



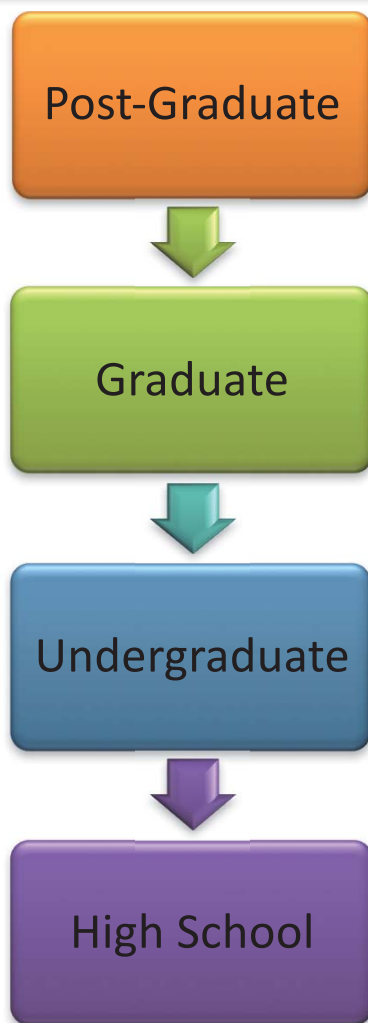
ASPET.ORG

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Rutgers University, Department of Pharmacology and Toxicology
and Ernest Mario School of Pharmacy



Integration of Toxicology Education



https://pharm.rutgers.edu/content/summer_research_fellowship_program



Program Leadership



Debra Laskin



Lauren Aleksunes



Laura Liang



Ragena Riley & Kimi Nakata



Stephanie Marco



Diana You

11/19/17



Program Objectives

- **Objective 1.** Provide interested undergraduate students with **intensive, summer research training experiences** in NIH-funded laboratories focused on toxicology and environmental health sciences.
- **Objective 2.** Increase **literacy and awareness** of undergraduate students to the fields of toxicology and environmental health sciences.
- **Objective 3.** Create an enriching **career development** experience for a diverse student population.
- **Objective 4.** Support and encourage students to pursue **graduate studies**.
- **Objective 5.** Disseminate **student accomplishments and assessment metrics** with other universities and biomedical researchers.



Program Support

Institutional

- Department Support
- Dean of School of Pharmacy
- Graduate School

Societies

- American Society for Pharmacology and Experimental Therapeutics (ASPET)
- Society of Toxicology (SOT)

Extramural

- NIH R25 Summer Training Grant
- NIEHS Center Community Outreach and Education Core (COEC)



Team-Based Research Plan

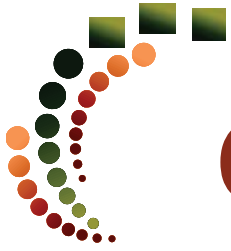
- “Science in the News” reports by students
 - Discuss the study design, strengths & weaknesses
- Environmental sampling group project and discuss of risk assessment

The New York Times

Environmental Factors Like Pollution Cause a Quarter of Deaths, W.H.O. Says

By SABRINA TAVERNISE MARCH 15, 2016





Career Development Activities

- Linked In Profiles
- Interviewing Skills Workshop
- Toxicology Career Panel:
 - Kary Thompson, Bristol-Myers Squibb
 - Kristian Fried, Colgate-Palmolive
 - Kim Pendino, Amicus Therapeutics
 - Alan Stern, Dept. of Environmental Protection



Program Partners & Retention

- Research in Science and Education (RiSE)
 - STEM program for underrepresented minority, first-in-college, and economically disadvantaged students
 - On-campus housing
 - GRE prep course
- SUPER-Grad Pipeline Fellowship
 - Retention of students for graduate studies



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Field Trip to Bristol-Myers Squibb

- Understand roles of scientists in preclinical safety
- Discuss educational requirements and training needed for various positions
- Tour facilities
- Meet with scientists



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Outcomes

- Graduate school, papers and presentations!



Toxicology

Volume 306, 5 April 2013, Pages 108–113



Hepatic and renal Bcrp transporter expression in mice treated with perfluorooctanoic acid

Lobna M. Eldasher^a, Xia Wen^a, Michael S. Little^a, Kristin M. Bircsak^a, Lindsay L. Yacovino^a, Lauren M. Aleksunes^{a, b}



Oxygen-Linked S-Nitrosation in Fish Myoglobins: A Cysteine-Specific Tertiary Allosteric Effect

Signe Helbo, Andrew J. Gow, Amna Jamil, Barry D. Howes, Giulietta Smulevich, Angela Fago

Chemical Research in Toxicology

Pharmacodynamics of Ginsenosides: Antioxidant Activities, Activation of Nrf2, and Potential Synergistic Effects of Combinations

Constance Lay Lay Saw[†], Anne Yuqing Yang^{†‡}, David C. Cheng[†], Sarandeep S.-S. Boyanapalli[†], Zheng-Yuan Su[†], Tin Oo Khor[†], Song Gao[†], Jingrong Wang[†], Zhi-Hong Jiang[†], and Ah-Ng Tony Kong^{†§}

