

Graphical Abstracts to Communicate CounterACT Undergraduate Student Research

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Abstract

Short-term research experiences such as summer fellowship programs provide students with an opportunity to develop their research skills, explore career options, and improve written and oral communication skills. Most summer research programs for undergraduate students require a final poster or podium presentation. At Rutgers University, we developed an interactive session for undergraduates to conceptualize and draft written and graphical abstracts that summarize the major findings of their research; these were distributed at our research symposium. During week 7 of a 10-week summer undergraduate research fellowship, students learned about the major components of an abstract using a variety of examples. Students were also taught common pitfalls to avoid in communicating research findings. After the discussion of each of the opening sections (title, introduction, hypothesis, and methods), students were provided 5-minutes for writing. After each portion of the abstract was composed, students volunteered to share their writings with the group, and the moderator provided constructive comments. Different examples of graphical abstracts were also presented to the students. Thirty students submitted abstracts during week 9 of the summer fellowship program which were assembled into booklets for the final research presentations. This interactive activity received the highest programmatic rating of the summer fellowship with a mean score of 4.58 (± 0.59 SD) on a Likert scale of 1 to 5 with 5 representing the highest possible rating. Other weekly activities were also well-received with mean scores ranging from 3.44 to 4.60. Taken together, an interactive session that includes didactic instruction and student responses allows undergraduate students to begin writing and designing their written and graphical abstracts as part of a summer research fellowship. Supported by NIEHS R25ES020721, P30ES005022, ASPET, and the SOT Intern Program.

Approach

One Hour Activity during a
10-Week Summer
Undergraduate Research
Fellowship (SURF) Program

Instructor breaks down
parts of Scientific &
Graphical Abstracts

5 Min Writing for Each Section

Students Share their Section
with the Group

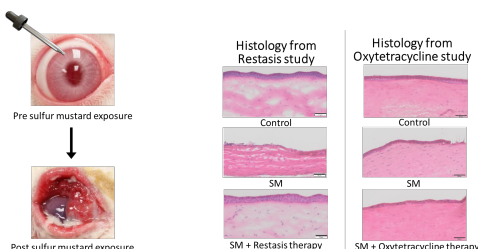
Peer & Instructor Feedback

Mentor Feedback

Example Graphical Abstracts

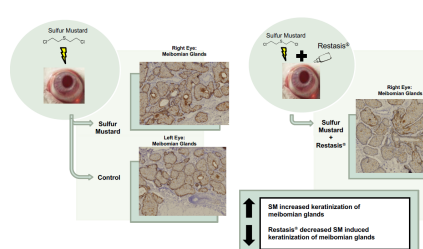
Comparing Ocular Therapies to Improve Corneal Mustard-Induced Injuries

Destiny Durante, Marion K. Gordon
Pennsylvania State University and Rutgers University



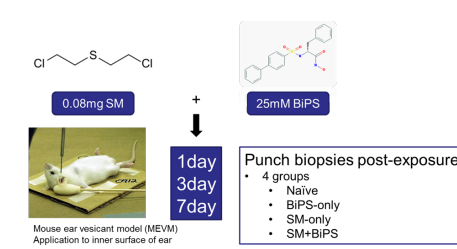
Restasis Modulates Sulfur Mustard Induced Meibomian Gland Rabbit Eyelid Injury

Jieun Kang, Gabriella Wahler, Laurie B. Joseph
Rutgers, University



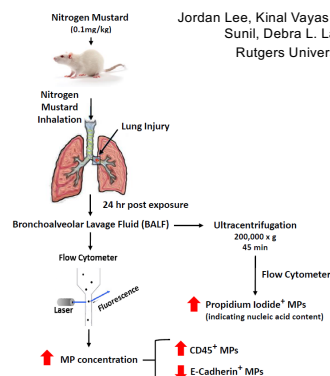
BiPS as a Countermeasure for Vesicant-Induced Injury in Mouse Ear Skin

Tracy Peng, Donald Gerecke, Yoke-Chen Chang
Rutgers University



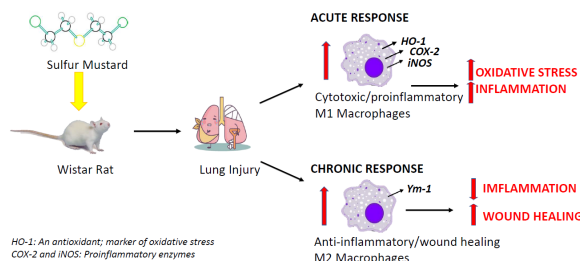
Effect of Nitrogen Mustard Inhalation on Microparticle Formation in Rat Airways

Jordan Lee, Kinal Vayas, Vasanthi R. Sunil, Debra L. Laskin
Rutgers University



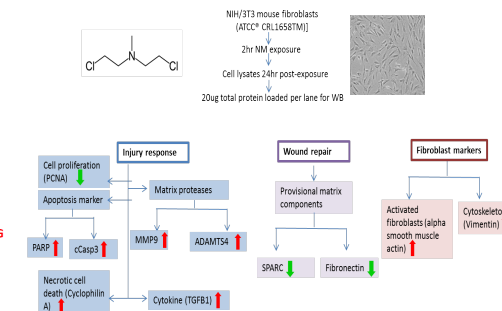
Mechanisms of Sulfur Mustard-Induced Lung Injury

Zakiyah Henry, Yilin Wang, Rama Malaviya, Debra L. Laskin
Winston-Salem State University and Rutgers University



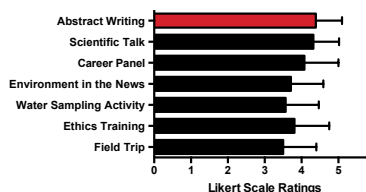
Dose-Response Toxicity of Nitrogen Mustard on Mouse 3T3 Fibroblasts

Amy Hu, Rita A. Hahn, Amy H. Chang, Donald R. Gerecke, Yoke-Chen Chang, Rutgers University



Assessment & Outcomes

- Weekly fellowship activities were well-received by participants.
- Notably, the Abstract Writing activity had the highest rating.
- Eight SURF participants presented research posters at the 2019 Society of Toxicology meeting
- One SURF participant presented a research poster at the 2019 Experimental Biology meeting.



Acknowledgments

