

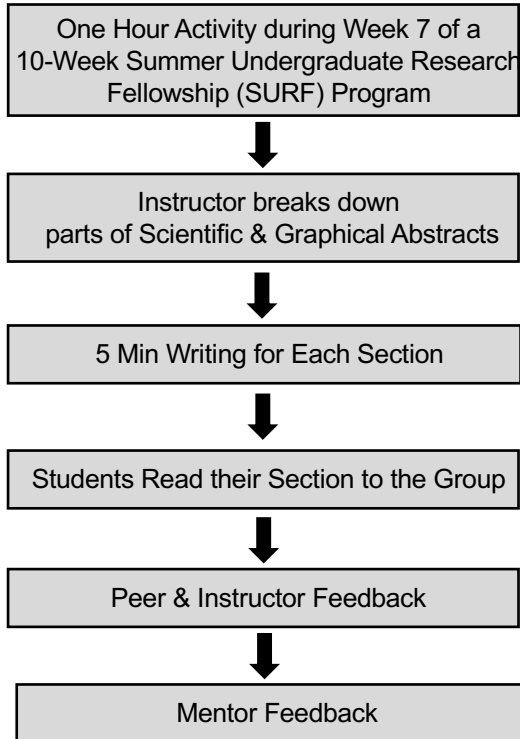
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School of Pharmacy, Dept. of Pharmacology and Toxicology & Environmental and Occupational Health Sciences Institute, Rutgers University, Piscataway, NJ

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.

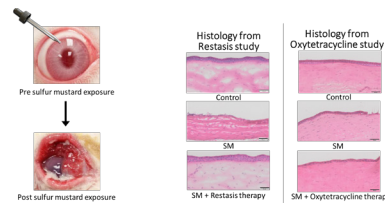
Approach



Example Graphical Abstracts

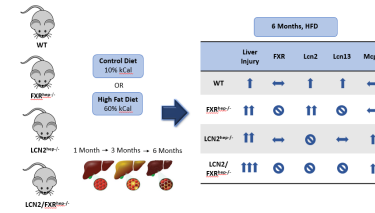
Comparing Ocular Therapies to Improve Corneal Mustard-Induced Injuries

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



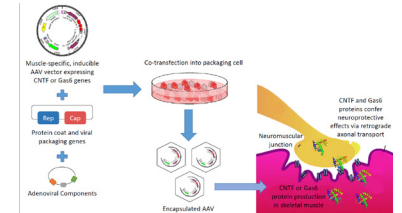
Effects of Deficiency of FXR and LCN2 on Liver Injury in a High-Fat Diet-Induced Mouse NASH Model

Jaehee Yang, Laura Armstrong, Bo Kong, Grace Guo
Rutgers University



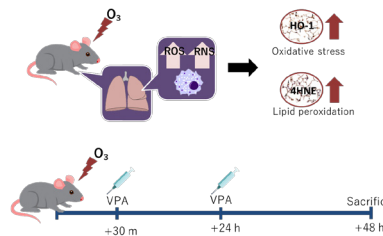
Novel Gene-Based Delivery of Neurotrophic Factors for ALS Treatment

Sakina Plumber, Yicong Le, Rongping Zhou
University of Texas at Dallas and Rutgers University



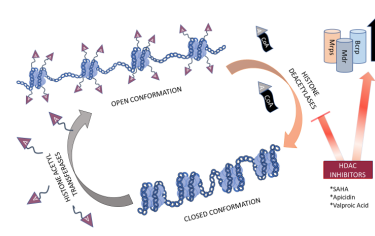
Effects of Valproic Acid on Ozone-Induced Inflammatory Mediator Expression in Mice

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



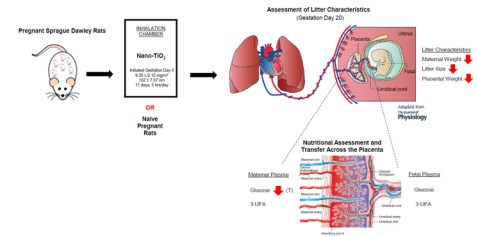
Epigenetic Regulation of Hepatic Efflux Transporters in Mice

Hye Min Shin, Daheia Diana You, Lauren M. Aleksunes
Rutgers University



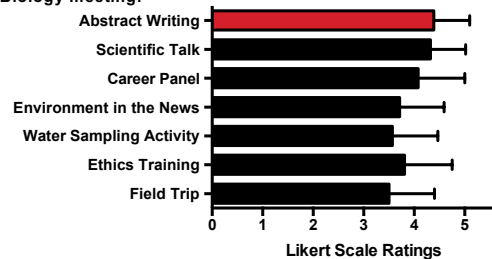
Gestational Exposure to Inhaled Nano-sized Titanium Dioxide Impairs Maternal Nutrition and Fetal Health

Charlotte Love, Sara Fournier, Phoebe Stapleton
Grinnell College and Rutgers University

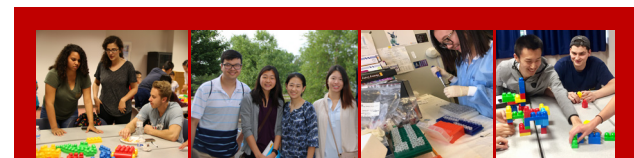


Assessment & Outcomes

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



Acknowledgments



<https://surf.rutgers.edu>