled "Farnesoid X Receptor Regulates Immune Cell Activation and Recruitment following Mustard-Induced Pulmonary Injury."

I'm hopeful that I will be able to safely go back into lab soon and keep doing great research!

#SURF #RutgersUniversity #Inflammation #Macrophages

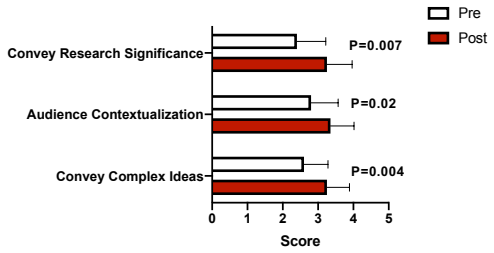


Part 3: Moderator presents "best practices" for constructing scientific written and graphical abstracts.

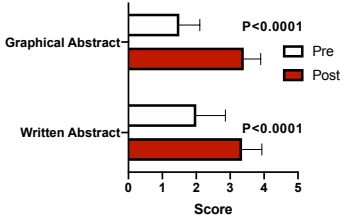
- *Activity: Participants create written scientific and graphical abstracts for virtual research symposium held at end of 6-week program and shared on LinkedIn.*

Assessment of Participant Knowledge

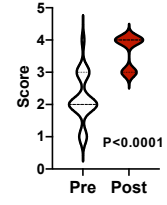
Scientific Message Distillation



Abstract Construction



LinkedIn Page



Summary

- Dynamic, targeted instruction in scientific communication can improve trainee oral, written, and visual communication skills.
- Three SURF fellows are presenting posters during the 2021 SOT Annual Meeting.

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https://surf.rutgers.edu