[†] Department of Pharmaceutics, Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey, Piscataway, New Jersey 08854, United States



Journal of Controlled Release

Volume 171, Issue 3, 10 November 2013, Pages 349–357

Tenth International Nanomedicine and Drug Delivery Symposium



Nanostructured lipid carriers as multifunctional nanomedicine platform for pulmonary co-delivery of anticancer drugs and siRNA

Oleh Taratula^{a, b}, Andriy Kuzmov^a, Milin Shah^a, Olga B. Garbuzenko^a, Tamara Minko^{a, c}



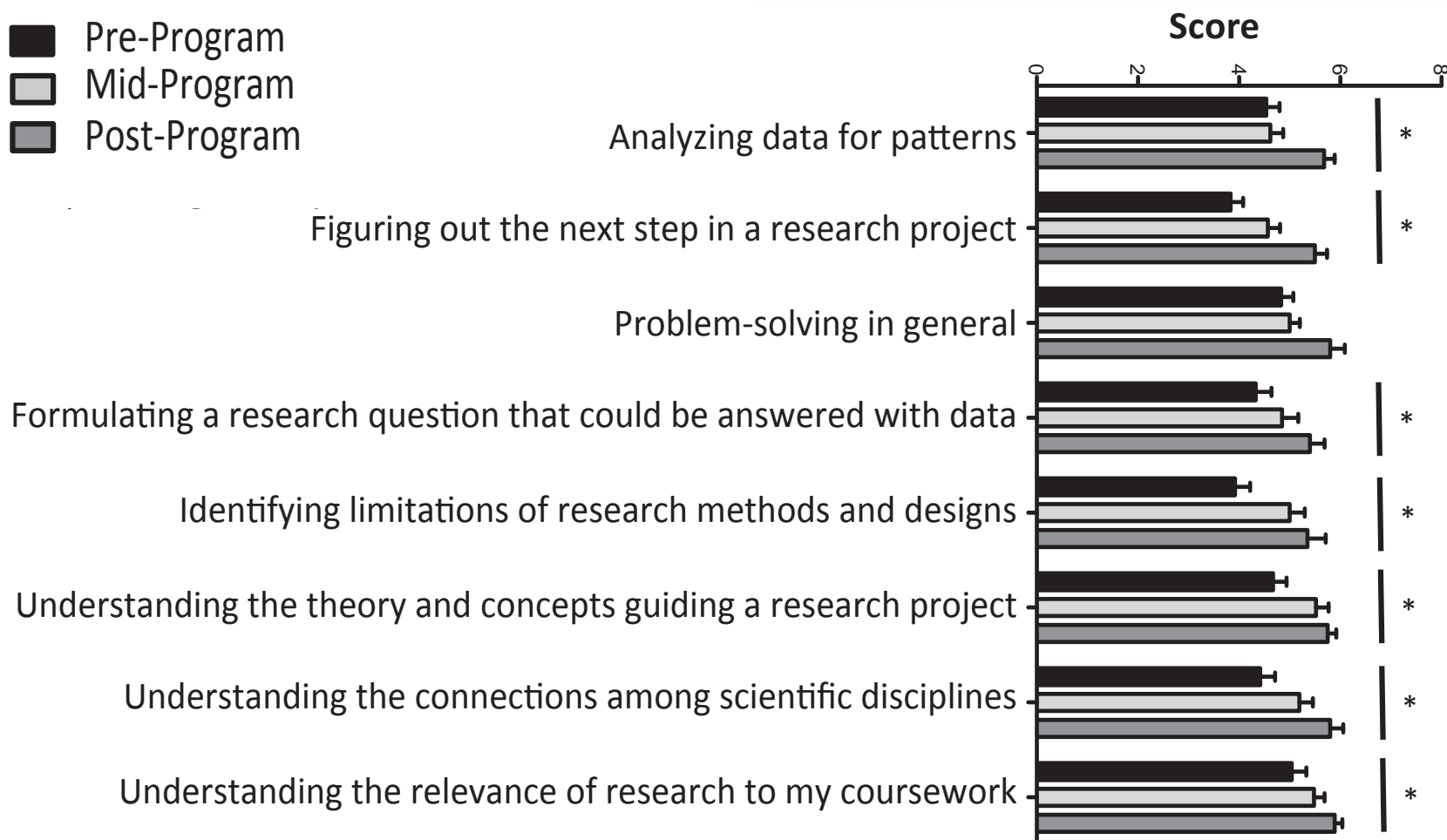
Evaluation

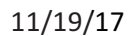
- Customized self-assessment mechanism
- Three time points (week 1, 5, and 10), 7-point Likert scale
- Use unique digit code for each student to look at individual changes
- Paper evaluation with > 90% response rates
- IRB exempt approval from university



Evaluation

- Pre-Program
- Mid-Program
- Post-Program







2015 Rutgers SURF Program



11/19/



2015 Rutgers ASPET SURF Students



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